48-2002

Materials Specification

PRINT ISSUED	TITLE	PART NO.
8/20/71	HOSE, LOW PRESSURE SINGLE FABRIC BRAID	48- 2002
LAST CHG LTR. C		SHEET 1 OF 1

CHG	BY	DATE	WAS

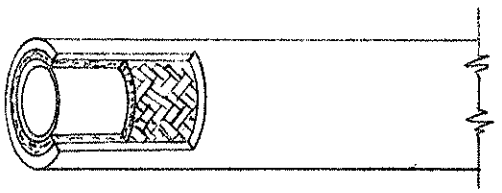
SCOPE

This specification identifies single fabric braid low pressure hose.

APPLICATION

For fuels & lube oils, air and water.

SKETCH



SPECIFICATION NUMBERS

HOSE SIZE		MANUFACTURER'S NUMBER					FREIGHTLINER SPECIFICATION NUMBER
		AQ	PH	STX	WH	AQ*	
4		2556-4	1/4-831	SF 3284-4	H-101-4	2575-4	48- 2002-004
6		2556-6	3/8-831	SF 3284-6	H-101-6	2575-6	-006
8		2556-8	1/2-831	SF 3284-8	H-101-8	2575-8	-008
10		2556-10	5/8-831	SF 3284-10	H-101-10	—	-010
12		2556-12	3/4-831	SF 3284-12	H-101-12	—	-012

*AQ 2575 has recom. working press. of 200 psi. AQ 2575-6 has 4.00 bend radius.

CHG	BY	DATE	WAS
C	HJR	6-28-71	OLD FORMAT - REDRAWN

SPECIFICATIONS

1.

HOSE SIZE (16ths)	I.D.	O.D.	MAX. * Working Pressure (P.S.I.)	MIN. Bend Radius
4	.250	.500	250	3.00
6	.375	.625	250	3.00
8	.500	.750	250	5.00
10	.625	.906	250	6.00
12	.750	1.031	250	7.00

2. Construction: Synthetic rubber inner tube, rayon braid reinforcement, abrasion, oil and mildew resistant synthetic rubber cover.

3. Temperature Range: -40° F to +200° F. (-40° C to +93° C) except air +160° F. (+71° C) maximum.

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED		7-28-71			FT.

Portland FREIGHTLINER CORPORATION Oregon 97208

E-183

DRAWN	ERK	HOSE-MEDIUM PRESSURE SAE 100R5 TYPE	48-02004
APPRV	KCB		
DATE	09/06/88	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1

SCOPE: THIS SPECIFICATION DESCRIBES WIRE REINFORCED ELASTOMERIC HOSE THAT MEETS THE LATEST REQUIREMENTS OF SAE J517, 100R5.

APPLICATION: FOR HYDRAULICS, AIR, FUEL AND LUBRICATING OILS.

SPECIFICATION NUMBERS:

HOSE DASH SIZE	I.D. NOM. (INCHES)	O.D. REF. (INCHES)	WORKING PRESSURE MAX (PSI)	BEND RADIUS MIN. (IN)	FREIGHTLINER SPECIFICATION NUMBER
4	0.188	0.52	3000	3.00	48-02004-004
6	0.312	0.67	2250	4.00	-006
8	0.406	0.77	2000	4.62	-008
10	0.500	0.92	1750	5.50	-010
12	0.625	1.08	1500	6.50	-012
16	0.875	1.23	800	7.38	-016
20	1.125	1.50	625	9.00	-020
24	1.375	1.75	500	10.50	-024

SPECIFICATIONS:

1. MATERIAL: EQUALS OR EXCEEDS THE SPECIFICATIONS OF SAE J517, 100R5.

2. CONSTRUCTION: INNER TUBE---SYNTHETIC RUBBER
REINFORCMENT-TEXTILE INNER BRAID, STEEL WIRE BRAID
COVER--------TEXTILE BRAID.

3. TEMPERATURE RANGE: -40° F TO 250° F

CHG	JOB/RLSE NO	DATE	BY	REVISION
K	P*A078-55	09/06/88	ERK	REVISED AND REDRAWN

48-02005

Materials Specification

PRINT ISSUED	TITLE	PART NO.
8/13/71	HOSE, MEDIUM PRESSURE SAE J1402 TYPE D-2	48-02005
LAST CHG. LTR. A		SHEET OF

CHG	BY	DATE
A		WAS

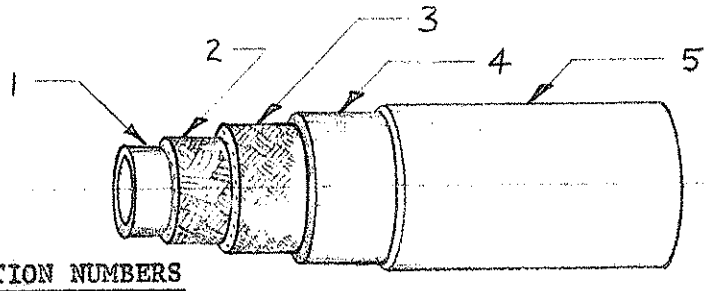
SCOPE

This specification covers flexible hose for automotive fluids at moderate pressures and at temperatures from -40° to 300°F (-40° to 150°C).

APPLICATION

For air, water, fuel, lube, torque converter and coolant lines.

SKETCH



SPECIFICATION NUMBERS

SIZE NO.	SIZE I.D.	SIZE O.D.	MINIMUM BEND RADIUS	WORK PRES. MAX.	MANUFACTURER'S NUMBERS PH	MANUFACTURER'S NUMBERS STX	MANUFACTURER'S NUMBERS AQ	FREIGHTLINER SPECIFICATION NUMBER
4	3/16	.52	1- 1/2	1500	SS-25- 4	SF3285- 4	FC184-04	48-02005-004
6	5/16	.67	2	500	- 6	- 6	-06	-006
8	13/32	.77	2- 5/16	500	- 8	- 8	-08	-008
10	1/2	.92	2- 3/4	450	-10	-10	-10	-010
12	5/8	1.08	3- 1/4	450	-12	-12	-12	-012
16	7/8	1.23	3-11/16	250	-16	-16	-16	-016
20	1-1/8	1.50	4- 1/2	250	-20	-20	-20	-020

CHG	BY	DATE
A	HJR	7-9-71
		WAS STX, AQ Nos. Added

SPECIFICATIONS

1 Specially compounded heat resistant (300°F, Max.) inner tube
2 Cotton braid reinforcement next to inner tube.
3 Stainless steel single wire braid
4 Neoprene coating
5 Abrasion and mildew resistant cover

ENGINEERING NOTES

(1) This hose conforms to SAE Standard J1402 Type D, Class II, but is dimensionally identical to SAE 100R5 hose.

2. Used with standard reusable SAE 100R5 fittings.

COMPILED	HJR	DATE DRAWN		MATERIAL	
APPROVED		4-13-71		(1)	

Materials Specification

PRINT ISSUED	TITLE	PART NO.
9-29-71	HOSE, RUBBER, FLEXIBLE	48-02006
LAST CHG. LTR. A		SHEET 1 OF 1

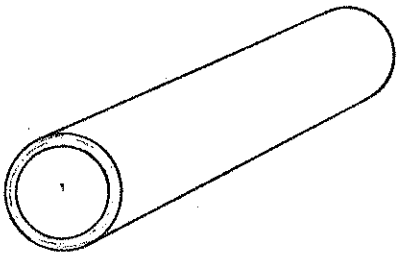
CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
A	DL	2-7-74	Rev. & Redrawn Add 6.00 Mfg's P/N. 5 Ply I.D. 0569

SCOPE This specification identifies flexible, cotton reinforced rubber hose commonly called fire hose.

APPLICATION General use part. Air intake ducting.

SKETCH



SPECIFICATION NUMBERS

I.D.	O.D.	PLY	MANUFACTURERS NUMBER		FREIGHTLINER SPECIFICATION NUMBER
			GT		
1.00					48-02006-000
2.00					-001
3.00					-002
4.00	4.75	5	3135-0198		-003
5.00	5.75	5	3135-0398		-004
6.00	6.75	5	3135-0916		-005

COMPILED	D. Le L.	DATE DRAWN		MATERIAL	UNIT OF MEASURE
APPROVED	[illegible]	9-20-71			FT.

Portland FREIGHTLINER CORPORATION Oregon 97208

Materials Specification

PRINT ISSUED	TITLE	PART NO.
	HOSE, AIR CONDITIONING AEROQUIP FC 160	48-02007
LAST CHG LTR		SHEET 1 OF 1

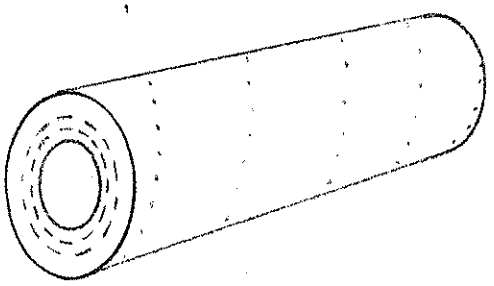
WAS

CHG	BY	DATE

SCOPE This specification identifies a nylon tube, double textile braid reinforced, and having a perforated synthetic rubber cover.

APPLICATION Automotive air conditioning (for Freon 12 or 13).

SKETCH



SPECIFICATION NUMBERS

TUBE SIZE	I.D.	O.D.	RECOMMENDED WORKING PRES. P.S.I.	BURST PRES. P.S.I.	BEND RADIUS (MIN)	MANUFACTURER'S NUMBER AQ		FREIGHTLINER SPECIFICATION NUMBERS
6	.31	.67	350	1750		FC160- 6		48-02007-006
8	.41	.77	350	1750		- 8		-008
10	.50	.92	350	1750		-10		-010
12	.62	1.08	350	1750		-12		-012

WAS J #30325

CHG	BY	DATE
—	—	—

SPECIFICATIONS

1. Material: Tube, Nylon
   Reinforcement, Two Layers Textile Braid
   Cover, Perforated Synthetic Rubber

2. Temperature range -40°F to +250°F (-40°C to +121°C)

3. CAUTION: Be sure to use fittings recommended for use with this hose.

		DATE DRAWN			UNIT OF MEASURE
COMPILED	HJR	5-24-72			FT.
APPROVED	Rollins				

ns

Portland FREIGHTLINER CORPORATION Oregon 97208

48-02008

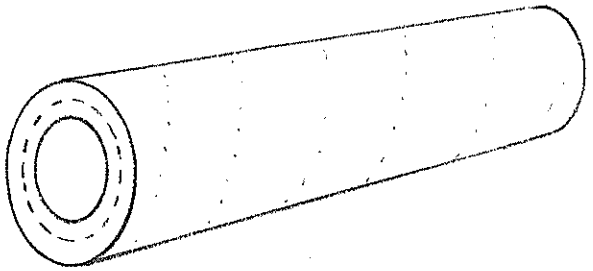
Materials Specification

PRINT ISSUED	TITLE	PART NO.
	HOSE, AIR CONDITIONING AEROQUIP FC 202	48-2008
LAST CHG LTR		SHEET 1 OF 1

SCOPE This specification identifies a nylon tube, single textile braid reinforced, and having a perforated synthetic rubber cover.

APPLICATION Automotive air conditioning (for freon 12 or 13).

SKETCH



SPECIFICATION NUMBERS

TUBE SIZE (NOM)	I.D.	O.D.	RECOMMENDED WORKING PRES. P.S.I.	BURST PRES. P.S.I.	BEND RADIUS (MIN)	MANUFACTURER'S NUMBER AQ		FREIGHTLINER SPECIFICATION NUMBERS
6	.31	.67	350	1750	4.00	FC202- 6		48-2008-006
8	.41	.77	350	1750	4.62	- 8		-008
10	.50	.92	350	1750	5.50	-10		-010

SPECIFICATIONS

1. Material: Tube, nylon
   Reinforcement, Single Textile Braid
   Cover, perforated Synthetic Rubber

2. Temperature Range -40°F to +250°F (-40°C to + 121°C).

3. Caution: Be sure to use fittings recommended for use with this hose.

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
—	—	—	J #30325

ns

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED	Rollins	5-24-72			FT.

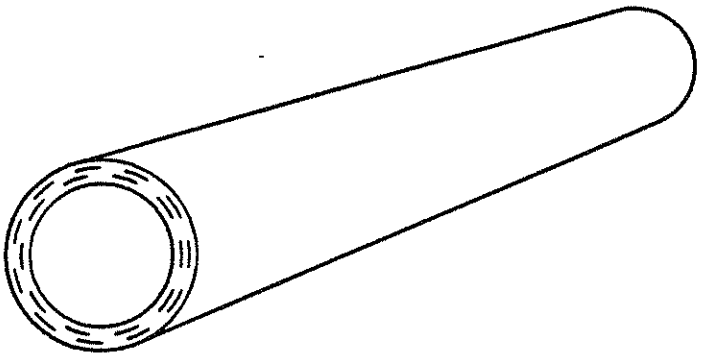
Portland FREIGHTLINER CORPORATION Oregon 97208

3613B	HOSE - HEATER, STANDARD DUTY, OIL RESISTANT	48-02009
LAST CHG LTR: B		SHEET 1 OF 1

NOTE: THIS SPECIFICATION IDENTIFIES OIL RESISTANT, FABRIC OR YARN REINFORCED ELASTOMERIC HOSE.

APPLICATION: STANDARD HEATER HOSE SERVICE.

SKETCH:



SPECIFCATION NUMBERS:

I. D. (INCHES) NOM.	TOL.	O. D. (INCHES) NOM.	TOL.	MAXIMUM WORKING PRESSURE	MANUFACTURER'S NUMBER STX		FREIGHTLINER SPECIFICATION NUMBER
3/8	±.03	.61	±.03	250 PSI	203-6		
1/2	±.03	.75	±.03	250 PSI	203-8		48-02009-050
5/8	±.03	.91	±.03	250 PSI	203-10		48-02009-062
3/4	±.03	1.03	±.03	250 PSI	203-12		48-02009-075
1	±.06	1.34	±.06	175 PSI	--		

SPECIFICATIONS:

1. MATERIAL: SEAMLESS SYNTHETIC RUBBER INNER TUBE, REINFORCED WITH SINGLE PLY OR MULTIPLE PLIES OF BRAIDED OR KNITTED FABRIC AND COVERED WITH SYNTHETIC RUBBER COVER. SYNTHETIC RUBBER SHALL BE RESISTANT TO OIL, DIESEL FUELS, GASOLINE AND ANTI-FREEZE SOLUTIONS. HOSE SHALL HAVE A CONTINUOUS SERVICE TEMPERATURE OF -40°F TO +200°F.

2. ALTERNATE MATERIAL: STANDARD DUTY HEATER HOSE PER SAE STANDARD J20, 20R3 HEATER HOSE WITH CLASS C TUBE

COMPILED	DJL	DATE DRAWN	CTC PAPER	UNIT OF MEASURE	MASTER NUMBER	
APPROVED	DJL	12-19-84			05150	000D1

PORTLAND FREIGHTLINER CORPORATION OREGON 97208

EAC-826

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION
A1	3613B	DJL	12-19-84	REVISED & REDRAWN
A2	3613B	DJL	12-19-84	STX FROM 3284 TO 203
B	P.A078-37	ERK	07/27/88	DWG. UPDATE

DRAWN	ERK	TITLE	ITEM NUMBER
APPRV	KCB	HOSE-COOLANT SYSTEM, SILICONE RUBBER SAE 20R1 H.T.CLASS A	48-02010
DATE	07/22/88	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1

SCOPE: THIS SPECIFICATION IDENTIFIES SILICONE RUBBER COOLANT HOSE FOR HEAVY-DUTY APPLICATION.

APPLICATION: FOR HEAVY-DUTY VEHICLE COOLING SYSTEMS. DESIGNED TO FUNCTION AT HIGH AND LOW TEMPERATURES WITH EXTENDED SERVICE LIFE.

SPECIFICATION NUMBERS:

I.D. NOM. (INCHES)	O.D. REF. (INCHES)	WALL THICKNESS		FREIGHTLINER SPECIFICATION NUMBER
3/8	.76			48-02010-038
5/8	1.02			-062
3/4	1.14			-075
7/8	1.26			-088
1	1.39			-100
1 1/4	1.64	.170		-125
1 1/2	1.89			-150
1 5/8	2.00	TO		-162
1 3/4	2.14	.220		-175
2	2.39			-200
2 1/4	2.64			-225
2 3/8	2.77			-238
2 1/2	2.89			-250
2 3/4	3.14			-275
3	3.39			-300
3 1/4	3.63			-325
3 1/2	3.89			-350

SPECIFICATIONS:

1. MATERIAL: EQUALS OR EXCEEDS THE SPECIFICATIONS OF SAE 20R1 H.T. CLASS A STANDARD WALL.

2. CONSTRUCTION: INNER TUBE ---- SILICONE RUBBER
   REINFORCEMENT - MULTIPLE PLIES OF FABRIC OR YARN SUFFICIENT TO MEET MINIMUM BURST REQUIREMENTS
   COVER --------- SILICONE RUBBER

3. TEMPERATURE RANGE: -65°F TO +350°F.

CHG	JOB/RLSE NO	DATE	BY	REVISION
H	P*A078-37	07/22/88	ERK	REVISED AND REDRAWN

Materials Specification

PRINT ISSUED		TITLE	PART NO.
		HOSE, COOLANT SYSTEM, SILICONE RUBBER	48-02010
LAST CHG. LTR.	F		SHEET 2 OF 2

CHG	BY	DATE	WAS	JOB NO
D	TTR	10-22-79	ADD GT MFG OF MAT. & TEMP.	66588
E	JH	8-27-80	ADDED CWE & HUN	D2481
F	NR	6-12-81	DEL. HUN COLUMNS	01304

CHG	BY	DATE	WAS	JOB NO
-	-	—	—	A0072
A	HJR	9-22-75	See Sht. 1	A0779
B	RG	4-4-77	INSH	63777
C	OJ	8-15-77	SEE SHT 1	64764

SPECIFICATIONS

1. **Material:** Equals or exceeds Heavy-duty type SAE 20R1 and Federal Specification ZZ-H-428, Type 1 (Heavy-duty, lightwall).

2. **Construction:** (F)

	HDV		GT	STX	CWE
Tube	Silicone Rubber		Silicone Rubber	Silicone Rubber	Silicone Rubber
Reinforcement	Polyester Woven Fabric		Polyester Woven Fabric	Polyester Woven Fabric	Polyester Woven Fabric
Cover	Silicone Rubber		Silicone Rubber	Silicone Rubber	Silicone Rubber

3. Temperature Range: (F)

HDV		GT	STX	CWE
+350°F to - 65°F		+350°F to -65°F	+350°F to - 65°F	+350°F to - 65°F

COMPILED	DL	DATE DRAWN			UNIT OF MEASURE
APPROVED	Rollins	2-14-73			FT.

Portland FREIGHTLINER CORPORATION Oregon 97208

E-183

FDCEDA

48-02011

CHG	BY	DATE	WAS

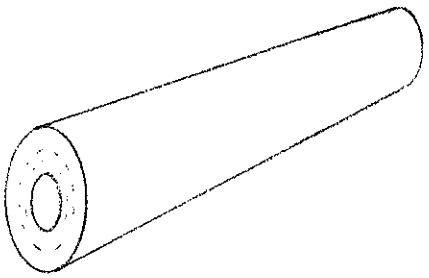
CHG	BY	DATE	WAS
—	—	—	J#A0528

PRINT ISSUED		TITLE	PART NO.
		HOSE, AIR BRAKE SAE J1402 TYPE A	48-02011
LAST CHG LTR	-		SHEET 1 OF 1

SCOPE This specification identifies mandrel-built air brake hose with double fabric braid reinforcement.

APPLICATION Tractor to trailer lines, axle chamber lines and tractor service lines especially for cold weather applications.

SKETCH



SPECIFICATION NUMBERS

I.D. ± .016	O.D. Min.	O.D. Max.	WORKING PRESSURE PSI (Max.)		MANUFACTURER'S NUMBER AQ		FREIGHTLINER SPECIFICATION NUMBER
.38	.719	.781	225		2550-6		48-02011-006

SPECIFICATIONS

1. Must meet or exceed all pertinent provisions of SAE standard J1402 for type "A" air brake hose.
2. Construction: Synthetic rubber tube, two textile braid reinforcements and synthetic rubber cover.
3. Temperature Range: -40°F to +250°F (-40°C to +121°C).

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED	Rollins	9-26-73			FT.

Portland FREIGHTLINER CORPORATION Oregon 97208

A1-0202

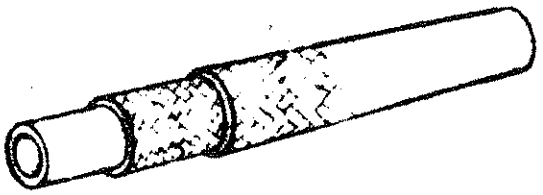
Materials Specification

PRINT ISSUED	TITLE	PART NO.
	HOSE, AIR CONDITIONING	48-02012
LAST CHG LTR D		SHEET 1 OF 1

SCOPE This specification identifies a medium pressure flexible reinforced all nylon hose.

APPLICATION Air conditioner tubing.

SKETCH



SPECIFICATION NUMBERS

NOMINAL HOSE I.D. (IN.)	HOSE DASH SIZE	HOSE I.D.	HOSE O.D.	MIN. BEND RADIUS (IN.)	MANUFACTURER'S NUMBER AQ	MANUFACTURER'S NUMBER AQ	FREIGHTLINER SPECIFICATION NUMBER
	AQ						
5/16	6	.31	.67	4.00	FC160-6	FC202-6	48-02012-005
3/8	8	.41	.77	4.62	FC160-8	FC202-8	-006
1/2	10	.50	.92	5.50	FC160-10	FC202-10	-008
5/8	12	.62	1.08	6.50	FC160-12	——	-012

SPECIFICATIONS D

1. CONSTRUCTION: Inner Tube: Seamless extruded nylon.
   Reinforcement: One or two layers of high tensile textile braid bonded to inner tube and cover.
   Cover: Perforated synthetic rubber or extruded nylon.

2. PERFORMANCE: Must meet qualification and inspection tests sections in SAE J51 Standard for Type C hose except for bursting strength which shall be 1750 FSI minimum.

   Note: This hose does not meet the construction or dimensional requirements for SAE J51 hose.

3. MARKING: Per SAE J51 except for reference to SAE number.

4. COMPLETED HOSE ASSEMBLIES: Must use compatible hose and fittings from the same manufacturer.

CHG	BY	DATE	WAS	JOB NO
D	SW	9-9-80	Revised Spec	97031

CHG	BY	DATE	WAS	JOB NO
—	—	—	—	—
A	[illegible]	3-13-75	Added AQ Info.	A06775
B	HJR	12-23-75	Delete PH Nos.	A0796
C	HJR	9-27-76	Delete -3,-4,-16	A0836

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED	[signature]	8-20-74			FT.

Portland FREIGHTLINER CORPORATION Oregon 97208

D C B

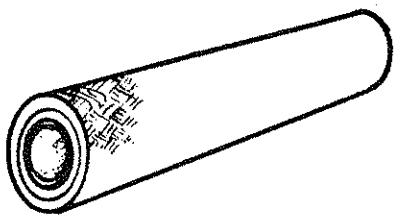
Materials Specification

ORIGINAL JOB NO.	TITLE	PART NO.
D1064	HOSE, LOW PRESSURE L.P. GAS	48-02013
LAST CHG LTR: A		SHEET 1 OF

SCOPE This specification identifies a seamless synthetic rubber inner tube reinforced with fabric braids.

APPLICATION Low pressure service with liquefied petroleum gas.

SKETCH



SPECIFICATION NUMBERS (A)

HOSE SIZE	I.D.	O.D.	BURST PRES. MIN.	WORKING PRES. MAX	BEND RADIUS MIN.	MANUFACTURER'S NUMBER		FREIGHTLINER SPECIFICATION NUMBER
						PH		
6	.31	.67	1750	350	4.25	2LPG-6		48-02013-006

SPECIFICATIONS

1. CONSTRUCTION: Inner tube, seamless synthetic rubber. Reinforcement, fabric braids, impregnated with a mildew, water, fuel and oil resistant synthetic materials.

2. IDENTIFICATION: Hose part number, size and Underwriter's label.

3. RECOMMENDED TEMPERATURE RANGE: -40° F (-40°C) through +250°F.(121°C.) (A)

COMPILED	H.J.R.	DATE DRAWN			UNIT OF MEASURE
APPROVED		8-30-76			FT

CHANGE INFORMATION

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION
A	75624	SW	9-26-80	Was "STX 280-6"; Was "+275°F.(135°C.)"
-	-	-	-	

CHANGE INFORMATION

LTR	JOB NO.	BY	DATE

Materials Specification

ORIGINAL JOB NO.	TITLE	PART NO.
D1784	HOSE, WATER, LOW PRESSURE SINGLE FABRIC BRAID	48-02014
LAST CHG LTR		SHEET 1 OF 1

CHANGE INFORMATION | LTR | JOB NO. | BY | DATE

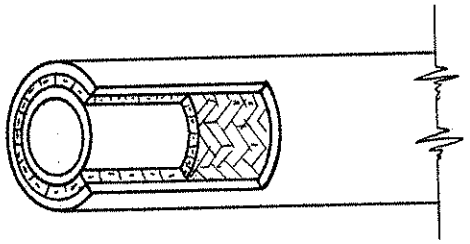
SCOPE

This specification identifies single fabric braid very low pressure hose.

APPLICATION

For water

SKETCH



SPECIFICATION NUMBERS

HOSE SIZE		MANUFACTURER'S NUMBER					FREIGHTLINER SPECIFICATION NUMBER
		GT					
5 7 8		4251- 4115 4118 4121					48-02014 -5 -7 -8

CHANGE INFORMATION | LTR | JOB NO. | BY | DATE

SPECIFICATIONS

1.

HOSE SIZE (32NDS)	I.D.	NIPPLE SIZE	MAX.* Working Pressure (P.S.I.)
5	.156	.188	60
7	.219	.250	60
8	.250	.312	60

2. Construction: Synthetic rubber inner tube, fabric braid reinforcement, synthetic rubber cover.

3. Hose shall meet standards set by SAE J50a for windshield wiper hose.

COMPILED	K.HUYNH	DATE DRAWN			
APPROVED	[illegible]	7-21-78			

M/F

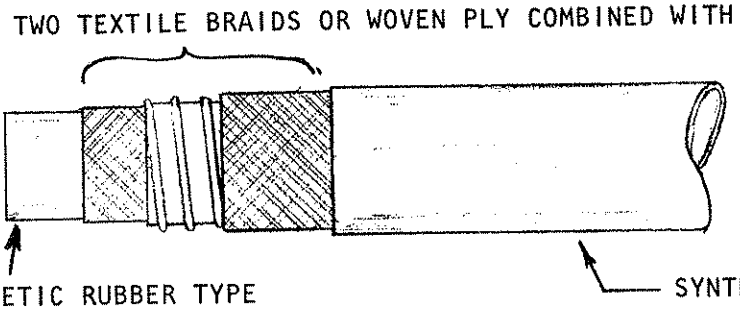
ORIGINAL JOB NO.	TITLE	PART NO.
B1074	HYDRAULIC SUCTION HOSE SAE 100 R4	48-02015
LAST CHG LTR		SHEET 1 OF 1

CHANGE INFORMATION	DATE	BY	JOB NO.	LTR

SCOPE: This specification covers hose use in low pressure and vacuum applications with petroleum and water base hydraulic fluids.

APPLICATION: Hydraulic suction and return lines for use with reusable type end fittings.

SKETCH



SPECIFICATION NUMBERS:

HOSE SIZE	I.D. INCHES	O.D. INCHES	BEND RADIUS IN.(MIN.)	MANUFACTURER'S NUMBERS			FREIGHTLINER SPECIFICATION NUMBER
				PH	STX		
-12	3/4	1.30	5	881-12	219-12		48-02015-12
-16	1	1.56	6	-16	-16		-16
-20	1-¼	1.86	8	-20	-20		-20
-24	1-½	2.14	10	-24	-24		-24
-32	2	2.69	12	-32	-32		-32

SPECIFICATIONS:

HOSE SIZE	MIN. BURST (PSI)	MAX. WORK (PSI)
-12	1200	300
-16	1000	250
-20	800	200
-24	600	150
-32	400	100

ENGINEERING NOTES:

1. Must meet SAE 100 R4 requirements.
2. Temperatures: -40°F to +200°F, avoid continuous uses at max. temperature together with max. pressure.

		DATE DRAWN			
COMPILED	MDE	8-4-78			
APPROVED	DEJ				

DRAWN	IP	TITLE	DRAWING NUMBER
APPRV	LKG	HOSE-SAE 100R4 HYDRAULIC SUCTION	48-02015
DATE	09/18/98	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1 / CHG. LTR. C
CATIA ORIGINAL			

UNLESS OTHERWISE NOTED, DIMENSIONS ARE IN INCHES

SCOPE: THIS SPECIFICATION COVERS HOSE USE IN LOW PRESSURE AND VACUUM APPLICATIONS WITH PETROLEUM AND WATER BASE HYDRAULIC FLUIDS.

APPLICATION: HYDRAULIC SUCTION AND RETURN LINES FOR USE WITH REUSABLE AND CRIMP TYPE END FITTINGS.

SPECIFICATION NUMBERS:

HOSE SIZE	I.D. INCHES	O.D. INCHES	BEND RADIUS IN. (MIN)	MIN. BURST (PSI)	MAX. WORK (PSI)	FREIGHTLINER SPECIFICATION NUMBER
12	3/4	1.30	1.20	1200	300	48-02015-012
16	1	1.56	1.49	1000	250	48-02015-016
20	1-1/4	1.86	1.78	800	200	48-02015-020
24	1-1/2	2.14	2.06	600	150	48-02015-024

ENGINEERING NOTES:

1. MATERIAL: MUST MEET SAE J517, 100 R4 REQUIREMENTS.
2. CONSTRUCTION: INNER TUBE : SYNTHETIC RUBBER
   REINFORCEMENT: TWO TEXTILE BRAIDS OR WOVEN PLY COMBINED WITH WIRE REINFORCEMENT
   COVER : MSHA SYNTHETIC RUBBER
3. TEMPERATURES: -40°F TO +257°F. AVOID CONTINUOUS USES AT MAX. TEMPERATURE TOGETHER WITH MAX. PRESSURE.
4. APPROVED SUPPLIER: PARKER HANNIFAN 881 HOSE.

CHG	JOB NO	DATE	BY	REVISION
C	P03175-93	09/18/98	IP	REVISED AND REDRAWN IN CATIA, ADDED -024 AND NOTE 4.

ORIGINAL JOB NO.	TITLE	PART NO.
77570	HOSE, W/S WASHER	48-02017
LAST CHG LTR		SHEET 1 OF 1

Application: Intended primarily for use as fluid lines for automotive windshield washer systems.

Specification Numbers:

I.D. ±.015	O.D. +.045 −.015	Burst Pres. P.S.I.		Freightliner Specification Number
.100	.215	200		48-02017-100
.156	.344	200		48-02017-156

Specifications: Material color - Black SAE J200,

$3B710C_{12}E_{34}F_{17}Z_1$

Z_1 Durometer = 75 ± 5 or 3BA

$710A_{14}B_{13}C_{12}F_{17}Z_1$; Z_1 (EPDM)

CHANGE INFORMATION	DATE	BY	JOB NO.	LTR

CHANGE INFORMATION	DATE	BY	JOB NO.	LTR

COMPILED	TIEN TRUONG	DATE DRAWN			
APPROVED		10-29-79			

MF

ORIGINAL JOB NO.	TITLE	PART NO.
M0132	HOSE: THERMOPLASTIC HYDRAULIC, SAE 100R7	48-2018
LAST CHG LTR		SHEET 1 OF 2

CHANGE INFORMATION | LTR | JOB NO. | BY | DATE

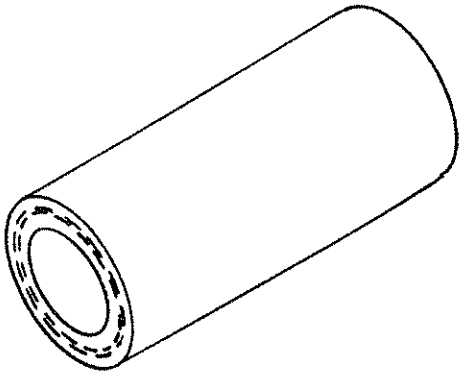
SCOPE

This specification describes reinforced thermoplastic hose which conforms to SAE 100R7

APPLICATION

Hydraulic lines where temperature ranges are not extreme (-40°F to +200°F). Tilt system hoses and similar applications with petroleum, water base and synthetic fluids.

SKETCH



PART NUMBERS

Hose Size *	Manufacturers Part No.							Freightliner Part Number
	AQ	PK	GT	IB	STX	WH	SMQ	
# 3	FC372-03	540N-3	3C7B	HR703	5208-3	H43603	3130-03003	48-02018-003
# 4	-04	-4	4C7B					-004
# 5	-05	-5						-005
# 6	-06	-6						-006
# 8	-08	-8						-008

*Hose size = Hose I.D. in 16ths.

CHANGE INFORMATION | LTR | JOB NO. | BY | DATE

COMPILED	RW	DATE DRAWN			
APPROVED	CA	6-25-82			

ORIGINAL JOB NO.	TITLE	PART NO.
M0132	HOSE: THERMOPLASTIC HYDRAULIC SAE 100R7	48-2018
LAST CHG LTR		SHEET 2 OF 2

DIMENSIONS AND RATING, SAE J517d

Hose Size	Hose I.D. Basic (in.)	Hose I.D. Tolerance (in.)	Hose I.D. Tolerance (in.)	Hose O.D. Max. (.in)	Min. Burst Press (lb/in^2)	Max.WK. Press (lb/in^2)	Min.Bend Radius (in.)
# 3	.188	+.015	-.008	.423	12,000	3,000	3.50
# 4	.250	+.015	-.008	.513	11,000	2,750	4.00
# 5	.312	+.015	-.008	.590	10,000	2,500	4.50
# 6	.375	+.015	-.008	.700	9,000	2,250	5.00
# 8	.500	+.020	-.015	.860	8,000	2,000	7.00

Notes

1. Fittings used with this hose must be supplied by the same manufacturer as the hose.

CHANGE INFORMATION	DATE	BY	JOB NO.	LTR

CHANGE INFORMATION	DATE	BY	JOB NO.	LTR

COMPILED	DATE DRAWN			
APPROVED	6-25-82			

DRAWN	RDF	TITLE HOSE, MULTI-PURPOSE OIL RESISTANT	48-02019
APPRV	ERK		
DATE	01/09/90	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1

UNLESS OTHERWISE NOTED, ALL DIMENSIONS IN INCHES.

SCOPE:

THIS SPECIFICATION IDENTIFIES AN OIL RESISTANT FABRIC REINFORCED ELASTOMERIC HOSE.

APPLICATION:

LOW PRESSURE APPLICATIONS REQUIRING GOOD RESISTANCE TO AIR, OIL AND HEAT. ENGINE OIL FILL HOSE.

SPECIFICATION NUMBERS:

NOM. I.D. (INCHES)	NOM. O.D. (INCHES)	W.P. (P.S.I.)	MIN BURST (P.S.I.)	MANUFACTURER'S PART NUMBER (2)	FREIGHTLINER PART NUMBER
1.000	1.40	550	-		48-02019-100 (1)
1.25	1.58	25	70	(4) (3)	-125
1.620	1.95	25	70	GT 3137-0806 (3)	-162
2.000	2.32	15	70	GT 3137-0836 (3)	-200

(1) REPLACED BY 48-09209-100.

(2) ENGINEERING APPROVED VENDOR: GATES RUBBER.

(3) 1. TUBE: TYPE A NEOPRENE, MEETS RMA MEDIUM HIGH OIL RESISTANCE. BLACK COLOR.

2. REINFORCEMENT: 2 PLY FABRIC REINFORCING.

3. COVER: TYPE A NEOPRENE, ABRASION RESISTANT. MEETS RMA MEDIUM OIL RESISTANCE. BLACK COLOR.

(4) GT 3137-0803: CANADIAN PRODUCT NUMBER - CANADIAN SOURCED ONLY

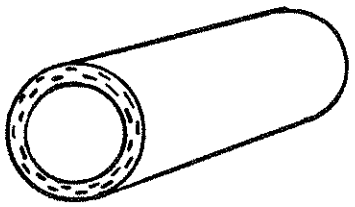
CHG	JOB/RLSE NO	DATE	BY	REVISION
B	379168-92	01/09/90	RDF	ADDED -200, UPDATED SPECS (1), (2) & (3).
C	399237-90	10/11/90	SJT	ADDED -125.

ORIGINAL JOB NO.	TITLE	PART NO.
F0337	HOSE, TURBO, SILICONE RUBBER	48-02020
LAST CHG LTR B		SHEET 1 OF 1

SCOPE: This specification identifies a silicone rubber hose.

APPLICATION: Designed to function in a high temperature diesel engine environment.

SKETCH:



SPECIFICATIONS:

4 ply fiberglass cord reinforcement.

Silicone rubber hardness 50 (Shore A)

Temperature range -65^{0} - ~~400°~~ F.

+347°F

I.D. NOM (IN)	O.D. NOM (IN)	WALL THICKNESS	BURST PRESSURE (REF) PSI		FREIGHTLINER PART NUMBER
4	4.31	.155	200	①	48-02020-4
	4.38	.190	150		

① Engineering inspection and approval required for -4 hose.
Approved Vendors: Gates 4171-0290.

20R1 A

(REFER TO 2010)

CHANGE INFORMATION	DATE	BY	JOB NO.	LTR
Added Note ①	7/31/84	RP	F0376	A
REMOVED -006	08/24/88	ERK	A078-50	B

COMPILED	Pitel	DATE DRAWN		MASTER #	UNIT OF MEASURE
APPROVED		3/28/83		05150 000D1	~~INCH~~

Portland FREIGHTLINER CORPORATION A M/F Oregon 97206

48-02081

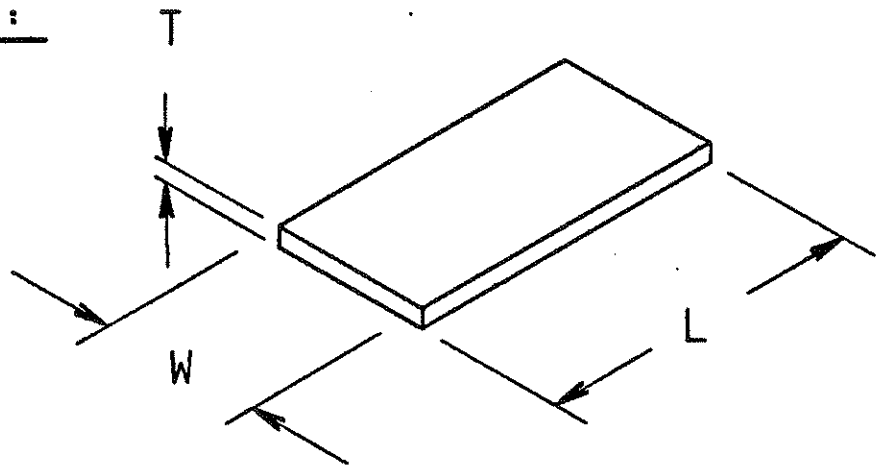
ORIGINAL SAR NO.	TITLE	PART NO.
28015	PLATE NYLON WITH MOLYBDENUM DISULPHIDE	48-02081
LAST CHG LTR –		SHEET 1 OF 1

CHANGE INFORMATION	DATE	BY	JOB NO.	LTR

SCOPE: THIS SPECIFICATION DESCRIBES NYLON PLATE WITH MOLYBDENUM DISULPHIDE.

APPLICATION: USED FOR HIGH WEAR FRICTION SURFACES.

SKETCH:



T THICKNESS	L LENGTH	W WIDTH	APPROVED VENDOR NUMBER	FREIGHTLINER SPECIFICATION NUMBER*
1.000	48.000	24.000	(PYM) CF3-17744 NYLATRON GS	48-02081-100

144 SI

*DASH NUMBER INDICATES THICKNESS IN 1/100'S OF AN INCH.

4,6

CHANGE INFORMATION	DATE	BY	JOB NO.	LTR

COMPILED	BT	DATE DRAWN	CADAM ORIGINAL	UNIT OF MEASURE	MASTER NUMBER	
APPROVED	LAD	10-09-84		EA	00001	000D1

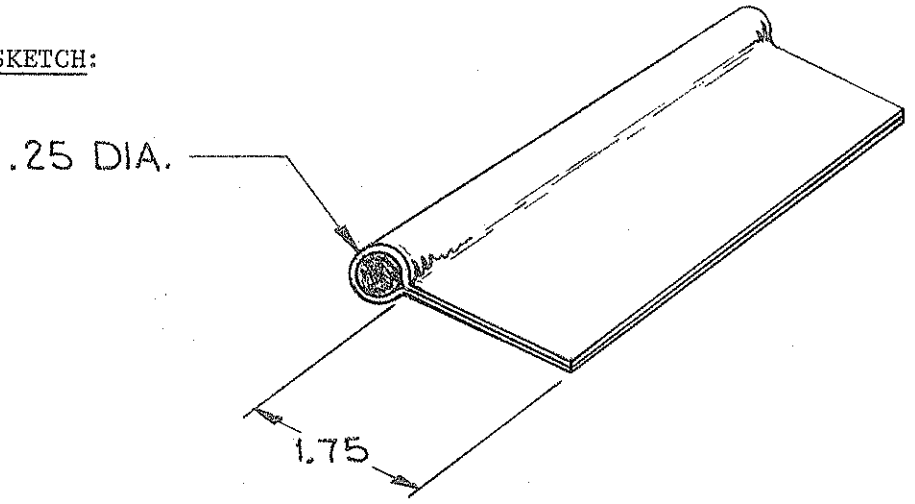
'8-2100

PRINT ISSUED	TITLE	PART NO.
	WELTING, FENDER	48-2100
LAST CHG. LTR.		SHEET OF

SCOPE: This specification identifies a vinyl coated fender welting.

APPLICATION: For use between adjacent metal surfaces, such as a fender and hood.

SKETCH:



SPECIFICATION NUMBERS

	COLOR	MANUFACTURERS NUMBER	FREIGHTLINER SPECIFICATION NUMBER
	BLACK		48-2100-000

SPECIFICATIONS:

(1) Material: Vinyl coated fabric

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
-	DL	3-14-74	J# A0584

COMPILED	D.LeL.	DATE DRAWN		MATERIAL	UNIT OF MEASURE
APPROVED	JmS.	3-14-74		(1)	FT.

48-2101

Materials Specification

PRINT ISSUED	TITLE	PART NO.
	EXTRUSION HOSE CLAMP	48-2101
LAST CHG. LTR. A		SHEET OF

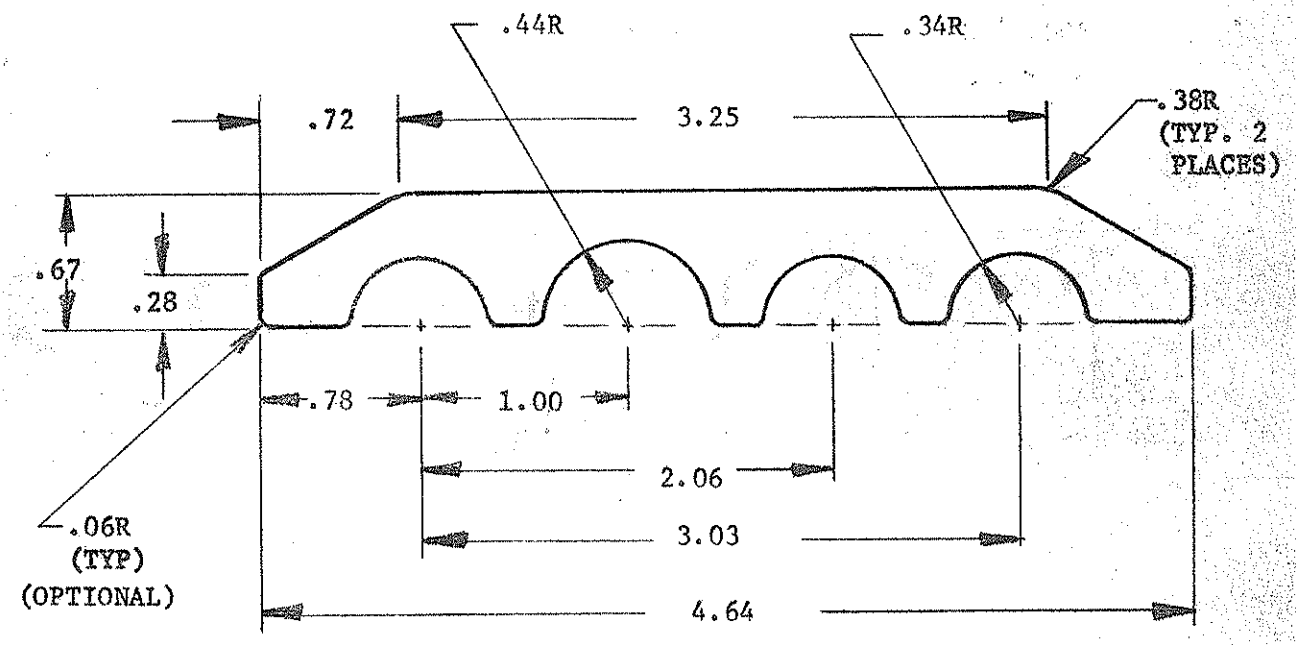
CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
A	RL	11-29-71	EXTENSIVE REVS. TO MEET FINAL PART. Job number 4550

SCOPE This specification identifies the configuration of a particular rubber extrusion.

APPLICATION Especially used to clamp flexible hose.

SKETCH



SPECIFICATION NUMBERS

TOL. ± .06

	MATERIAL (1)	WT LB/FT	EXTRUSION DIE NUMBER		FREIGHTLINER SPECIFICATION NUMBER
	SC515	34.9oz			48-2101

SPECIFICATIONS

(1) Material: Black Neoprene

2. Finish: As Extruded

ns

COMPILED	REL	DATE DRAWN			UNIT OF MEASURE
APPROVED	BRK	5-18-71			INCH

Portland FREIGHTLINER CORPORATION Oregon 97208

A

Materials Specification

PRINT ISSUED	TITLE	PART NO.
7-9-71	TUBING, ABS PLASTIC GRADE GS	48-02103
LAST CHG. LTR. A		SHEET 1 OF 2

SCOPE This specification identifies Grade GS (molding & extrusion grade of maximum toughness with high modulus) acrylonitrile - butadiene - styrene plastic tubing.

APPLICATION For parts requiring maximum toughness with high modulus. (Example: air conditioner drain tube)

SKETCH



SPECIFICATION NUMBERS

NOMINAL O.D. (INCH)	BASIC (INCH)	TOL. ± (INCH)	WALL THICK. (INCH)		FREIGHTLINER SPECIFICATION NUMBER
1/8	.125	.005	.062		48-02103-002
3/16	.1875				-003
1/4	.250				-004
5/16	.3125				-005
3/8	.375				-006
1/2	.500				-008
5/8	.625	.010			-010
3/4	.750				-012
7/8	.875				-014
1	1.000				-016
5/8	.625	.010	.125	(A)	-110

SPECIFICATIONS

(See Sheet 2)

CHG	BY	DATE	WAS

CHG	BY	DATE	Job	WAS
A	MGP	1-21-81	C1500T	Added -110

		DATE DRAWN			UNIT OF MEASURE
COMPILED	HJR	6-22-71			FT.
APPROVED					

ns

Portland FREIGHTLINER CORPORATION A Oregon 97208

Materials Specification

PRINT ISSUED	TITLE	PART NO.
7-9-71	TUBING, ABS PLASTIC GRADE GS	48-02103
LAST CHG. LTR. A		SHEET 2 OF 2

SPECIFICATIONS

Molding & Extrusion Grade GS (max. toughness with high modulus)
GSM Injection & Blow Molding, GSE Extrusion

PROPERTIES (TYPICAL) *	CONDITION	VALUE & UNIT	ASTM TEST METHOD
Color Availability		Unlimited	
Izod Impact 1/8" Bar (2)** Notched	73°F -20°F -40°F	6.7 ft.-lb/in. 2.5 2.0	D-256-56 Method A
Tensile Strength, Type 1 1/8" Thickness (2)	73°F 160°F	6,000 psi 3,200	D-638-64T 0.2"/min.
Tensile Modulus, Type 1 (2)	73°F	3.1 psi x 10^5	D-638-64T
Flexural Yield Strength 1/8" x 1" x 4" Bar (1)	73°F 160°F -40°F	9,700 psi 5,600 15,400	D-790-66 0.05"/min.
Compressive Strength (1)	73°F	7,800 psi	D-695-63T
Compressive Modulus (1)	73°F	2.0 psi x 10^5	D-695-63T
Deformation Under Load (1)	24 Hr. 2000 psi, 122°F	0.60%	D-621-64
Hardness (1)	73°F	Rockwell R 102	D-785-65
Coefficient of Linear Thermal Expansion (1)	x10^5 x10^5	9.3 in/in/°C 5.3 in/in/°F	D-696-44 (Calc.)
Deflection Temperature Unannealed (1)	264 psi 66 psi	190°F at 10 mils 208 deflection	D-648-56
Deflection Temperature Annealed (1)	264 psi 66 psi	214°F at 10 mils 222 deflection	D-648-56
Flammability (1)		1.3 in./min.	D-635-63
Specific Gravity (1)		1.04	D-792-64% Method A
Mold Shrinkage (2)		0.006-.008 in/in.	D-955-51
Falling Dart Impact 0.125 Sheet	73°F -10°F -40°F	19 ft.-lbs. 16 8	
General Chemical Properties			D-543-65

* Reported values pertain only to natural codes, pigmenting may vary the properties.

**ASTM D1130-63
(1) Compression Molded
(2) Injection Molded

CHG	BY	DATE	Job	WAS
A	MGP	1-21-81	C1500T	See Sht. 1

CHG	BY	DATE	WAS

COMPILED	HJR	DATE DRAWN			
APPROVED		6-22-71			

Portland FREIGHTLINER CORPORATION Oregon 97208

Materials Specification

PRINT ISSUED	TITLE	PART NO.
8/13/71	TUBING, PLASTIC	48-02104
LAST CHG. LTR. A		SHEET 1 OF 1

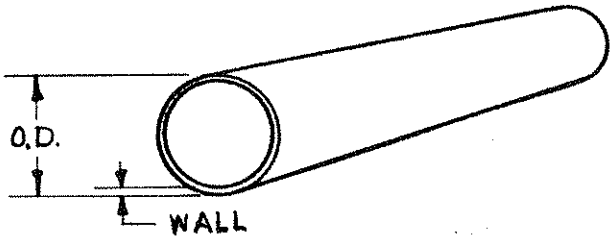
SCOPE

This specification describes seamless solid plastic tubing.

APPLICATION

Sleeve for steering column boot.

SKETCH



SPECIFICATION NUMBERS

NOM. O.D. (IN)	BASIC (IN.)	WALL (IN)	TOL. (IN)	I.D. (REF)		FREIGHTLINER SPECIFICATION NUMBER
2-1/4	2.250	$\frac{.06}{.09}$	±0.010	2.00		48-02104-225

SPECIFICATIONS

1. Material: Styrene (ref., Portco "SD" Sewer & Drain Pipe, Solid)
   Alternate Material: Grade 1, Rigid PVC
   Alternate Material: High Density Polyethylene
2. Color: Black
   Alternate Color: White

COMPILED	HJR	DATE DRAWN			unit of measure
APPROVED		7-27-71			FT.

Portland FREIGHTLINER CORPORATION Oregon 97208

A

E-183

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
A	SW	10/29/80	Added Alt. Matl. J#97454
A1	SW	10/31/80	.125 TO .09 J#97454

48-2105

Materials Specification

PRINT ISSUED	TITLE	PART NO
8/13/71	SCREEN, FIBERGLASS	48-2105
LAST CHG LTR. C		SHEET 1 OF 1

CHG	BY	DATE	WAS
C	HJR	7-3-73	Fiberglass; add -010 J #A0497

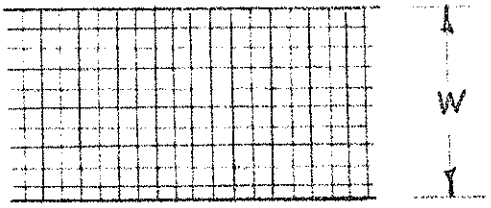
SCOPE

This specification describes woven square mesh fiberglass screen.

APPLICATION

Air stream strainer for cab ventilation, etc.

SKETCH



SPECIFICATION NUMBERS

MESH (PER IN.)	THICKNESS (IN.)	W WIDTH	COLOR	MANUFACTURER'S NUMBER CHZ	MANUFACTURER'S NUMBER ALP	MANUFACTURER'S NUMBER	FREIGHTLINER SPECIFICATION NUMBER
5X5	.013	2 18	GRY GRY	5X5*- .013			48-2105-005 -006
8X8	.013	2	GRY	8X8*- .013			-008
10X10	.013	2	GRY		5935-1 H		-010

*Add color and roll width, W, when ordering.

SPECIFICATIONS

Material: Vinyl Coated Glass Fabric

ENGINEERING NOTES

CHG	BY	DATE	WAS
A	HJR	9-15-72	Add width; Add -008; J #62430
B	HJR	12-18-72	Add -006, Color & Note *; J #60620

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED		7-27-71			FT.

Portland FREIGHTLINER CORPORATION Oregon 97208

48-2106

Materials Specification

PRINT ISSUED	TITLE	PART NO.
8/13/71	CEMENT, ABS PLASTIC	48- 2106
LAST CHG. LTR		SHEET 1 OF 1

WAS

CHG	BY	DATE

SCOPE

This specification describes a high strength plastic pipe cement.

APPLICATION

For joining ABS plastic Types I & II, especially pipe. Also used for securing edges of cut fiberglass mesh, etc.

SPECIFICATION NUMBERS

COLOR	BODY	SETTING TIME		MANUFACTURER'S No.		FREIGHTLINER SPECIFICATION NUMBERS
		TO HANDLE MIN.	FULL SET HR.	IPS		
BLACK	MED.	15	24 hr. @ 60°F up 48 hr. below 60°F	773		48-2106-001

SPECIFICATIONS

1. Must meet ASTM D-2235. For use with ABS Type I & II (ABS 1106, 1210, 2112) per ASTM D-1788, ASTM D-2282, ASTM D-2661, CS 254-63, CS 21859, CS 270-65, FHA UM 49, FED SPEC LP-322a, IAPMO(WPOA) TSC-6-61, PS-17-66, IS-566.

WAS

CHG	BY	DATE

ENGINEERING NOTES

1. This is a flammable mixture to be used with adequate ventilation, away from open flame, and may be harmful if it is swallowed or comes in contact with the skin.

		DATE DRAWN			UNIT OF MEASURE
COMPILED	HJR	7-28-71			GALLON
APPROVED					

Portland FREIGHTLINER CORPORATION Oregon 97208

48-02107

Materials Specification

PRINT ISSUED	TITLE	PART NO.
8/13/71	WELTING VINYL FABRIC	48-2107
LAST CHG LTR: A		SHEET 1 OF 1

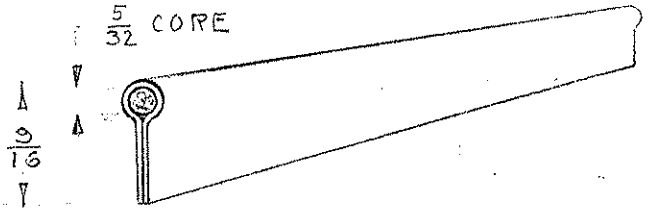
SCOPE

This specification describes a composite welting strip of vinyl coated fabric.

APPLICATION

Seam protection for seat cushions and other cab upholstery.

SKETCH



SPECIFICATION NUMBERS

NOM. SIZE	WIDTH (REF)	COLOR	MANUFACTURER'S NUMBER STH		FREIGHTLINER SPECIFICATION NUMBER
5/32	9/16	BLK	B532-#14		48-2107-001
5/32	9/16	BRN	B532-#12		-002

SPECIFICATIONS

1. **Material: Core, Twisted Kraft Paper**
   Cover, 32 oz. Truck Seat Vinyl Fabric
2. **Construction: Cover cemented over paper core (See Sketch)**
3. Must pass Federal Motor Vehicle Safety Standard No. 302, Flammability of Interior Materials.

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
A	HJR	6-21-72	Add Note 3. Job #30660

A

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED		7-27-71			YARD

Portland FREIGHTLINER CORPORATION Oregon 97208

E-183

48- 2108

Materials Specification

PRINT ISSUED	TITLE	PART NO.
8/20/71	FABRIC, VINYL TRUCK CUSHION	48- 2108
LAST CHG. LTR A		SHEET 1 OF 1

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
A	HJR	6-20-72	Add Note 2, GTR,UNR; Job #30660

SCOPE

This specification describes a textured vinyl coated fabric for automotive uses.

APPLICATION

Cover for truck seat & back cushions, sleeper curtains, and other cab upholstery.

SKETCH



SPECIFICATION NUMBERS

COLOR	DESCRIPTION	MANUFACTURER'S NUMBER STH	GTR	UNR		FREIGHTLINER SPECIFICATION NUMBER
RED		532-# 1				48- 2108-001
DK BLU		-# 2				-002
MET GRN		-# 3				-003
WHT		-# 4				-004
* DK BRN	"DK Maroon"	-# 6				-006
DK GRN		-# 7				-007
* BEIGE	"Oyster"	-# 8				-008
MET BLU		-# 9				-009
*	"Green Black"	-#10				-010
*	"Blu Black"	-#11				-011
BRN		-#12				-012
* GRY	"Slate"	-#13				-013
BLK		-#14	32400 (RT Levant)	SL8841A (MC EMB)		-014

A

* Non-stock, special order item.

SPECIFICATIONS

1. Material: 32 oz. Truck seat vinyl coated fabric (Normally in rolls 59" wide).
2. Must pass Federal Motor Vehicle Safety Standard No. 302, Flammability of Interior Materials.

A

		DATE DRAWN			UNIT OF MEASURE
COMPILED	HJR	7-28-71			YARD
APPROVED					

Portland FREIGHTLINER CORPORATION Oregon 97208

Materials Specification

PRINT ISSUED	TITLE	PART NO.
10/15/71	FABRIC, VINYL LIGHT WEIGHT	48-2109
LAST CHG. LTR. F		SHEET 1 OF 1

CHG	BY	DATE	WAS
D	JE	3-6-78	ADD TF TAN #C1232 TOLTOAK #74030
E	SB	5-1-78	
F	MGP	3-10-80	ADDED TAN C1500T

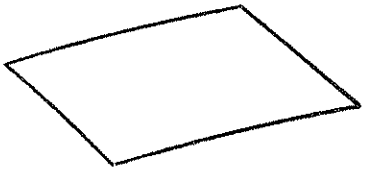
SCOPE

This specification describes lightly textured vinyl coated fabric.

APPLICATION

Bunk curtain lining, etc., and (cut in strips) edge binding.

SKETCH



SPECIFICATION NUMBERS

COLOR	WIDTH W (INCHES)	MANUFACTURER'S NUMBER STH	GTR	UNR		FREIGHTLINER SPECIFICATION NUMBERS
BLK	54	#24-1554	15251	SL-8842A (BD EMB)		48-2109-001
BRN	54	———				-002
BLK	1-1/8	#125				-101
BRN	1-1/8	#112				-102
LT OAK	1-1/8		232			-103
TAN	1-1/8					-104

CHG	BY	DATE	WAS
A	HJR	9-24-71	Add -002, Application.
B	HJR	1-31-72	Add -101,-102 and MFRS No's: J #84920
C	HJR	6-20-72	Add Note 2, GTR, UNR; Job #30660

SPECIFICATIONS

1. Material: 15 oz. vinyl coated fabric (Osnaburg backing)
2. Must pass Federal Motor Vehicle Safety Standard No. 302, Flammability of Interior Materials.

ENGINEERING NOTES

		DATE DRAWN			UNIT OF MEASURE
COMPILED	HJR	7-27-71			YARD
APPROVED	RM				

Portland FREIGHTLINER CORPORATION Oregon 97208

Materials Specification

PRINT ISSUED	TITLE	PART NO.
8/13/71	RETAINING COMPOUND (THREAD LOCK, ETC.)	48- 2110
LAST CHG LTR		SHEET 1 OF 1

WAS

CHG	BY	DATE

SCOPE

This specification describes an anaerobic thread lock compound.

APPLICATION

For stud retention in tapped holes, other thread lock-&-seal situations, including liquid seal of tapped-through holes into reservoirs, etc.

SPECIFICATION NUMBERS

COLOR	TORQUE		VISCOSITY (CP)	OTHER SPECS.	MANUFACTURER'S NUMBER		FREIGHTLINER SPECIFICATION NUMBERS
	BREAK-AWAY	PREVAILING			LOC		
BRN	40	20	125	(1)	HV77		48- 2110-001

WAS

CHG	BY	DATE

SPECIFICATIONS

SEE TABLE	CURE TIME		MAX. CLEARANCE FOR	
	UNPRIMED	PRIMED	SPEC. STRENGTH	SEALING
(1)	2-6 Hr.	15-30 Min.	.003"	.005"

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED	[signature]	7-28-71			FL. OZ.

Portland FREIGHTLINER CORPORATION Oregon 97208

48-02111

Materials Specification

PRINT ISSUED	TITLE	PART NO.
8/20/71	CABLE, TILLER	48-02111
LAST CHG. LTR. B		SHEET 1 OF 1

SCOPE

This specification describes nylon jacketed stranded wire core tiller cable.

APPLICATION

Cab window lift, drain pull, etc.

SKETCH



SPECIFICATION NUMBERS

O.D. NOM.	CORE DIA-STRAND	JACKET	CORE STRENGTH (LBS)	MANUFACTURER'S NUMBER	BWR	FREIGHTLINER SPECIFICATION NUMBER
3/32	1/16-7X7	Nylon	480		(a)	48-02111-003
3/16	1/8 -7X19	Nylon	2000		(b)	-006
1/8	1/16-7X7	Nylon	480		(c)	-004

(a) 1/16 X 7X7 GAC w/7213 Nylon Jacket
(b) 1/8 X 7X19 GAC w/7217 Nylon Jacket
(c) 1/16 x 7X7 GAC w/7213 Nylon Jacket

SPECIFICATIONS

1. Material: Cable: Stranded Galvanized Steel Wire
   Coating: Clear Nylon

2. Temperature Ratings, Nylon Cover: 250°F (121°C) max. continuous; -40°F (-40°C) brittle point.

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED		7-28-71			FT.

Portland FREIGHTLINER CORPORATION Oregon 97208

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
A	HJR	10-24-72	U/M = inch; J #60260
B	LM	7/6/79	Added -004 SAR17574

48-02112

Materials Specification

PRINT ISSUED	TITLE	PART NO.
9-1-71	GASKET INSTANT SEAL PLASTIC	48-02112
LAST CHG. LTR.		SHEET 1 OF 1

SCOPE This specification describes a high strength, high viscosity sealant containing filler for instant seal.

APPLICATION Replaces soft gaskets. Prevents loss of bolt tension. Resists flange shifting.

WAS	DATE	BY	CHG

SPECIFICATION NUMBERS

COLOR	SHEAR STRENGTH PSI	CURE TIME (HR) UNPRIMED	CURE TIME (HR) PRIMED	VIS	MAX. CLEARANCE SPEC STRENGTH	MAX. CLEARANCE SEALING	MFR'S NUMBER LOC	MFR'S NUMBER	FREIGHTLINER SPECIFICATION NUMBER
ORG	2500	24-48	1-2	2500	.003	.020	49		48-02112-000

WAS	DATE	BY	CHG

SPECIFICATIONS

1. Ref. Loctite #49.

ns

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED		8-17-71			FL. OZ.

48-02113

Materials Specification

PRINT ISSUED	TITLE	PART NO.
8/20/71	TUBE WELD	48-02113
LAST CHG LTR		SHEET 1 OF 1

SCOPE This specification describes a high strength, high viscosity cement for bonding and sealing joints in aluminum, steel, and stainless steel.

APPLICATION Bonds and seals sleeve joints on aluminum, steel and stainless steel tubing. Avoids high heat of soldering.

WAS | DATE | BY | CHG

SPECIFICATION NUMBERS

COLOR	SHEAR STRENGTH	MAX. TEMP. F°	VISCOSITY	GAP		MANUFACTURER'S NUMBER			FREIGHTLINER SPECIFICATION NUMBER
						LOC			
GRN	4000	200	2000	.003	.010	#35			48-02113-000

WAS | DATE | BY | CHG

SPECIFICATIONS

1. Ref. Loctite #35

ns

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED		8-9-71			FL. OZ.

Portland FREIGHTLINER CORPORATION Oregon 97208

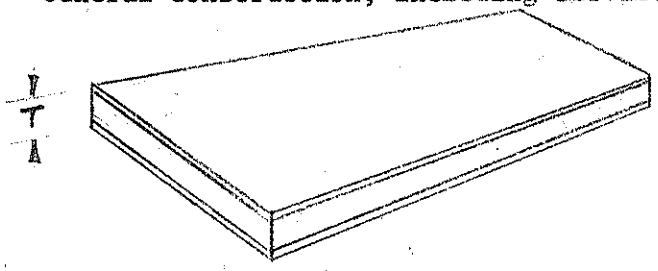
Materials Specification

PRINT ISSUED	TITLE	PART NO.
10/13/71	PLYWOOD EXTERIOR A-C GRADE	48-02114
LAST CHG. LTR.		SHEET 1 OF 1

SCOPE This specification describes exterior grade plywood, strength equivalent to Douglas Fir, fairly good surface but some repaired blemishes and some surface roughness.

APPLICATION General construction, including service in exposed-to-weather loc.

SKETCH



SPECIFICATION NUMBERS

THICKNESS INCHES (NOM.)		FREIGHTLINER SPECIFICATION NUMBERS *
1/4 3/8 1/2 5/8 3/4		48-02114-004 -006 -008 -010 -012

*Dash number is thickness in 1/16 inches.

SPECIFICATIONS

1. Material: Exterior type A-C Group I, plywood.

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS

ns

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED	RWJ	8-18-71			SQ. FT.

48-02116

Materials Specification

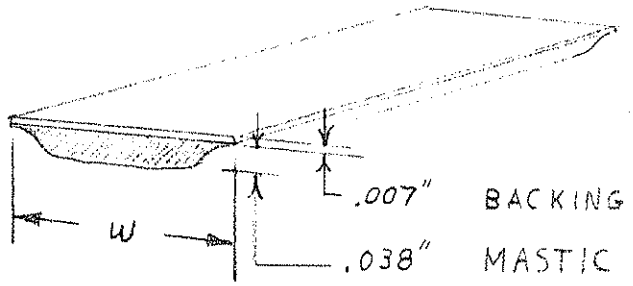
PRINT ISSUED	TITLE	PART NO.
8/13/71	TAPE, ELECTRICAL SEALING COMPOUND	48-02116
LAST CHG LTR		SHEET OF

CHG	BY	DATE	WAS

SCOPE This specification describes a vinyl-backed mastic sealing compound.

APPLICATION For covering and weather-sealing splices in electrical conductors.

SKETCH



SPECIFICATION NUMBERS

THICKNESS (MILS)		WIDTH (INCHES)	MANUFACTURER'S NUMBER			FREIGHTLINER SPECIFICATION NUMBER
VINYL	MASTIC	W	MMM			
7	38	2½	6147			48-02116-000

SPECIFICATIONS

ENGINEERING NOTES

CHG	BY	DATE	WAS

ns

COMPILED	HJR	DATE DRAWN		MATERIAL	UNIT OF MEASURE
APPROVED		8-9-71			YD²

Portland FREIGHTLINER CORPORATION Oregon 97208

E-183

DRAWN	ERK	TITLE	ITEM NUMBER
APPRV	ANF	SHEET - NEOPRENE, REINFORCED DIAPHRAGM STOCK	48-02118
DATE	07/18/91	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1

SCOPE: THIS SPECIFICATION IDENTIFIES FABRIC REINFORCED NEOPRENE RUBBER SHEET COMMONLY REFERRED TO AS DIAPHRAGM STOCK.

APPLICATION: GENERAL USE WITH GOOD OIL RESISTANCE.

SPECIFICATION NUMBERS:

THICKNESS (INCHES)	REINFORCEMENT	FREIGHTLINER SPECIFICATION NUMBER
1/16 1/8 3/16 1/4	COTTON-NYLON	48-02118-006* -012* -019* -025*
3/16	COTTON	-119*
3/16	POLYESTER	-219

*** NOT FOR NEW CONSTRUCTION**

SPECIFICATIONS:

1. MATERIAL: NEOPRENE, 50 - 75 DUROMETER.
2. COLOR: BLACK
3. MINIMUM TENSILE (PSI) FOR RUBBER W/O FABRIC: 1,100
4. CONSTRUCTION: ONE PLY OF FABRIC IN 1/16 INCH THICKNESS.

CHG	JOB/RLSE NO	DATE	BY	REVISION
D	P2240H-02	07/18/91	ERK	REVISED AND REDRAWN

48-02118

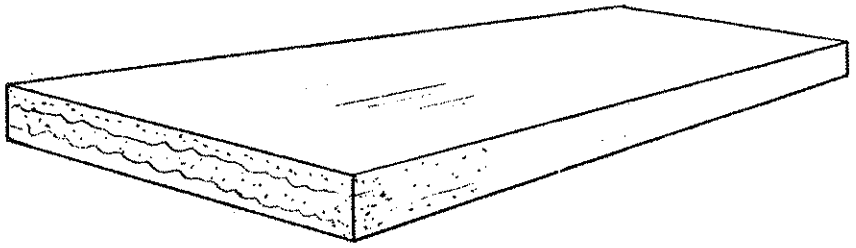
Materials Specification

PRINT ISSUED	TITLE	PART NO.
9-23-71	DIAPHRAGM STOCK, NEOPRENE	48-02118
LAST CHG. LTR. B		SHEET 1 OF 1

SCOPE This specification describes a fiber reinforced neoprene sheet.

APPLICATION General use, but especially constructed for reliable diaphragm strength in flexure.

SKETCH



SPECIFICATION NUMBERS

THICKNESS (INCHES)	REINFORCEMENT	CONSTRUCTION (3)		FREIGHTLINER SPECIFICATION NUMBER *
1/16	Cotton-nylon	A		48-02118-006
1/8		A		-012
3/16		A		-019
1/4		A		-025
9/32	Nylon	B		-023
1/16	Cotton	A		48-02118-106
1/8		A		-112
3/16		A		-119
1/4		A		-125

*Dash number is thickness in 1/100's of an inch.

SPECIFICATIONS

1. Material: Neoprene, 50 - 60 durom.

2. Color: Black

(3) Construction: 1 ply reinforcement per .06 thickness. = A
2 ply reinforcement per .28 thickness. = B (See Table)

4. Finish: Smooth

CHG	BY	DATE	WAS	JOB NO.
B				

CHG	BY	DATE	WAS	JOB NO.
A	DL	1-9-73	Cotton Reinforcement Added	60720
B	HJR	5-25-76	Added -028	D0988

ns

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED	[illegible]	9-2-71			SQ. FT.

Portland FREIGHTLINER CORPORATION Oregon 97208

E-183

48-02119

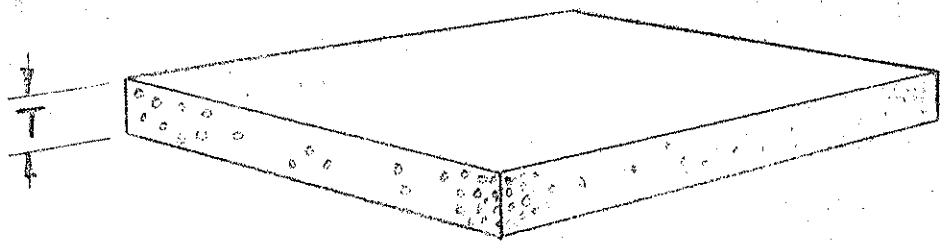
Materials Specification

PRINT ISSUED	TITLE	PART NO.
9-23-71	SHEET, NEOPRENE CLOSED CELL ADHESIVE BACKED	48-02119
LAST CHG. LTR. B		SHEET 1 OF 1

SCOPE This specification describes closed cell expanded neoprene sheet with pressure sensitive backing.

APPLICATION Gaskets, vibration isolating, sealing, etc.

SKETCH



SPECIFICATION NUMBERS

T THICKNESS (INCHES)	PHYSICAL REQUIREMENTS (1)	COMPRESSION DEFLECTION 25% DEFL. (LIMITS) PSI	WATER ABSORPTION MAX. WT. %	FREIGHTLINER SPECIFICATION NUMBER *
1/8	2 S C 41	3-1/2 ± 1-1/2	5	48-02119-012
3/16				-019
1/4				-025
3/8				-038
1/2				-050
3/4				-075
1				-100

*Dash number is thickness in 1/100's of an inch.

SPECIFICATIONS

(1) Material: (See Table) Physical Requirements per SAE J18 for (Sponge &) Expanded Cellular - Rubber Products and pertinent provisions of SAE J200 (= ASTM D2000).

2. Must pass requirements of Federal Motor Vehicle Safety Standard 302, Flammability of Interior Materials.

3. Availability: KKH, GYR, BF, RUB. Order by description.

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
A	HJR	3-20-72	Add -050. J# 20122, 2BC41
B	HJR	4-12-73	Add notes 2 & 3. Add -100; J #A0325

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED		9-2-71			SQ. FT.

Portland FREIGHTLINER CORPORATION Oregon 97208

E-183

Materials Specification

PRINT ISSUED	TITLE	PART NO.
9-22-71	SHEET, NEOPRENE SOLID, 80 DUROM.	48-02120
LAST CHG LTR A		SHEET 1 OF 1

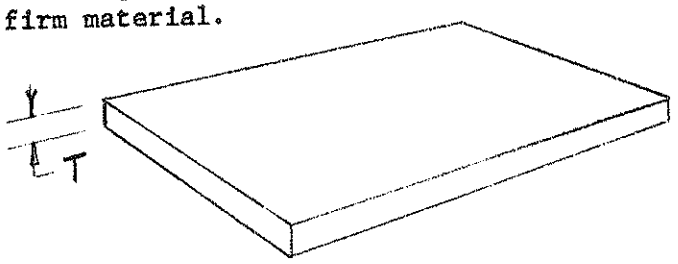
CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
A	HJR	3-6-72	Add -025; J #94000

SCOPE This specification describes solid firm neoprene sheet of moderate heat and ozone resistance.

APPLICATION General use; gaskets, shock relieving pads, etc., requiring quite firm material.

SKETCH



SPECIFICATION NUMBERS

T THICKNESS (INCHES)	COLOR		ASTM - D2000 SAE - J200 (1)	FREIGHTLINER SPECIFICATION NUMBER *
1/8	BLK		2 BC 815 A14 C12	48-02120-012
1/4	BLK			-025

*Dash number equals thickness in 1/100's of an inch.

SPECIFICATIONS

(1.) Material: Neoprene (See Table)

					UNIT OF MEASURE
COMPILED	HJR	DATE DRAWN			SQ. FT.
APPROVED		9-2-71			

ns

Portland FREIGHTLINER CORPORATION Oregon 97208

48-02121

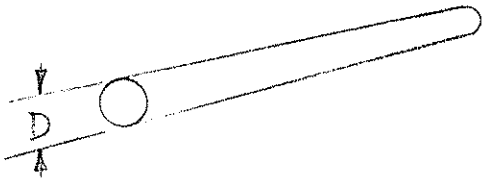
Materials Specification

PRINT ISSUED	TITLE	PART NO.
11/5/71	ROUND, NEOPRENE SOLID	48-02121
LAST CHG. LTR.		SHEET 1 OF 1

SCOPE This specification describes solid round extruded neoprene.

APPLICATION General use.

SKETCH



SPECIFICATION NUMBERS

D DIAMETER (INCHES)		FREIGHTLINER SPECIFICATION NUMBERS
.070		48-02121-007
.090		-009
1/8		-012
3/16		-019
1/4		-025
5/16		-031
3/8		-038
7/16		-044

D DIAMETER (INCHES)		FREIGHTLINER SPECIFICATION NUMBERS
1/2		48-02121-050
9/16		-056
5/8		-062
11/16		-069
3/4		-075
7/8		-088
1		-100

SPECIFICATIONS

1. Material: Neoprene per SAE J200 (= ASTM A2000) 2BC 615.

2. Finish: Smooth

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS

ns

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED		10-22-71			FT.

Portland FREIGHTLINER CORPORATION Oregon 97208

48-02122

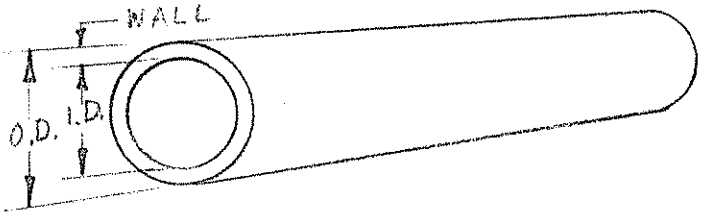
Materials Specification

PRINT ISSUED	TITLE	PART NO.
10/13/71	TUBE, NEOPRENE	48-02122
LAST CHG LTR.		SHEET 1 OF 1

SCOPE This specification describes extruded round seamless neoprene tube.

APPLICATION General use, fluid (low pressure; esp. air) ducting, jacket for wiring, etc.

SKETCH



SPECIFICATION NUMBERS

O.D. (INCHES)	WALL (INCHES)	I.D. (NOM.)		FREIGHTLINER SPECIFICATION NUMBER *
5/16	.065	0.182		48-02122-031
2	.188	1.62		-203
3	.188	2.62		-303
4	.188	3.62		-403
4-1/2	.250	4.00		-454
5	.250	4.50		-504
5-1/2	.250	5.00		-554
6	.250	5.50		-604

*Dash Number = -XXX

- Wall 1/16 Inches
- Tube O.D. in 1/10 inches.

SPECIFICATIONS

1. Material: Neoprene per SAE J200 (=ASTM A2000): 2 BC 615.

WAS	DATE	BY	CHG

WAS	DATE	BY	CHG

ns

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED	Kmm	10-1-71			FT.

Portland FREIGHTLINER CORPORATION Oregon 97208

48-02123

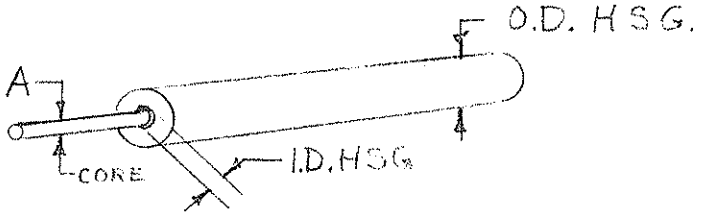
Materials Specification

PRINT ISSUED		TITLE	PART NO.
		CABLE, CONTROL PUSH-PULL, HI TENS. STL	48-02123
LAST CHG. LTR	A		SHEET 1 OF 1

SCOPE This specification describes a high strength hard steel wire in heavy-duty plastic housing.

APPLICATION Push-Pull Heater Control

SKETCH



SPECIFICATION NUMBERS

CORE		HOUSING			FREIGHTLINER SPECIFICATION NUMBER
A DIA (IN.)	TENSILE STRENGTH ksi (MIN.)	O.D. (IN.)	I.D. (IN.)		
16 ga (.0625)	239	.188	.070		48-02123-006

SPECIFICATIONS

1. Material: HSG, Plastic Ref: (MPA/1036)

CORE, Hard drawn steel Ref: (GM Spec 58 M or 188 M or Equiv.)

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
—	—	—	J #85190
A	HJR	3-14-72	F/D Approval: J #85320

ns

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED	Rollins	10-1-71			FT.

Portland FREIGHTLINER CORPORATION Oregon 97208

48-02124

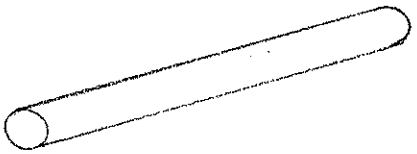
Materials Specification

PRINT ISSUED	TITLE	PART NO.
9/29/71	ROUND BAR CAST IRON	48-02124
LAST CHG. LTR.		SHEET 1 OF 1

SCOPE This specification identifies cast iron round bar.

APPLICATION Mainly used for machined pulleys.

SKETCH



SPECIFICATION NUMBERS

DIAMETER	FREIGHTLINER SPECIFICATION NUMBER*
4-1/2	48-02124-408
4-3/4	-412
5	-500
5-1/4	-504
5-1/2	-508

*Dash Number Indicates Diameter as Follows:

48-02124-X X X

Diameter Inches

Diameter 1/16 Inch

SPECIFICATIONS

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS

ns

COMPILED	RWC	DATE DRAWN			UNIT OF MEASURE
APPROVED		9-20-71			FT.

Portland FREIGHTLINER CORPORATION Oregon 97208

'8-02126

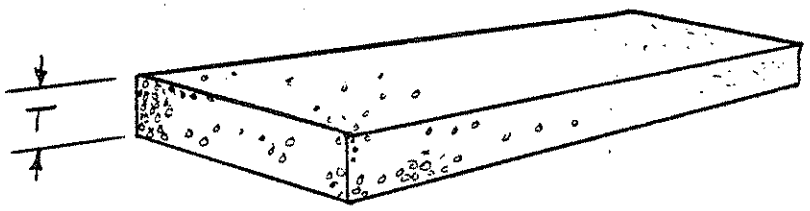
Materials Specification

PRINT ISSUED	TITLE	PART NO.
11/5/71	SHEET, URETHANE FOAM MEDIUM DENSITY	48-02126
LAST CHG. LTR. F		SHEET 1 OF 1

SCOPE This specification describes medium density open cell flexible polyether urethane foam sheet.

APPLICATION General use, insulation, air barrier, etc. Is tough and resilient, does not crumble; has only moderate heat resistance.

SKETCH



SPECIFICATION NUMBERS

T THICKNESS (INCHES)	MANUFACTURER'S NUMBERS GTR	DCO	UPJ		FREIGHTLINER SPECIFICATION NUMBERS *
1/4					48-02126-025
3/8	Order by Description				-038
1/2					-050
3/4					-075
1					-100
1-1/2					-150
2					-200
4					-400

*Dash No. - Thickness in 1/100's inch.

SPECIFICATIONS

1 Material: Polyether Urethane foam, flexible, open cell, medium density. (1.6 #/ft^3 approx.) Self extinguishing per ASTM test method D 1692-59T. Must pass Federal Motor Vehicle Safety Standard No. 302, Flammability of Interior Materials.

(E) Color: [illegible]

CHG	BY	DATE	WAS
D	HJR	8/6/73	Brown, Optional White; I#A0513
E	JK	4-11-77	DEL NOTE 2. 63852
F	DJL	6/27/79	Added -150 E0444

CHG	BY	DATE	WAS
A	HJR	3-6-72	Add -400; J #85290
B	HJR	6-21-72	Add to Note 1; Polyester closed cell; J #30660
C	HJR	4-12-73	Add Mfg nos; J #A0325

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED	[signature]	10-1-71			SQ. FT.

Portland FREIGHTLINER CORPORATION Oregon 97208

ns

E-183

48-02127

Materials Specification

PRINT ISSUED	TITLE	PART NO.
9/29/71	SHEET, COTTON REINFORCED PHENOLIC GRAPHITIZED	48-02127
LAST CHG. LTR.		SHEET 1 OF 1

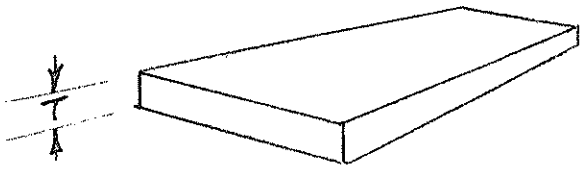
WAS

CHG	BY	DATE

SCOPE This specification describes a cotton fabric based phenolic laminate whose resin contains dispersed graphite.

APPLICATION Tough, low friction, wear and shock resistant gears, wear plates, mounting blocks, guides, etc.

SKETCH



SPECIFICATION NUMBERS

T THICKNESS (INCHES)	GRADE		FREIGHTLINER SPECIFICATION NUMBERS **
3/8	C-YB*		48-02127-038

*Manufacturer's designation.

**Dash number is thickness in hundredths of an inch.

SPECIFICATIONS

1 Material: Graphite bearing phenolic resin bonded laminations of medium weave (4 oz/sq. yd., min.) cotton fabric.

2. Physical Properties (Typical): See Sheet 2

WAS

CHG	BY	DATE

ns

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED		9-21-71			SQ. FT.

Portland FREIGHTLINER CORPORATION Oregon 97208

PRINT ISSUED	TITLE	PART NO.
9/29/71	SHEET, COTTON REINFORCED PHENOLIC GRAPHITIZED	48-02127
LAST CHG LTR		SHEET 2 OF 2

SPECIFICATIONS (Cont'd)

2. Physical Properties (Typical):

Flexural Strength, ksi	Lengthwise 18.0	Crosswise 16.0
Tensile Strength, ksi	Lengthwise 11.0	Crosswise 9.0
Compressive Strength, ksi	Flatwise 38.0	Edgewise 24.0
Modulus of Elasticity in Flexure, ksi	Lengthwise 900.	Crosswise 800.
Modulus of Elasticity in Tension, ksi	Lengthwise 850.	Crosswise 750.
Shear Strength, ksi	11.0	
Bonding Strength, ksi	1.8	
Water Absorption, %	1-2%	
Hardness, Rockwell M-Scale	100	
Spec. Gravity	1.36	
Spec. Vol. $in^3/lb.$	20.4	
Coeff. Therm. Expans, Cm/Cm/C°	2×10^{-5}	
Therm. Conductivity, $Cal/sec/cm^2/C°/cm$	7×10^{-4}	
Deformation & Shrinkage, (Cold flow @ 4000 psi & 50°C) % change	0.7	
Coeff. Friction Plate finish sample against steel	0.20	
Machinability	Excellent	
Relative Wear Resistance	Superior	

WAS	CHG	BY	DATE

WAS	CHG	BY	DATE

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED		9-21-71			SQ. FT.

Engineering Manual

PRINT ISSUED	TITLE	PART NO.
9/29/71	BELTING, TRANSMISSION REINFORCED	48-02129
LAST CHG. LTR.		SHEET 1 OF 1

SCOPE This specification identifies reinforced transmission belting.

APPLICATION General Use.

WAS	DATE	BY	CHG

SPECIFICATION NUMBER

THICKNESS T	PLY	FREIGHTLINER SPECIFICATION NUMBER
1/4	5	48-02129-001

WAS	DATE	BY	CHG

SPECIFICATIONS

ns

COMPILED	RWG	DATE DRAWN			UNIT OF MEASURE
APPROVED		9-20-71			FT.

48-02130

Materials Specification

PRINT ISSUED	TITLE	PART NO.
9/29/71	MASONITE	48-02130
LAST CHG. LTR		SHEET 1 OF 1

SCOPE This specification identifies masonite.

APPLICATION General Use.

CHG	BY	DATE	WAS

SPECIFICATION NUMBERS

THICKNESS	TEMPER	FREIGHTLINER SPECIFICATION NUMBER
1/4	#1	48-02130-001

CHG	BY	DATE	WAS

SPECIFICATIONS

ns

COMPILED	RWG	DATE DRAWN			UNIT OF MEASURE
APPROVED		9-20-71			LB.

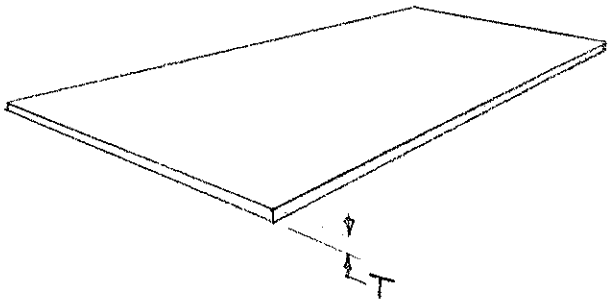
Portland FREIGHTLINER CORPORATION Oregon 97208

Materials Specification

PRINT ISSUED	TITLE	PART NO.
9/29/71	VINYL, MAT, FLOOR	48-02131
LAST CHG LTR. A		SHEET 1 OF 1

SCOPE This specification identifies floor mat vinyl.

APPLICATION Cab floor mats.



SPECIFICATION NUMBERS

THICKNESS T	COLOR	FREIGHTLINER SPECIFICATION NUMBER
1/8	Black	48-02131-001

SPECIFICATIONS

1. Koroseal vinyl, Ezykleen mat
2. Must pass Federal Motor Vehicle Safety Standard No. 302, Flammability of Interior Materials.

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
A	RWR	6-21-72	Add Note 2. JP30660

COMPILED	RWG	DATE DRAWN			UNIT OF MEASURE
APPROVED		9-20-71			SQ. FT.

ns

Portland FREIGHTLINER CORPORATION Oregon 97208

48-02132

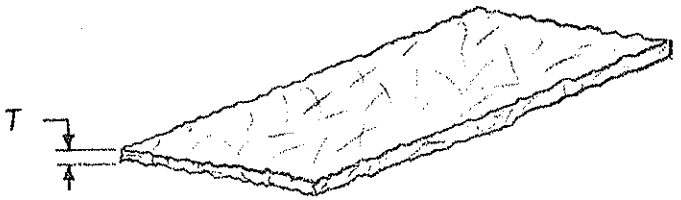
Materials Specification

PRINT ISSUED	TITLE	PART NO.
9/29/71	FIBERGLASS, INSULATION	48-02132
LAST CHG. LTR. A		SHEET 1 OF 1

SCOPE This specification identifies fiberglass commercial grade insulation.

APPLICATION Insulation and sound dampening material.

SKETCH



SPECIFICATION NUMBERS

THICKNESS T (INCHES)	GRADE		FREIGHTLINER SPECIFICATION NUMBER
.045	6 Oz. Commercial		48-02132-000
1.000	- Commercial		-100
2.000	- Commercial		-200

SPECIFICATIONS

WAS	CHG	BY	DATE

WAS	CHG	BY	DATE
Add -100, -200; J #85100	A	HJR	2-17-72

ns

COMPILED	RLR	DATE DRAWN			UNIT OF MEASURE
APPROVED		9-21-71			SQ. FT.

Portland FREIGHTLINER CORPORATION Oregon 97208

48-02133

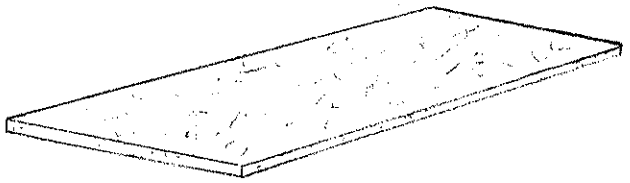
Materials Specification

PRINT ISSUED	TITLE	PART NO.
9/29/71	FIBER, STOCK	48-02133
LAST CHG LTR.		SHEET 1 OF 1

SCOPE This specification identifies fiber stock commonly known within the trade as wet machine board.

APPLICATION Washer material, tacking strips, dash insulators.

SKETCH



SPECIFICATION NUMBERS

THICKNESS T	FREIGHTLINER SPECIFICATION NUMBER
1/8	48-02133-000

SPECIFICATIONS

1. Meets applicable provisions of SAE Information Report J947a and SAE Recommended Practice J315a.

2. Physical Properties: High density, stiffness, and strength.

WAS				
DATE				
BY				
CHG				

WAS				
DATE				
BY				
CHG				

ns

		DATE DRAWN			UNIT OF MEASURE
COMPILED	RLR	9-20-71			LB.
APPROVED					

Portland FREIGHTLINER CORPORATION Oregon 97208

48-02134

Materials Specification

PRINT ISSUED	TITLE	PART NO.
9/29/71	WOOL FELT	48-02134
LAST CHG. LTR.		SHEET 1 OF 1

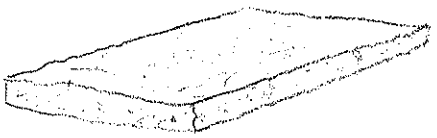
CHG	BY	DATE	WAS

CHG	BY	DATE	WAS

SCOPE This specification identifies wool felt made of reprocessed or reused wool.

APPLICATION Pad, padding, or insulation.

SKETCH



SPECIFICATION NUMBERS

THICKNESS	TRADE DESIGNATION	FREIGHTLINER SPECIFICATION NUMBER
1/8	SAE 13 - 15	48-02134-000
1/4	"Firm Pad"	-001
1/2		-002

SPECIFICATIONS

1. Material: Meets applicable provisions of SAE Standard J314a.

ns

COMPILED	RLR	DATE DRAWN			UNIT OF MEASURE
APPROVED	Ewd	9-20-71			SQ. FT.

Portland FREIGHTLINER CORPORATION Oregon 97208

E-183

DRAWN	DAJ	TITLE	DRAWING NUMBER
APPRV	DAJ	SHEET-ACRYLIC PLEXIGLAS, ACRYLITE, ETC	48-02135
DATE	04/24/98	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1 / CHG. LTR. C
CATIA ORIGINAL			

SCOPE: THIS SPECIFICATION DESCRIBES CAST METHYL METHACRYLATE THEROMPLASTIC SHEET.

APPLICATION: WINDSHIELD VISOR

THICKNESS "T" IN INCHES (NOM)	COLOR	VENDOR/PART NUM		FREIGHTLINER SPEC NUMBER*
		ROM	ACY	
1/8	WHT		020-4	48-02135-112
3/16	GRY	2074-7		48-02135-019
	CLR	**		48-02135-919

** "COLORLESS" --THIS WILL BE OPTICAL GRADE CLEAR MATERIAL

SPECIFICATIONS:

1. MATERIAL: CAST METHYL METHACRYLATE MONOMER, MUST MEET ASTM D783-63.

2. TYPICAL PROPERTIES: (OF CAST SHEET PLEXIGLAS G)

MECHANICAL	TENSILE STRENGTH (psi)	10,500
	ELONGATION (%)	5
	COMPRESSIVE STRENGTH (psi)	18,000
	FLEXURAL STRENGTH (psi)	16,000
	HARDNESS, ROCKWELL: 1/4 in. BALL, 100kg LOAD	M-93
THERMAL	MAXIMUM CONTINUOUS SERVICE TEMP (F)	180-200
	FLAMMABILITY, BURNING RATE (ipm) (SEE NOTE 4)	1.1

3. MUST COMPLY WITH FEDERAL MOTOR VEHICLE SAFETY STANDARD #205 FOR OPTICAL PROPERTIES.

4. MUST PASS FEDERAL MOTOR VEHICLE SAFETY STANDARD #302, FLAMMABILITY OF INTERIOR MATERIALS.

CHG	JOB NO	DATE	BY	REVISION
C	PA2103-M1	04/24/98	DAJ	REVISED AND REDRAWN IN CATIA

48-02136

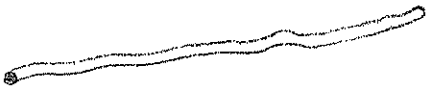
Materials Specification

PRINT ISSUED	TITLE	PART NO.
9/29/71	NYLON CORD, SHOCK	48-02136
LAST CHG LTR.		SHEET 1 OF 1

SCOPE This specification identifies nylon shock cord.

APPLICATION Used as hold down cord for mattresses.

SKETCH



SPECIFICATION NUMBERS

SIZE	MINIMUM TENSILE STRENGTH	ELASTICITY		FREIGHTLINER SPECIFICATION NUMBER
3/16	40 lbs.	100%		48-02136-001

SPECIFICATIONS

1. Material: Nylon

WAS			
CHG	BY	DATE	

WAS			
CHG	BY	DATE	

ns

COMPILED	RLR	DATE DRAWN			UNIT OF MEASURE
APPROVED		9-20-71			FT.

Portland FREIGHTLINER CORPORATION Oregon 97208

48-02137

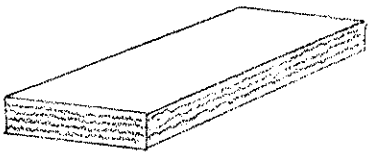
Materials Specification

PRINT ISSUED	TITLE	PART NO.
9/29/71	FABREEKA, CHEMIGUM	48-02137
LAST CHG. LTR		SHEET 1 OF 1

SCOPE This specification identifies Fabreeka Chemigum pre-formed fabric pad.

APPLICATION Rear engine mount pads.

SKETCH



SPECIFICATION NUMBERS

SIZE	MANUFACTURER'S NUMBER FABREEKA PRODUCTS CO.			FREIGHTLINER SPECIFICATION NUMBER
9/32	"Fabreeka"			48-02137-001

SPECIFICATIONS

1. Material: Composed of multiple layers of pre-stressed cotton duck, 81. oz. per square yard, impregnated and bound with a high quality rubber compound, compounded into a resilient pad.

2. Durometer: 87 - 95 Shore "A"

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS

ns

COMPILED	RLR	DATE DRAWN			UNIT OF MEASURE
APPROVED		9-21-71			SQ. FT.

48-02138

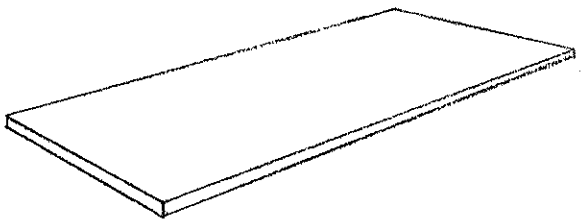
Materials Specification

PRINT ISSUED	TITLE	PART NO.
	SHEET, RUBBER	48-02138
LAST CHG. LTR.		SHEET 1 OF 1

SCOPE This specification identifies solid elastomeric rubber sheet of medium hardness.

APPLICATION Cushions and pads (as for fuel tank mounting, etc.)

SKETCH



SPECIFICATION NUMBERS

THICKNESS (INCHES)	COLOR	DUROM		(1) CLASSIFICATION SAE J200 ASTM D2000	FREIGHTLINER SPECIFICATION NUMBERS
1/8	Black	75/85		2BC815	48-02138-012
1/4					-025

SPECIFICATIONS

(1) Material: Must meet ASTM D735, R805

2. Finish: May have cloth impression.

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
—	—	—	J #84880

ns

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED	Rollins	1-28-72			SQ. FT.

Portland FREIGHTLINER CORPORATION Oregon 97208

48-02139

Materials Specification

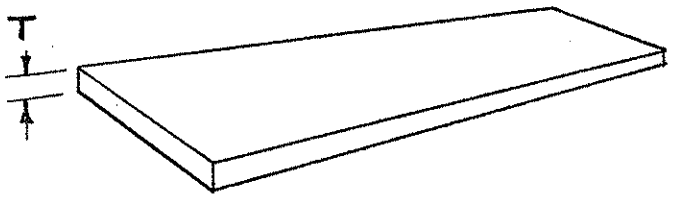
PRINT ISSUED	TITLE	PART NO.
9-23-71	SHEET, NEOPRENE SOLID, 60 DUROM.	48-02139
LAST CHG. LTR. B		SHEET 1 OF 1

CHG	BY	DATE	WAS
A			
B			

SCOPE This specification describes solid neoprene sheet of medium hardness.

APPLICATION General use, gaskets, cushioning pads, etc., requiring moderately firm material.

SKETCH



SPECIFICATION NUMBERS

T THICKNESS (INCHES)	COLOR		ASTM - D2000 SAE - J200 1	FREIGHTLINER SPECIFICATION NUMBERS *
1/32	BLK		2 BC 615	48-02139-003
1/16				-006
1/8				-012
3/16				-018
1/4				-025
3/8				-038
1/2				-050

* Dash number equals thickness in 1/100's of an inch.

SPECIFICATIONS

1. Material: Neoprene (See Table)

CHG	BY	DATE	WAS
A	HJR	6-11-73	Add -003; J #A0444
B	RG	9-5-78	Add - 018 #D0461

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED		9-2-71			SQ. FT.

ns

Portland FREIGHTLINER CORPORATION Oregon 97208

B

48-02140

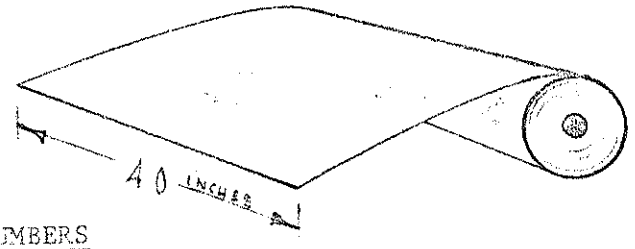
Materials Specification

PRINT ISSUED	TITLE	PART NO.
9-23-71	SHEETING, COTTON	48-02140
LAST CHG LTR. A		SHEET 1 OF 1

SCOPE This specification describes unbleached cotton sheeting.

APPLICATION Used for lining of cab sleeper curtain, etc.

SKETCH



SPECIFICATION NUMBERS

WEIGHT	DESCRIPTION		FREIGHTLINER SPECIFICATION NUMBER
3.15 Yd/Lb.	Cotton Sheeting (1)	-	48-02140-000

SPECIFICATIONS

(1) Material: Unbleached cotton fabric.

A 2. Must pass Federal Motor Vehicle Safety Standard No. 302, Flammability of Interior Materials.

CHG	BY	DATE	
			WAS
			DATE
			BY
			CHG

CHG	BY	DATE	
A	HJR	6-21-72	Add Note 2. ✓ #30360
			WAS
			DATE
			BY
			CHG

					UNIT OF MEASURE
COMPILED	HJR	DATE DRAWN			YD.
APPROVED		9-15-71			

ns

Portland FREIGHTLINER CORPORATION Oregon 97208

E-183

48-02141

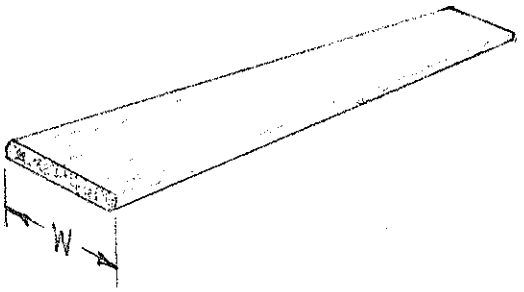
Materials Specification

PRINT ISSUED	TITLE	PART NO.
	WEBBING, COTTON	48-02141
LAST CHG LTR: A		SHEET 1 OF 1

SCOPE This specification describes woven cotton webbing with continuous filling yarns and finished selvages.

APPLICATION Curtain reinforcement.

SKETCH



SPECIFICATION NUMBERS

W	COLOR		FREIGHTLINER SPECIFICATION NUMBER
1-1/4	Nat		48-02141-000
	Blk		-001
1	Nat		-010
	Blk		-011
3/4	Nat		-020
	Blk		-021

SPECIFICATIONS

1. Material: Cotton
2. Must pass Federal Motor Vehicle Safety Standard No. 302, Flammability of Interior Materials.

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
			Job #84570
A	HJR	6-21-72	Add Note 2; J #30360

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED	Rollins	12-30-71			YD.

Portland FREIGHTLINER CORPORATION Oregon 97208

E-183

48-02142

Materials Specification

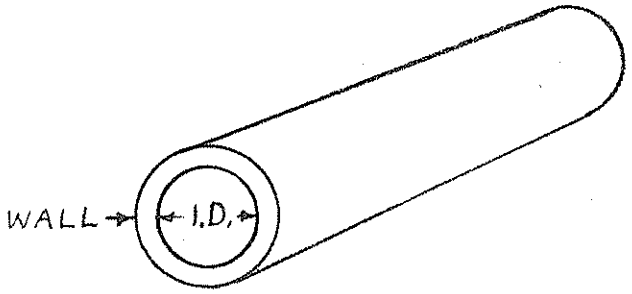
PRINT ISSUED	TITLE	PART NO.
	TUBE, NYLON BUSHING STOCK	48-02142
LAST CHG. LTR.		SHEET 1 OF 1

CHG	BY	DATE	WAS

SCOPE This specification describes nylon tube stock.

APPLICATION Engine trunnion bushings

SKETCH



SPECIFICATION NUMBERS

O.D.	I.D. BASIC	I.D. TOL.	WALL (REF.)		FREIGHTLINER SPECIFICATION NUMBER *
5.25	4.500	$+0$ $-.004$	.375		48-02142-214
5.75	5.000	$\pm.003$	.375		-238

*To complete the part number, add a three-digit dash number composed as follows:

O.D. in 1/4"s — -XX X — Wall in 1/10"s

SPECIFICATIONS

1. Material: Nylon

CHG	BY	DATE	WAS
—	—	—	J #84930

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED	Rollins	2-18-72			FT.

ns

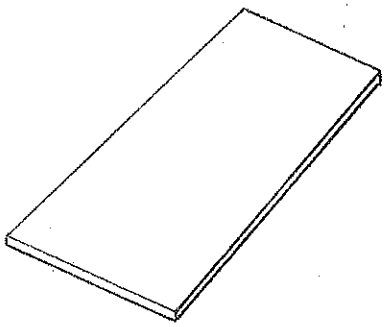
Portland FREIGHTLINER CORPORATION Oregon 97208

PRINT ISSUED	TITLE	PART NO.
	BUSHING STOCK, NYLATRON GS	48-2143
LAST CHG. LTR.		SHEET OF

SCOPE

This specification describes a nylon strip with MoS_2 filler.

SKETCH



SPECIFICATION NUMBER

THICK	WIDE	COLOR	MANUFACTURER'S NUMBER		FREIGHTLINER'S SPECIFICATION NUMBER
			UP		
.060	1.25	Gray			48-2143-000

SPECIFICATIONS

1. Tensile strength: 9,500 - 15,000
2. Modulus of elasticity (73°F): 450,000 - 600,000
3. Hardness (Rockwell): R.110 - 125
4. Flammability: self-extinguishing

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
-	D.L.	3-19-74	J#A0588

COMPILED	D.LeL.	DATE DRAWN		MATERIAL	UNIT OF MEASURE
APPROVED	JmS	3-18-74			FT.

48-02144

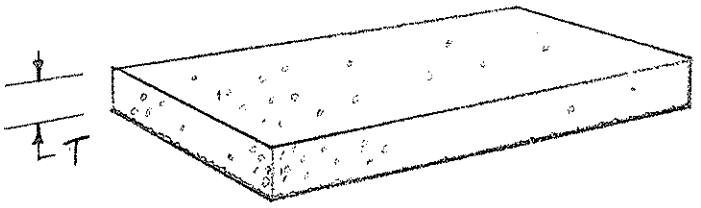
Materials Specification

PRINT ISSUED	TITLE	PART NO.
10/20/71	SHEET, POLYURETHANE FOAM	48-02144
LAST CHG. LTR. C		SHEET 1 OF 1

SCOPE This specification describes open cell polyurethane foam.

APPLICATION Pad for custom quilted tunnel cover, etc.

SKETCH



SPECIFICATION NUMBERS

T THICKNESS (INCHES)		MANUFACTURER'S NUMBERS GTR	DCO	UPJ		FREIGHTLINER SPECIFICATION NUMBER
1/2		Order by Description				48-02144-050

*Dash number is thickness in hundredths of an inch.

SPECIFICATIONS

1. Material: Foam: Polyurethane open cell, firm.
   Reinforcement: None
2. Must pass Federal Motor Vehicle Safety Standard No. 302, Flammability of Interior Materials..

ENGINEERING NOTES

1. Foam density = 1.3 lb./cu. ft.

CHG	BY	DATE	WAS

B

CHG	BY	DATE	WAS
A	HJR	6-21-72	Add Note 2; J#30660
B	HJR	4-12-73	Add Mfg nos; J #A0325
C	DL	1-4-74	Closed Cotton Fabric J #A0563

A

ns

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED	[signature]	10-5-71			SQ. FT.

Portland FREIGHTLINER CORPORATION Oregon 97208

E-183

48-2145

MATERIALS SPECIFICATION

PRINT ISSUED	TITLE	PART NO.
	GASKET, CORK/RUBBER	48-2145
LAST CHG LTR A		SHEET 1 OF 1

CHG	BY	DATE	WAS

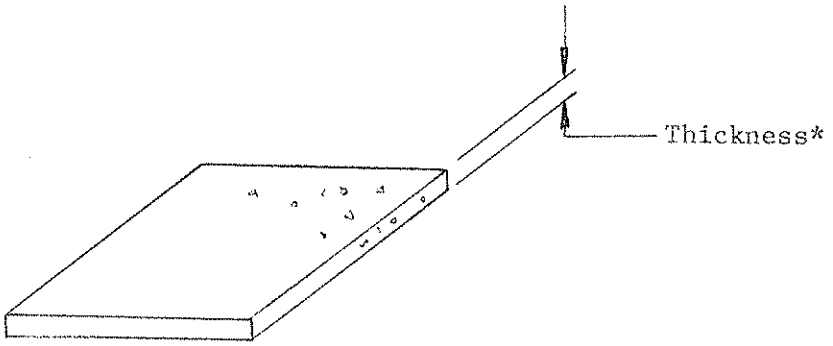
SCOPE

This specification describes a compounded sheet consisting of cork, & oil-resistant synthetic rubber.

APPLICATION

Gasket applications requiring high resilience & low compression set.

SKETCH



SPECIFICATION NUMBERS

Minimum Sealing Stress	Compressibility	Manufacturer's Numbers ASK		Freightliner Specification Numbers*
400 PSI	35-50 % @ 400 PSI	DC-179		48-2145-060

*Dash number equals thickness in 1/100's of an inch. Example: 48-2145-060 is 1/16 of an inch thick.

SPECIFICATIONS

1. Material: cork, & oil-resistant synthetic rubber.

2. Temperature: -20°F to +250°F.

CHG	BY	DATE	WAS
—	D. LeL.	3-5-74	J#A0576
A	HJR	4-8-74	Add date & unit of measure; J#A0601

COMPILED	D. LeL.	DATE DRAWN			UNIT OF MEASURE
APPROVED	[signature]	3-5-74			SQ. FT.

48-02148

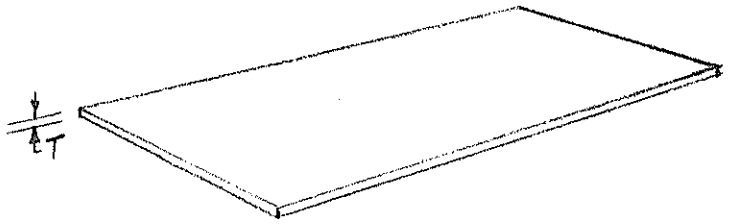
Materials Specification

PRINT ISSUED		TITLE	PART NO.
		SHEET, GASKET NON-METALLIC	48-02148
LAST CHG. LTR	A		SHEET 1 OF 1

SCOPE This specification describes a non-metallic gasket material (vellumoid). (SAE J90b [redacted]

APPLICATION Oil & grease sealing at flange interfaces.

SKETCH



SPECIFICATION NUMBERS

THICKNESS NOM.	THICKNESS ACTUAL	MATERIAL PER SAE J90 (1)	MANUFACTURER'S NUMBER FDM	MANUFACTURER'S NUMBER	FREIGHTLINER SPECIFICATION NUMBER *
.010	.010 - .013	Type 3	444-.010		48-02148-010
1/64	.013 - .017		-1/64		-015
.020	.019 - .023		-.020		-020
1/32	.027 - .035		-1/32		-030
3/64	.043 - .050		3/64		-045
1/16	.057 - .067		-1/16		-060
3/32	.085 - .103		-3/32		-090
1/8	.114 - .136		-1/8		-120
.010	.010 - .013	Type 1	250-.010		-310
1/64	.013 - .017		-1/64		-315
.020	[redacted]		[redacted]		-320
1/32	.027 - .035		-1/32		-330
3/64	[redacted] .050		3/64		-345
[redacted]	[redacted] .067		-1/16		-360
[redacted]	.114 - .136		-1/8		-390 -420

SPECIFICATIONS

(1) Material: Non-metallic automotive gasket material (vellumoid) per SAE J90.

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
—	—	—	J# 84480
A	EJR	3-1-72	Add -310 Thru -420; J# 85380

ns

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED	Rollins	12-30-71			SQ. FT.

Portland FREIGHTLINER CORPORATION Oregon 97208

48-02149

Materials Specification

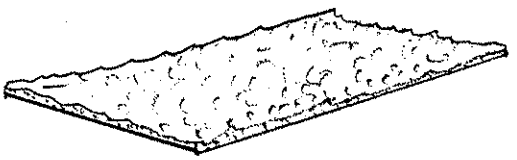
PRINT ISSUED		TITLE	PART NO.
		CARPET, DELUXE CUSTOM	48-02149
LAST CHG. LTR.	E		SHEET 1 OF 1

CHG	BY	DATE	WAS
C	HD	2-22-78	ADD -16 & 17; RFD #C1231
D	SK	3-17-78	REV'D COLORS & RFD #65854
E	CDN	1-30-80	Add DOS column-new MFR #66603

SCOPE This specification describes deluxe custom type carpet.

APPLICATION Cab floor covering, etc.

SKETCH



SPECIFICATION NUMBERS

COLOR	DOS	MANUFACTURER'S DESIGNATION		FREIGHTLINER SPECIFICATION NUMBERS	
		RFD	BWK		
Black	201	133-X9		48-02149-001	©
Blue	302	-BC78		-002	
Turquois			808	-008	
Moss Green	209	-GC78		-009	
Chestnut	210	-CC78		-010	
Gold	213		813	-013	
Crimson		-E8		-015	
Red	316	-RC78		-016	©
Tan		-TC78		-017	

CHG	BY	DATE	WAS
—	—	—	J #85350
A	HJR	6-27-72	Delete MOZ, Add BWK & Note 2; J #30660
B	HJR	11-15-72	Add -010; J #60400

SPECIFICATIONS

1. Material: Deluxe Nylon Type, Per Manufacturer

2. Must pass requirements of Federal Motor Vehicle Safety Standard No. 302, Flammability of Interior Materials.

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED	Rollins	4-13-72			SQ. YD.

Portland FREIGHTLINER CORPORATION Oregon 97208

ns

E-183

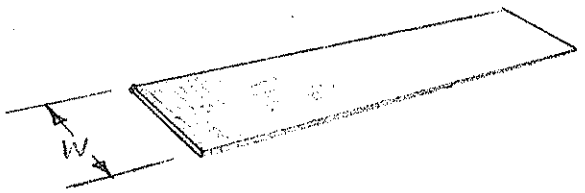
Materials Specification

PRINT ISSUED	TITLE	PART NO.
11/5/71	WEBBING, NYLON	48-02150
LAST CHG. LTR. A		SHEET 1 OF 1

SCOPE This specification describes a narrow fabric woven with continuous filling yarns and finished selvages.

APPLICATION Straps for bunk occupant restraint as incorporated in the bunk curtain assembly.

SKETCH



SPECIFICATION NUMBERS

W WIDTH INCHES	COLOR	MINIMUM BREAKING STRENGTH (LB.)		FREIGHTLINER SPECIFICATION NUMBER
2	BLK	6000 (a)		48-02150-000

(a) As determined by method of FMVSS #209; tensile strength of the belt is thus approximately 3000 lb. (min.).

SPECIFICATIONS

1. Material: Nylon webbing, tight woven.
2. Must meet applicable provisions of FMVSS #209, Seat Belt Assemblies.
3. Must pass Federal Motor Vehicle Safety Standard No. 302 Flammability of Interior Materials.

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
A	HJR	6-21-72	Add Note 3; J#30660

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED		10-21-71			FT.

Portland FREIGHTLINER CORPORATION Oregon 97208

ns

48-02151

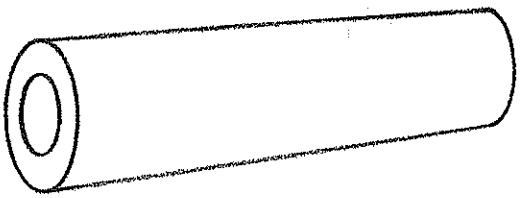
Materials Specification

PRINT ISSUED		TITLE	PART NO.
		BUSHING STOCK, NYLON	48-02151
LAST CHG. LTR.	A		SHEET 1 OF 1

SCOPE This specification describes nylon bushing stock tubing with MoS_2 filler.

APPLICATION Bushing stock.

SKETCH



SPECIFICATION NUMBERS

O.D.	I.D.	COLOR	MANUFACTURER'S NUMBER PYM		FREIGHTLINER SPECIFICATION NUMBER
1/2 O.D.	x 3/8 I.D.	Black	(a)		48-02151-000
A 3/4 O.D. ± .001	x .605 / .613	Black	(a)		-002

(a) Nylatron GS Black Bushing Stock

SPECIFICATIONS

CHG	BY	DATE	WAS
A			

CHG	BY	DATE	WAS
A	HJR	1-25-72	Add -002; J #84710

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED	Rollins	12-7-71			FT.

ns

Portland FREIGHTLINER CORPORATION Oregon 97208

H

E-183

48-02153 , B , VINYL PADDING, EMBOSSE

DRAWN	CGD	TITLE VINYL PADDING, EMBOSSED HEEL PAD	DRAWING NUMBER 48-02153
APPRV	DAJ		
DATE	09/03/99	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1 / CHG. LTR. B
CATIA ORIGINAL			

SCOPE: THIS SPECIFICATION IDENTIFIES VINYL PAD MATERIAL FOR WEAR RESISTANCE AND ADHESION COMPATIBLE TO CARPET PILE.

APPLICATION: USED AS SCUFF RESISTANT AREAS (HEEL PAD) IN CONJUNCTION WITH CARPETING.

THICKNESS	WIDTH	COLOR	FINISH	MANUFACTURER MCL	FREIGHTLINER PART NUMBER
1/16	18"	BLACK	EMBOSSED ONE SIDE	-	48-02153-001
1/8	-	GALAXY BLUE		-	48-02153-002
		MYSTIC GRAY		-	48-02153-003
		RED STARLIGHT		-	48-02153-004

ENGINEERING NOTES:

1. MATERIAL: POLYVINYL CHLORIDE POLYMER
2. MUST PASS REQUIREMENTS OF FEDERAL MOTOR VEHICLE SAFETY STANDARD NO. 302, FLAMMABILITY OF INTERIOR MATERIALS.
3. PHYSICAL PROPERTIES:

TENSILE STRENGTH:	(ASTM D412,DIE C)	10.3 kPa MIN.
ELONGATION:	(ASTM D412, DIE C)	250% MIN.
HARDNESS, SHORE A	(ASTM D2240)	80 ±5 PTS.
TEAR RESISTANCE	(ASTM D624, DIE C)	1.7 kPa MIN.

CHG	JOB NO	DATE	BY	REVISION
B	P04977-13	09/03/99	CGD	REVISED AND REDRAWN IN CATIA

48-02153

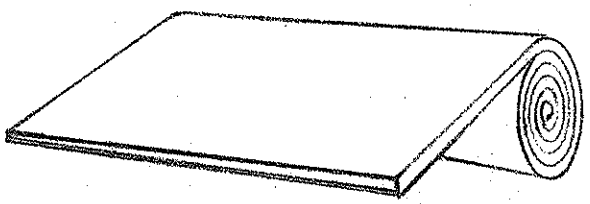
Materials Specification

PRINT ISSUED	TITLE	PART NO.
	VINYL PADDING, BLACK EMBOSSED	48-02153
LAST CHG. LTR. A		SHEET 1 OF 1

SCOPE This specification identifies vinyl pad material.

APPLICATION Used as scuff resistant areas (heel pad) in conjunction with carpeting.

SKETCH



SPECIFICATION NUMBERS

THICKNESS	WIDTH	COLOR	FINISH	MANUFACTURER MCL		FREIGHTLINER SPECIFICATION NUMBER
1/16	18"	Black	Embossed One Side			48-02153-001

SPECIFICATIONS

1. Material: Sheet Vinyl
2. Must pass requirements of Federal Motor Vehicle Safety Standard No. 302, Flammability of Interior Materials

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
A	DL	3-22-73	Added Notes 1 & 2; J #A0186

COMPILED	RLR	DATE DRAWN			UNIT OF MEASURE
APPROVED	Robins	12-7-71			FT.

ns

Portland FREIGHTLINER CORPORATION Oregon 97208

Materials Specification

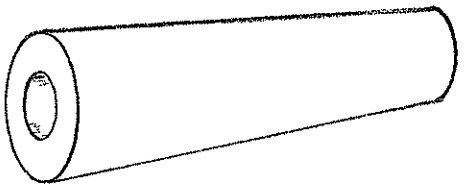
PRINT ISSUED	TITLE	PART NO.
	BUSHING STOCK, ESTANE	48-02154
LAST CHG. LTR.		SHEET 1 OF 1

WAS | DATE | BY | CHG

SCOPE This specification describes estane bushing stock.

APPLICATION Heavy duty shock & wear resistant, low friction bushing, as for cab tilt power pivots, etc.

SKETCH



SPECIFICATION NUMBERS

O.D.	I.D.	MANUFACTURER'S NUMBER BF			FREIGHTLINER SPECIFICATION NUMBER
1.00	.625	58101			48-02154-001

WAS | DATE | BY | CHG

SPECIFICATIONS

1. Material: Estane, Durom 86-90.

					UNIT OF MEASURE
COMPILED	HJR	DATE DRAWN			FT.
APPROVED	Rollins	12-7-71			

ns

Portland FREIGHTLINER CORPORATION Oregon 97208

48-02155

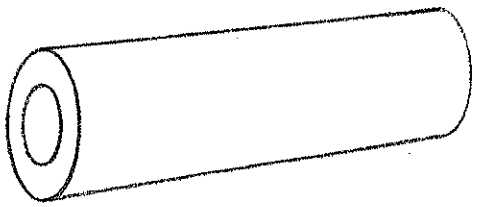
Materials Specification

PRINT ISSUED		TITLE	PART NO.
		BUSHING STOCK, URETHANE RUBBER	48-02155
LAST CHG. LTR.			SHEET 1 OF 1

SCOPE This specification describes urethane rubber bushing stock.

APPLICATION Heavy duty shock and wear resistant, low friction bushings, as for cab tilt power pivots, etc.

SKETCH



SPECIFICATION NUMBERS

O.D.	I.D.	WALL (REF.)		FREIGHTLINER SPECIFICATION NUMBER
1.00	.625	.188		48-02155-001

SPECIFICATIONS

1. Material: Urethane rubber (Dupont (DUP) Adiprene Type L-100) Durom 86-90.

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
-	-	-	Job No. 84090

ns

		DATE DRAWN			UNIT OF MEASURE
COMPILED	HJR	12-7-71			FT.
APPROVED	Rollins				

Portland FREIGHTLINER CORPORATION Oregon 97208

48-2156

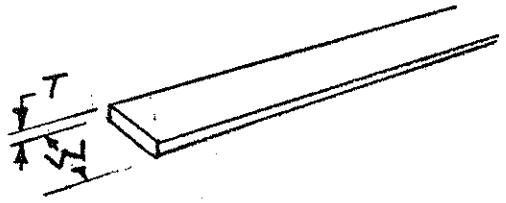
Materials Specification

PRINT ISSUED		TITLE	PART NO.
		TAPE, BUTYL RUBBER SELF-ADHESIVE	48-02156
LAST CHG. LTR.	B		SHEET 1 OF 1

SCOPE This specification describes self-adhesive butyl rubber stock in strip form.

APPLICATION Sealing between sheet metal surfaces.

SKETCH



SPECIFICATION NUMBERS

T	W	DESCRIPTION (1)	MANUFACTURER'S NUMBER BM		FREIGHTLINER SPECIFICATION NUMBERS *
1/8	1/2	1/8 2512 20 EOT, BM ½, EC 1202 Butyl Rubber	2512-20EOT		48-02156-404
3/16	3/4				48-02156-606

*Thickness in 1/32's —404— Width in 1/8th's

SPECIFICATIONS

(1) Material: See table above.

2. CAUTION: Not for use in cab interior - does not meet Federal Motor Vehicle Safety Standard 302, Flammability of Interior Materials.

CHG	BY	DATE	WAS
A			

CHG	BY	DATE	WAS
—	—	—	Job No. 64150
A	HJR	8-24-72	Add MFR "BM" Specs; J #85930
B	DB	12-10-79	J #1493 Add -606

ns

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED	Rollins	12-31-71			FT.

Portland FREIGHTLINER CORPORATION Oregon 97208

E-183

B

48-02157

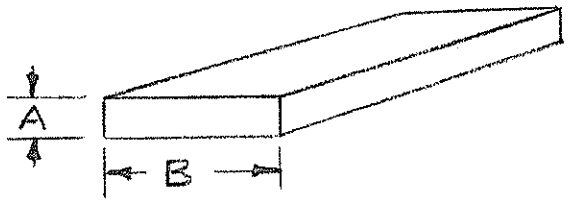
Materials Specification

PRINT ISSUED	TITLE	PART NO.
	STRIP, WOOD FIR	48-02157
LAST CHG. LTR.		SHEET 1 OF 1

SCOPE This specification describes fir wood strips, essentially clear of knots.

APPLICATION Cab upholstery fastening.

SKETCH



SPECIFICATION NUMBERS

A (INCHES)	B (INCHES)		FREIGHTLINER SPECIFICATION NUMBERS *
1.00	2.00		48-02157-808

* Dash Number = Thickness in 1/8's -808 Width in 1/4's

SPECIFICATIONS

1. Material: Coast fir, #2 Grade or better.

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
—	—	—	Job No. 84130

ns

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED	R.Ellins	12-30-71			FT.

Portland FREIGHTLINER CORPORATION Oregon 97208

48-02158

Materials Specification

PRINT ISSUED		TITLE	PART NO.
		BUSHING STOCK, PHENOLIC LAMINATE, GRAPHITE IMPREGNATED	48-02158
LAST CHG. LTR			SHEET / OF /

SCOPE This specification identifies phenolic laminate bushing stock containing dispersed graphite.

APPLICATION Typical application - front spring pin bushings.

SKETCH



SPECIFICATION NUMBERS

O.D. INCHES	I.D. INCHES	TOLERANCES O.D.	TOLERANCES I.D.		FREIGHTLINER SPECIFICATION NUMBERS
1.509	1.275	±.005	±.004		48-02158-150
1.630	1.275	±.001	±.004		-163

SPECIFICATIONS

1. Material: Graphite bearing phenolic resin laminations.
2. Must meet provisions of government specification MIL-P-5431.

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
—	—	—	Job No. 84120

ns

		DATE DRAWN			UNIT OF MEASURE
COMPILED	RLR	12-31-71			FT.
APPROVED	Rollins				

Portland FREIGHTLINER CORPORATION Oregon 97208

Materials Specification

PRINT ISSUED	TITLE	PART NO.
	TUBE, CLOSED CELL FLEXIBLE INSULATION	48-02159
LAST CHG. LTR.		SHEET 1 OF 1

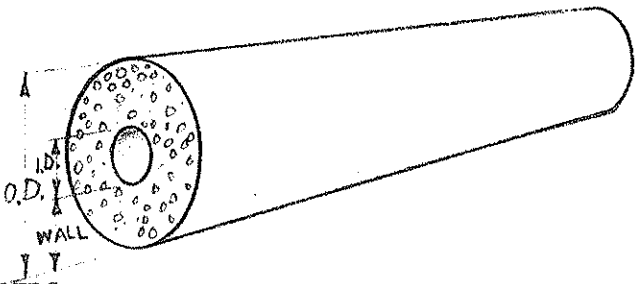
CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
			Job No. 84870

SCOPE This specification describes an expanded closed cell, elastomeric rubber tubing.

APPLICATION Thermal insulation of system piping that does not exceed 200°F.

SKETCH



SPECIFICATION NUMBERS

I.D.	WALL	O.D. (REF.)	FREIGHTLINER SPECIFICATION NUMBERS
3/8	1/2	1-3/8	48-02159-034
1/2		1-1/2	-044
5/8		1-5/8	-054
3/4		1-3/4	-064
7/8		1-7/8	-074
1		2	-084
1-1/8		2-1/8	-094
1-1/4		2-1/4	-104
1-3/8		2-3/8	-114
1-1/2		2-1/2	-124
1-5/8		2-5/8	-134
1-3/4		2-3/4	-144
1-7/8		2-7/8	-154
2		3	-164
2-1/8		3-1/8	-174

I.D.	WALL	O.D. (REF.)	FREIGHTLINER SPECIFICATION NUMBERS *
2-1/4	1/2	3-1/4	48-02159-184
2-3/8		3-3/8	-194
2-1/2		3-1/2	-204
2-5/8		3-5/8	-214
2-3/4		3-3/4	-224
2-7/8		3-7/8	-234
3		4	-244
3-1/4		4-1/4	-264
3-1/2		4-1/2	-284
3-3/4		4-3/4	-304
4		5	-324
4-1/4		5-1/4	-344
4-1/2		5-1/2	-364

*Dash number: 1st two digits = I.D. in 1/8's; last digit = wall thickness in 1/8's

SPECIFICATIONS

1. Material: Expanded closed cell elastomeric rubber. (Ref. #731 Presst-O-Cel Flexible Insulation Tubing.)
2. Meets U. S. specs GSAS #HH1-00573 and Navy Spec MIL-P-15280D (Ships).
3. Typical Characteristics:
   - Composition: An expanded, closed cell, elastomeric rubber.
   - Color: Black
   - Density: Approx. 6 to 6.5 lbs per cu.ft.
   - Insulation Value (K Factor): .23 to .24 at 75°F., per ASTM C177-45.
   - Average Water Absorption: .005 by volume.
   - Flammability: Self-extinguishing per ASTM D635-44.
   - Paintability: May be painted with most standard paints.
   - Great Resistance to: Oil, acid, alkali, most solvents, water & water vapor, rodents, vermin & fungus, freeze-thaw cycling.

		DATE DRAWN			UNIT OF MEASURE
COMPILED	HJR	1-28-72			FT.
APPROVED	Rollins				

Portland FREIGHTLINER CORPORATION Oregon 97208

ns

E-183

48-02160

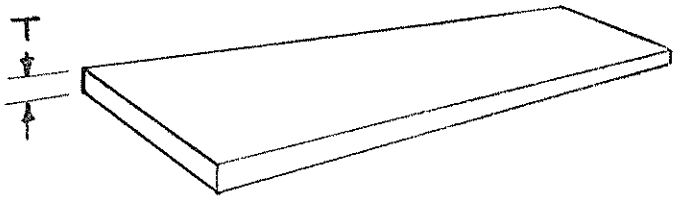
Materials Specification

PRINT ISSUED	TITLE	PART NO.
	SHEET, NEOPRENE SOLID, 50 DUROM.	48-02160
LAST CHG. LTR.		SHEET 1 OF 1

SCOPE This specification describes solid neoprene sheet of medium hardness.

APPLICATION General use, gaskets, cushioning pads, etc., requiring moderately firm material.

SKETCH



SPECIFICATION NUMBERS

T THICKNESS (INCHES)	COLOR		ASTM - D2000 SAE - J200 1	FREIGHTLINER SPECIFICATION NUMBERS*
1/16	BLK		2 BC 515	48-02160-006
1/8				-012
1/4				-025
3/8				-038
1/2				-050

*Dash number equals thickness in 1/100's of an inch.

SPECIFICATIONS

1. Material: Neoprene (See Table.

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
—	—	—	Job No. 84280

ns

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED	Rollins	1-12-72			SQ. FT.

Portland FREIGHTLINER CORPORATION Oregon 97208

E-183

48-02161

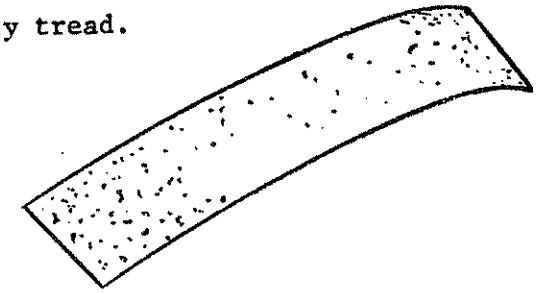
Materials Specification

PRINT ISSUED		TITLE	PART NO.
		STRIP, ABRASIVE "SAFETY WALK"	48-02161
LAST CHG. LTR.	C		SHEET 1 OF 1

SCOPE This specification describes self-adhesive cloth-backed abrasive sheet.

APPLICATION Safety tread.

SKETCH



SPECIFICATION NUMBERS

W (IN.)	COLOR	MANUFACTURER'S NUMBER MMM		FREIGHTLINER SPECIFICATION NUMBERS
		"Safety Walk" Type"B" *		48-02161-[illegible]
4.00	BLK			-004
.75	BLK			-075
1.00	BLK			-001
2.00	BLK			-002
6.00	BLK			-006
12.00	BLK			-012
18.00	BLK			-018

SPECIFICATIONS

1. MATERIAL: Self-adhesive, cloth-backed abrasive sheet per manufacturer's specifications (see table).

* SPECIFY SHEET OR ROLL SIZE REQUIRED.

CHG	BY	DATE	WAS
C2	DAW	4-26-82	DELETED -000
			JOB NO 24198
C1	DAW	4-26-82	ADD -001,-002,-006,-012,-018
B	LD	7-31-81	Add -075 C1765
a	HJR	7-25-74	Add -004; J#A0657
—	—	—	Job #84750
			JOB NO 24198

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED	Rollins	1-26-72			SQ. FT.

Portland FREIGHTLINER CORPORATION Oregon 97208

ns

E-183

C B A

48-02162

Materials Specification

PRINT ISSUED	TITLE	PART NO.
	FOAM, POLYVINYL CHLORIDE CLOSED CELL, (2-5 LB/FT^3)	48-2162
LAST CHG. LTR. A		SHEET 1 OF 1

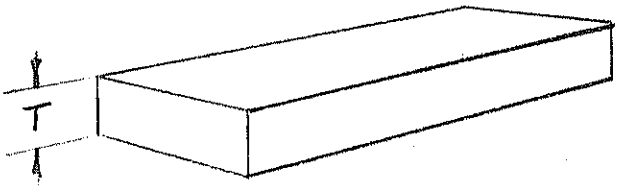
CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
—	—	—	Job #30660 Gr. VE-41; J #60030
A	HJR	11-3-72	

SCOPE This specification describes a closed-cell, polyvinyl chloride foam.

APPLICATION Cushion, air seal, etc.

SKETCH



SPECIFICATION NUMBERS

T THICKNESS	FREIGHTLINER SPECIFICATION NUMBERS *
1/4	48-02162-025
3/8	-038
1/2	-050
3/4	-075
1	-100
1-1/2	-150
2	-200
2-1/2	-250
3	-300
3-1/2	-350
4	-400

*Dash number equals thickness in 1/100's of an inch.

SPECIFICATIONS

1. Material: Polyvinyl Chloride, closed cell foam, to meet ASTM D1667-64. Grade VS-429 FS; Density 1 to 2.5 lb/ft^3. Must pass Federal Motor Vehicle Safety Std. 302, Flammability of Interior Materials.
2. Surface: Cut face or molded, optional with manufacturer.
3. Physical Properties: Temperature resistance 0°-125°, 212° intermittently. Height Loss 15% when compressed 25% for 22 hours. Maximum Water Absorption 6% by weight.

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED	Rollins	6-20-72			SQ. FT.

ns

Portland FREIGHTLINER CORPORATION Oregon 97208

E-183

48-02163

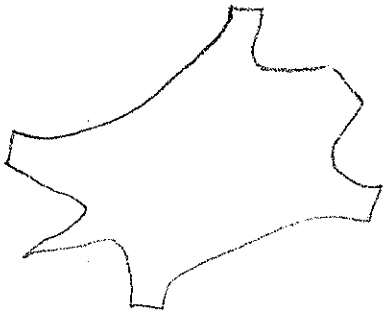
Materials Specification

PRINT ISSUED	TITLE	PART NO.
	COW HIDE, TOP GRAIN	48-02163
LAST CHG. LTR.		SHEET 1 OF 1

SCOPE This specification describes top-grain cow hide.

APPLICATION For driver seat upholstery, etc.

SKETCH



SPECIFICATION NUMBERS

COLOR		FREIGHTLINER SPECIFICATION NUMBERS
BLK		48-02163-000

SPECIFICATIONS

1. Material: Top grain cow hide (with hair).

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
—	—	—	J #85240

ns

		DATE DRAWN			UNIT OF MEASURE
COMPILED	HJR	3-1-72			SQ. FT.
APPROVED	Rollins				

Portland FREIGHTLINER CORPORATION Oregon 97208

48-2164

Materials Specification

PRINT ISSUED	TITLE	PART NO.
	ADDITIVE, LUBRICANT	48-2164
LAST CHG. LTR.		SHEET 1 OF 1

SCOPE: This specification describes an additive for augmenting extreme pressure lubricity of gear lubricant.

APPLICATION: Conditioner for lubricant in axles with traction equalizer.

SPECIFICATION NUMBERS

	MANUFACTURER'S NUMBER		FREIGHTLINER SPECIFICATION NUMBERS
	ELCO		
	#2		48-2164-000

SPECIFICATIONS

1. Material: A proprietary lubricating additive.

ENGINEERING NOTES

1. This is a corrosive fluid and must not come into contact with the person.

		DATE DRAWN			UNIT OF MEASURE
COMPILED	H.J.R.	3-15-72			PT.
APPROVED	CHA.				

Portland FREIGHTLINER CORPORATION Oregon 97208

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
			J# 40320

E-183

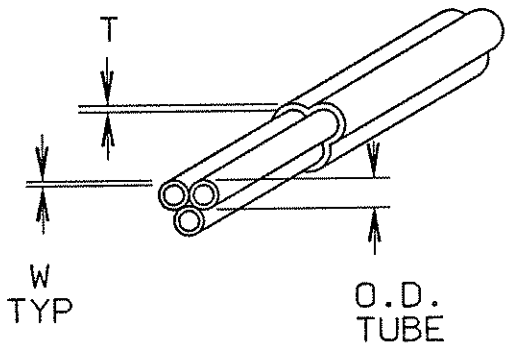
48-02167

ORIGINAL JOB NO.		TITLE	PART NO.
N0013		BUNDLE, TUBE NYLON	48-02167
LAST CHG LTR	E		SHEET 1 OF 1

SCOPE: THIS SPECIFICATION IDENTIFIES NYLON TUBE MULTIPLES BUNDLED IN A CLOSE FITTING ABRASION RESISTANT NYLON COVER.

APPLICATION: CONTROL AIR PRESSURE DUCTING, SUCH AS TRANSMISSION SHIFT ACTUATION.

SKETCH



SPECIFICATION NUMBERS

BUNDLE	COLOR	T	W	O.D.	MANUFACTURER'S NUMBER		FREIGHTLINER SPECIFICATION NUMBER
					PH	SMQ	
3 X 1/8	COVER -BLACK TUBE #1-NATURAL TUBE #2-WHITE TUBE #3-BLACK	.030	.020 TO .023	1/8	507046C1	4600-00215-001	48-02167-3C
2 X 1/8	COVER -BLACK TUBE #1-WHITE TUBE #2-BLACK	.030	.020 TO .023	1/8	507075C1		48-02167-2C

SPECIFICATIONS

1. MATERIAL: COVER: NYLON 6, WITH U.V. RESISTANT PIGMENTATION
TUBES: NYLON 11, COLOR PER TABLE.

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION
E	N0013	FEF	01-12-84	REVISED & REDRAWN

COMPILED	FEF	DATE DRAWN	CADAM ORIGINAL	UNIT OF MEASURE	MASTER NUMBER	
APPROVED	DJL	01-12-84		FT	05170	000D

48-02169

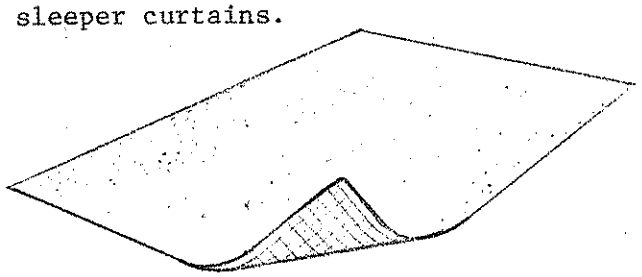
Materials Specification

PRINT ISSUED	TITLE	PART NO.
	SHEET, VINYL COATED NYLON MESH	48-02169
LAST CHG. LTR		SHEET 1 OF 1

SCOPE This specification identifies vinyl coated nylon mesh.

APPLICATION Cab sleeper curtains.

SKETCH



SPECIFICATION NUMBERS

COLOR	T THICKNESS (APPROX.)		MANUFACTURER'S NUMBER FCL		FREIGHTLINER SPECIFICATION NUMBERS
Black	.025		Facilon #1814		48-02169-000

SPECIFICATIONS

1. Material: Nylon mesh, vinyl coated.
Must pass Federal Motor Vehicle Safety Standard #302.
Usually supplied in 50" width rolls.

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
—	—	—	J #38200

ns

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED	Rollins	5-25-72			YARD

Portland FREIGHTLINER CORPORATION Oregon 97208

48-02171

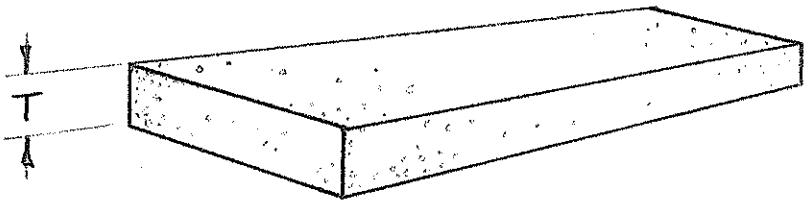
Materials Specification

PRINT ISSUED	TITLE	PART NO.
	SHEET, URETHANE FOAM 6 LBS./FT.^{3}	48-02171
LAST CHG. LTR. A		SHEET 1 OF 1

SCOPE This specification describes medium density closed cell flexible polyester urethane foam sheet.

APPLICATION General use, insulation, air barrier, etc. Is tough and resilient, does not crumble; has only moderate heat resistance.

SKETCH



SPECIFICATION NUMBERS

T THICKNESS (INCHES)		MANUFACTURER'S NUMBERS GTR	DCO	UPJ		FREIGHTLINER SPECIFICATION NUMBERS*
1/4		Order by Description				48-02171-025
3/8						-038
1/2						-050
3/4						-075
1						-100
2						-200
4						-400

*Dash No. = Thickness in 1/100's inch.

SPECIFICATIONS

1. Material: Polyester Urethane foam, flexible, closed cell, density 6 lbs./ft.^{3} approximately, 25 percent compressed under 111 lbs./ft.^{2}, self extinguishing per ASTM test method D 1692-59T. Must pass Federal Motor Vehicle Safety Standard 302, Flammability of Interior Materials.

2. Color: Brown; optional, white.

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED	Rollins	6-23-72			Sq. Ft.

Portland FREIGHTLINER CORPORATION Oregon 97208

CHG	BY	DATE	WAS
A			

CHG	BY	DATE	WAS
A	HJR	4-12-73	Add mfg. nos; J #A0325
			Job # 35810

E-183

48-2172

CHG	BY	DATE	WAS	JOB NO
G	RG	5-12-77	Added Sht. 2	64136
H	SB	7-11-77	SEE SHT. 3	64410
J	HD	2/9/78	Added Sht 4	C1231
K	MGP	3-10-80	SEE SHT. 2	C1500T
L	MGP	11-24-80	See SHT. 2	C1500T

CHG	BY	DATE	WAS	JOB NO
C	D.L.	3-20-74	Revd. & Redrn	A0590
D	HJR	11-14-75	Add Note *	A0790
E	RLE	4-6-76	Added Status	C0795
F	HJR	7-26-76	See Sht 2	61331

Materials Specification

PRINT ISSUED		TITLE	PART NO.
		FABRIC, VINYL (NAUGAHYDE)	48-2172
LAST CHG. LTR.	L		SHEET 1 OF 4

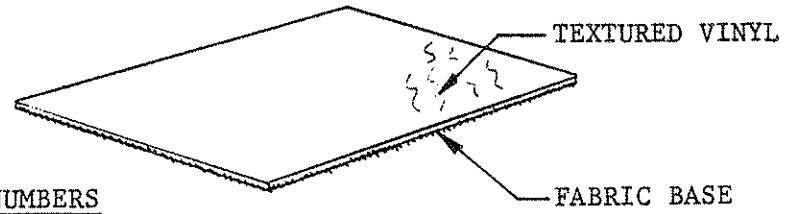
SCOPE

This specification identifies a lightly textured polymeric vinyl coated fabric for automotive uses.

APPLICATION

Cover for truck seat & back cushions & other cab upholstery.

SKETCH



SPECIFICATION NUMBERS

COLOR	PATTERN	MANUFACTURES' DESIGNATION UNR		STAT.	FREIGHTLINER SPECIFICATION NUMBERS
Black (FL Std)	Sorrell *	SO-62S		C	48-2172-100
Golden Rod	Spirit Of '76	US-24		C	-124
Chocolate		US-28		C	-128
Fern		US-33		C	-133
Olive		US-38		C	-138
Willow		US-42		C	-142
Forest		US-44		C	-144
Midnite Blue		US-52		C	-152
Space Blue		US-53		C	-153
Claret		US-57		C	-157
American Beauty		US-60		C	-160
Persimmon		US-73		C	-173
Chestnut		US-75		C	-175
Terra Cotta		US-76		C	-176
Sandalwood		US-78		C	-178
Mocha		US-81		C	-181
Pongee		US-88		C	-188
Black		US-93		C	-193
Adobe White		US-94		C	-194

(Continued...)

*Material of this pattern weighs 19.7± 1 oz./yd.^{2} All other patterns have thickness and weight per notes 2 & 3 on sheet 2.

COMPILED	D.LeL.	DATE DRAWN		MATERIAL	UNIT OF MEASURE
APPROVED		3-20-74			YARD

ORIGINAL JOB NO.	TITLE	PART NO.
	FABRIC VINYL (NAUGHAHYDE)	48-2172
LAST CHG LTR L		SHEET 2 OF 4

SPECIFICATION NUMBERS (CONTINUED)

COLOR	PATTERN	MANUFACTURER'S DESIGNATION SCC	MANUFACTURER'S DESIGNATION UNL	STAT	FREIGHTLINER SPECIFICATION NUMBERS
CHERRY	VINTAGE	2-14		C	48-2172-214
PERSIMMON		2-15		C	48-2172-215
RUSSET		2-16		C	48-2172-216
COGNAC		2-17		C	" " -217
MAPLE		2-18		C	" " -218
PEWTER		2-19		C	" " -219
CHAMPAGNE		2-20		C	" " -220
TOAST		2-21		C	" " -221
LICORICE		2-22		C	" " -222
CURRY		2-23		C	" " -223
PINEAPPLE		2-24		C	" " -224
AQUA		2-25		C	" " -225
AVACADO		2-26		C	" " -226
FERN		2-27		C	" " -227
DEMITASSE		2-28		C	" " -228
DEEP OLIVE		2-29		C	" " -229
CRIMSON	REO		REO-45	C	" " -345
RAWHIDE			REO-46	C	" " -346
PARCHMENT			REO-47	C	" " -347
BLUE			REO-48	C	" " -348
BLACK			REO-49	C	" " -349
WALNUT			REO-50	C	" " -350
SPRUCE			REO-51	C	" " -351

(H)

(L)

(K)						
PALOMINO			EV4653	C	" " -600

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION
L	C1500T	MGP	11-24-80	Added: EV4653

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION
G	64136	RG	5-12-77	Added Sht. 2
H	64410	SB	7-11-77	REMOVED NOTE 1.
J	C1231	HD	2/9/78	Added sheet 4
K	C1500T	MGP	3-10-80	ADDED -600

COMPILED	GEBO	DATE DRAWN		MATERIAL	UNIT OF MEASURE
APPROVED		5-12-77			YARD

Materials Specification

PRINT ISSUED	TITLE	PART NO.
	FABRIC, VINYL (NAUGAHYDE)	48-2172
LAST CHG. LTR. L		SHEET 3 OF 4

SPECIFICATION NUMBERS (Continued)

COLOR	PATTERN	MANUFACTURES' DESIGNATION UNR	MANUFACTURES' DESIGNATION GTR	STAT.	FREIGHTLINER SPECIFICATION NUMBERS
Turf Tan	Gladstone	GE-63F		C	-563
Gold		GE-61F		NC	-561
Blue		GE-62F		C	-562
Avocado		GE-64F		C	-564
Red		GE-67F		C	-567
Dark Brown		GE-65F		C	-565
Oxblood		GE-68F		C	-568
Bittersweet		GE-70F		NC	-570
Palm Leaf		GE-69F		C	-569
Off White		GE-71F		NC	-571
Black		GE-73F		C	-573
Rawhide		GE-75F		C	-575
Burgundy	Holster	-	**	C	-871
Crimson	Rogue	RU-71F		C	-771
Rawhide		RU-73F		C	-773
Parchment		RU-74F		C	-774
Blue	Holster	-	**	C	-878
Blue	Rogue	RU-78F		NC	-778
Wheat		RU-80F		NC	-780
Black		RU-81F		C	-781
Walnut		RU-82F		C	-782
Pecan		RU-83F		C	-783
Spruce		RU-85F		C	-785
Buckskin		RU-84F		C	-784

** Order by color & pattern; wt. 32 oz/sq.yd.

SPECIFICATIONS

(1) Material: Expanded vinyl coated fabric.
2. Thickness: .040 +.003 −.004
3. Weight: 24 oz./sq. yd. (Except -100, See Note P.1 & Except -871, -878.)
4. Finish: Lightly textured surface with anti-static slip finish, mildew resistant backing & facing, oil resistant facing.
5. Must pass Federal Motor Vehicle Safety Standard No. 302, Flammability Of Interior Materials.
6. Meets Federal Spec. CCC-A-680a with treatments: A-1 Flame Resistance; B Mildew Resistance; C Oil Resistance.
7. Normally supplied in 54" X 30 yard rolls.
(H) 8. 48-2172-214 thru -351 for use by Freightliner of Canada only.

CHG	BY	DATE	WAS	JOB NO
F	HJR	7-26-76	Add -871,-878	61331
G	RG	5-12-77	Added Sht. 2	64136
H	SB	7-11-77	ADDED NOTE 8	64410
J	HD	2/9/78	Added sheet 4	C1231
K	MGP	3-10-80	SEE SHT. 2	C1500T

CHG	BY	DATE	WAS	JOB NO
C	D.L.	3-20-74	Revd & Redrn	A0590
D	HJR	11-14-75	-250	A0790
E	RLE	4-6-76	Added Status	C0795
E1	RLE	4-6-76	Added -563,567 -569&UU-784	C0795

COMPILED	D.LeL.	DATE DRAWN		MATERIAL	UNIT OF MEASURE
APPROVED		3-20-74		(1)	YARD

Portland FREIGHTLINER CORPORATION Oregon 97208

Materials Specification

ORIGINAL JOB NO.	TITLE	PART NO.
	FABRIC, VINYL (NAUGAHYDE)	48-2172
LAST CHG LTR L		SHEET 4 OF 4

Specification Numbers

COLOR	PATTERN	MANUFACTURER'S DESIGNATION (DURAN)		STAT.	FREIGHTLINER SPECIFICATION NUMBERS
CRIMSON		NB 373F		C	900
TAN		NB 420F		C	901
ROYAL BLUE		NB 742F		C	902

Specifications

1. Material: Expanded polyester cotton
2. Thickness: .044 ± .005
3. Weight: 32 oz./sq.yd.
4. Finish: same
5. Must pass Federal Motor Vehicle Safety Standard No. 302 flammability of interior materials.
6. Normally supplied in 54" x 40 yard rolls.

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION
J	C1231	HD	2-22-78	ADD SHT. 4
K	C1500T	MGP	3-10-80	SEE SHT. 2
L	C1500T	MGP	11-24-80	See Sht. 2

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION

COMPILED	DANG	DATE DRAWN			UNIT OF MEASURE
APPROVED					YARD

Materials Specification

PRINT ISSUED	TITLE	PART NO.
	FABRIC, VINYL (BOLTAFLEX) 24 OZ.	48-2173
LAST CHG. LTR.		SHEET 1 OF 3

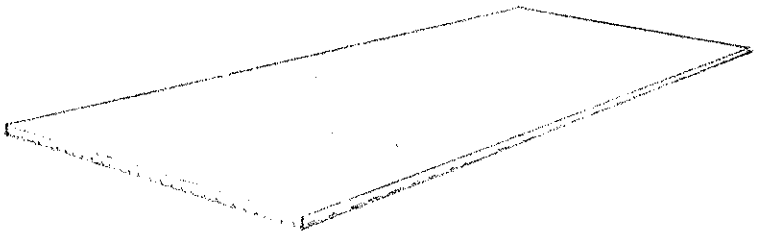
CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
—	—	—	Job 30660

SCOPE This specification identifies a textured polymeric vinyl-coated fabric for automotive uses.

APPLICATION Cover for truck seat and back cushions and other cab upholstery

SKETCH



SPECIFICATION NUMBERS

	TEXTURE	MANUFACTURER'S DESIGNATION				FREIGHTLINER SPECIFICATION NUMBERS
		C&A	PATTERN	STATE	COLOR	
	Fine Pebbled	1500	60A	AK	White	48-2173-001
				AZ	Bisque	-002
				SC	Moonglow	-003
				WV	Black	-004
				IL	Slate	-005
				RI	Bayberry	-006
				IN	Putty	-007
				IA	Sage	-008
				TX	Beige	-009
				HI	Pineapple	-010
				CA	Lemon Peel	-011
				KS	Sunflower	-012
				NV	Gold	-013
				NB	Mustard	-014
				VT	Maple Sugar	-015
				ID	Camel	-016
				VA	Tobacco	-017
				AL	Espresso	-018
				DE	Chocolate	-019
				NH	Oak Brown	-020
				WY	Saddle Tan	-021
				CT	Allspice	-022
				KY	Bronze	-023
				MN	Saffron	-024
				FL	Marigold	-025
				NM	Burnt Orange	-026
				OH	Nasturtium	-027
				WA	Fire Red	-028
				MO	Carmine	-029
				SD	Indian Red	-030

(Continued)

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED	Rollins	6-23-72			Yard

PRINT ISSUED		TITLE	PART NO.
		FABRIC, VINYL (BOLTAFLEX) 24 OZ.	48-2173
LAST CHG. LTR.			SHEET 2 OF 3

WAS | CHG | BY | DATE

WAS | CHG | BY | DATE | Job # 30660

SPECIFICATION NUMBERS (Continued)

TEXTURE	MANUFACTURER'S DESIGNATION CSA	PATTERN	STATE	COLOR	FREIGHTLINER SPECIFICATION NUMBERS
Fine Pebbled	1500	USA	AR	Candy Apple	48-2173 -031
			NY	Burgundy	-032
			UT	Cyclamen	-033
			GA	Grape	-034
			OR	Purple Iris	-035
			NJ	Blueberry	-036
			MT	Bluejay	-037
			CO	Sky	-038
			MA	Marina	-039
			MD	Navy	-040
			TN	Turquoise	-041
			MI	Aqua	-042
			PA	Jade	-043
			LA	Lime	-044
			MS	Empire Green	-045
			OK	Emerald	-046
			ME	Chartreuse	-047
			ND	Avocado	-048
			WI	Dark Olive	-049
			NC	Bronze Green	-050
Soft Pebbled	1560	El Paso		Black	-101
				White	-102
				Antique Gold	-103
				Avocado	-104
				Bottle Green	-105
				Turquoise	-106
				Cocoa	-107
				Persimmon	-108
				Crimson	-109
				Sand	-110
Crinkled Leather	1575	Hondo		Russet	-201
				Persimmon	-202
				Black	-203
				Chestnut	-204
				Saddle Tan	-205
				Crimson	-206
				Avocado	-207
				Turquoise	-208

(Continued)

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED	Rollins	6-23-72			Yard

Materials Specification

PRINT ISSUED	TITLE	PART NO.
	FABRIC, VINYL (BOLTAFLEX) 24 OZ.	48-2173
LAST CHG. LTR		SHEET 3 OF 3

48-2173

WAS | DATE | BY | CHG

SPECIFICATION NUMBERS (Continued)

	TEXTURE	MANUFACTURER'S DESIGNATION GSA	PATTERN	STATE	COLOR	FREIGHTLINER SPECIFICATION NUMBERS
	Fine Cloth	1645	TAI		Gold	48-2173-301
					Avocado	-302
					Beige	-303
					Russet	-304
					Turquoise	-305
					Black	-306
					Brown	-307
	Rich Leather	1650	Exeter		Crown Gold	-401
					Turf Brown	-402
					Admiral Blue	-403
					British Moss	-404
					Claret	-405
					Pongee	-406
					Bittersweet	-407

WAS Job #30660 | DATE — | BY — | CHG —

SPECIFICATIONS

1. Material: Expanded vinyl coated fabric.
   Thickness, Nominal Overall: .050 (+.005-.004)
   Weight: 24 oz./sq. yd.
   Flame Resistance: Must pass Federal Motor Vehicle Safety Standard No. 302, Flammability of Interior Materials.
   Anti-Static slip finish, lightly textured surface.
   Mildew Resistant: Backing and facing
   Oil Resistant
   Normally supplied in 54" X 30 yd. rolls
   Meets Federal Spec. CCC-A-680a with treatments:
   A-1 Flame Resistance
   B Mildew Resistance
   C Oil Resistance

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED	Rollins	6-23-72			Yard

Portland FREIGHTLINER CORPORATION Oregon 97208

48-02174

Materials Specification

PRINT ISSUED	TITLE	PART NO.
	LUBRICANT, MULTISERVICE HYPOID GEAR	48-02174
LAST CHG. LTR. A		SHEET 1 OF 1

SCOPE This specification identifies multiservice hypoid gear lubricant.

APPLICATION Drive axle lubricant, etc.

SPECIFICATION NUMBERS

	GRADE (1)	MANUFACTURER'S NUMBER UNC	MANUFACTURER'S NUMBER SO	FREIGHTLINER SPECIFICATION NUMBERS
	SAE 75 SAE 80 SAE 90 SAE 140	Order by description and specify SAE viscosity grade.		48-02174-075 -080 -090 -140

SPECIFICATIONS

(1) Material: Must meet pertinent provisions of USA Spec MIL-L-2105B; API Service GL-5 (Ref. SAE Information Report J307).

2. Must not contain zinc additives.

CHG	BY	DATE	WAS
			J #98950
A	HJR	4-16-73	Add -075; Add MFR info; J #A0343.

CHG	BY	DATE	WAS
A			

ns

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED	Rollins	7-25-72			PT.

Portland FREIGHTLINER CORPORATION Oregon 97208

E-183

DRAWN	PTA	TITLE	DRAWING NUMBER	
APPRV	DAJ	THREAD COTTON	48-02175	
DATE	10/12/99	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1	CHG. LTR. D
CATIA ORIGINAL				

SCOPE: THIS SPECIFICATION IDENTIFIES 16/4 HARD FINISH COTTON THREAD.

APPLICATION: UPHOLSTERY SEWING, ETC.
DEEP DRAWN, MOLDED, HEADLINERS AND SIDEWALLS.

SPECIFICATION NUMBERS:

COLOR	SIZE (TICKET)	TWIST	MANUFACTURERS NUMBER		FREIGHTLINER SPECIFICATION NUMBER
			CCS	AMK	
BLACK	16/4	LEFT	16/4 BLACK	BLACK	48-02175-001
BEAVER	16/4	LEFT	16/4 BEAVER		-002
TAN	16/4	LEFT			-003
BLUE	16/4	LEFT		6007	-004
RED	16/4	LEFT		2003	-005
SLATE GRAY	16/4	LEFT		2003	-006
BONNEVILLE BEIGE	16/4	LEFT		11918 TOAST BROWN	-100
CASCADE CRIMSON	16/4	LEFT		2007 DR CARDINAL	-200
PACIFIC BLUE	16/4	LEFT		6975 NAVY BLUE	-300

SPECIFICATIONS:

1. MATERIAL: 16 TICKET 4 CORD LEFT TWIST COTTON THREAD
2. FINISH: HARD ("EXCEL GLACE")
3. COLOR: SEE TABLE.

S

CHG	JOB NO	DATE	BY	REVISION
D	P07908-21	10/12/99	PTA	REDRAWN FROM CADAM; -100, -200, & -300 ADDED.

48-02176

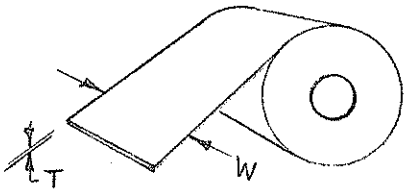
Materials Specification

PRINT ISSUED	TITLE	PART NO.
	TAPE, FOIL PRESSURE SENSITIVE	48-02176
LAST CHG. LTR		SHEET 1 OF 1

SCOPE This specification identifies pressure sensitive adhesive aluminum foil tape.

APPLICATION Protection and repair especially where moisture-vapor sealing is required.

SKETCH



SPECIFICATION NUMBERS

W WIDTH (INCHES)	COLOR	T THICKNESS (MILS)	MANUFACTURER'S NUMBERS			FREIGHTLINER SPECIFICATION NUMBERS
			MMM	PMC		
1	Bright Alum	6.5	426-6936	P-11-1"		48-02176-001
2	Bright Alum	6.5	426-	P-11-2"		-002
3	Bright Alum	6.5	426-	P-11-3"		-003

SPECIFICATIONS

1. Material: Dead-soft aluminum foil 3 mils thick and 2 mils high-tack adhesive.

2. Must pass requirements of Federal Motor Vehicle Safety Standard #302, Flammability of Interior Materials.

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
—	—	—	J #85870

ns

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED	Rollins	7-25-72			FT.

Portland FREIGHTLINER CORPORATION Oregon 97208

48-02177

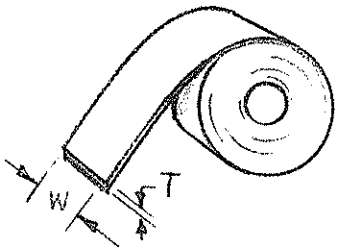
Materials Specification

PRINT ISSUED	TITLE	PART NO.
	TAPE; ELECTRIC, VINYL FLAME RESISTANT	48-02177
LAST CHG. LTR.		SHEET / OF /

SCOPE This specification identifies flame retardant vinyl electric tape.

APPLICATION Splicing, harness wrapping, protection and miscellaneous sealing.

SKETCH



SPECIFICATION NUMBERS

W WIDTH (INCHES)	T THICKNESS (INCHES)	COLOR	MANUFACTURER'S NUMBER PMC		FREIGHTLINER SPECIFICATION NUMBERS *
3/4	.007	Silver	P-29 Silver-3/4"		48-02177-075
1			-1"		-100
1-1/2			-1½"		-150
2			-2"		-200
3			-3"		-300

*Dash number is width of tape in hundredths of an inch.

SPECIFICATIONS

1. Material: Tape, polyvinyl chloride
   Adhesive, pressure sensitive.
   Specially compounded to resist burning.

2. Flammability: Must pass requirements of Federal Motor Vehicle Safety Standard #302, Flammability of Interior Materials.

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
—	—	—	J #30660

ns

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED	Rollins	7-25-72			FT.

Portland FREIGHTLINER CORPORATION Oregon 97208

E-183

48-02178

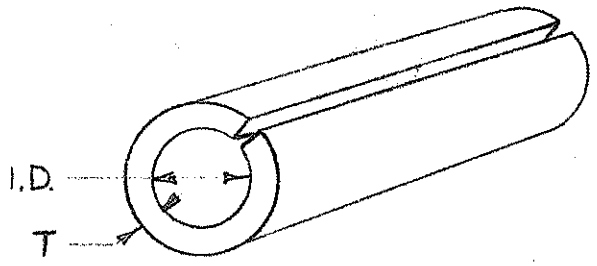
Materials Specification

PRINT ISSUED	TITLE	PART NO.
	INSULATION, PIPE, FLEXIBLE PRE-FORMED SLIT TUBE	48-02178
LAST CHG. LTR.		SHEET 1 OF 1

SCOPE This specification identifies closed-cell pre-formed slit tube flexible plastic insulating material.

APPLICATION Heat insulation of pipe or tube.

SKETCH



SPECIFICATION NUMBERS

I.D.		T	MANUFACTURER'S NUMBER		FREIGHTLINER
NOM. PIPE SIZE	INCHES (APPROX.)	THICKNESS	ASK		SPECIFICATION NUMBERS
3/4"	1.00	3/8	Armaflex 22 1" I.D. x 3/8 wall		48-02178-001

SPECIFICATIONS

1. Material: Flexible closed-cell smooth surface plastic insulating material.

2. Must pass Federal Motor Vehicle Safety Standard 302, Flammability of Interior Materials.

ENGINEERING NOTES

1. Average Physical Properties:

   Density: 5.4 lb/ft^3
   Temperature Range: -40°F to +220°F
   Coeff. of Thermal Conductivity, k: 0.253 at mean temp of 75°F
   Flammability: Rated self-extinguishing as SE 1.0 in., 53 sec. per ASTM D1692-68.
   Ozone: Resistance to stress cracking is good.
   Surface Finish: Smooth and Uniform
   Water Absorption, % by Weight: 3.7 per ASTM D1056-68.

WAS	DATE	BY	CHG

WAS	DATE	BY	CHG
J #30660			

ns

		DATE DRAWN			UNIT OF MEASURE
COMPILED	HJR	7-27-72			FT.
APPROVED	Rollins				

Portland FREIGHTLINER CORPORATION Oregon 97208

48-02179

Materials Specification

PRINT ISSUED	TITLE	PART NO.
	LUBRICANT, ENGINE OIL API TYPE CC	48-02179
LAST CHG LTR. D		SHEET 1 OF 1 (D)

CHG	BY	DATE	WAS	JOB NO
D	BEM	5-13-80	X1 TO C	D2055

SCOPE This specification identifies heavy-duty diesel engine crankcase lubricant.

APPLICATION Engine crankcase lubricant, some main and auxiliary transmissions, etc.

SPECIFICATION NUMBERS

API ENGINE SERVICE DESIGNATION*	ASTM ENGINE OIL DESCRIPTION (1)	SAE VISCOSITY NUMBER	FREIGHTLINER SPECIFICATION NUMBER **
CC	MIL-L-2104B or MIL-L-46152 Provides low temperature anti-sludge anti-rust and lightly supercharged diesel engine performance.	20 20W 30 40 50	48-02179-020 -021 -030 -040 -050

*Per SAE J183 Recommended Practice: CC = Moderate Duty Gasoline and Diesel Engine Service.

**Acceptable products available under this specification:

MFR	DESCRIPTION
UNC	"Unitec" (Specify viscosity).
SO	"Chevron RPM Delo Special" (Specify viscosity).
(B) ASP	Ashland HD (Specify viscosity).

SPECIFICATIONS

(1) See table for ASTM description.

2. Sulphated ash content (per ASTM D-874) must not exceed 1.00%, except lubricants that contain only barium detergent-dispersants may be allowed 1.50% by weight.

3. Zinc content, as zine diorganodithiophosphate, must be present between a minimum of 0.07% and a maximum of 0.10% by weight.

CHG	BY	DATE	WAS	JOB NO
-	-	—	—	85900
A	HJR	1-5-76	Add -040	D0829
B	SK	11-29-77	ASP, Ashland HD	65393
C	LM	1-8-80	STATUS X1	D2055

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED	Rollins	1-11-73			QUART

Portland FREIGHTLINER CORPORATION Oregon 97208

48-02180

Materials Specification

PRINT ISSUED	TITLE	PART NO.
	LUBRICANT, STRAIGHT MINERAL GEAR OIL	48-02180
LAST CHG. LTR.		SHEET 1 OF 1

SCOPE This specification identifies straight mineral gear oil, except it may contain pour and foam depressants.

APPLICATION Manual transmission and differential lubricant, etc.

WAS	DATE	BY	CHG

A

SPECIFICATION NUMBERS

API SERVICE DESIGNATION	API DESCRIPTION (1)	SAE VISCOSITY NUMBER	MFR'S NUMBERS SO	MFR'S NUMBERS UNC	MFR'S NUMBERS	FREIGHTLINER SPECIFICATION NUMBERS
GL-1	Oil without additive, except that it may contain pour and/or foam depressants.	75	*	**		48-02180-075
		80				-080
		90				-090
		140				-140

* RPM Gear Lubricant. Specify viscosity.
** Red Line Worm Gear Lubricant. Specify viscosity.

WAS	DATE	BY	CHG
J #85910	—	—	—

SPECIFICATIONS

(1) See table for API Description.
2. This lubricant shall conform to applicable provisions of SAE Recommended Practice J306.

ns

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED	Rollins	9-14-72			PT.

Portland FREIGHTLINER CORPORATION Oregon 97208

E-183

48-02181

Materials Specification

PRINT ISSUED	TITLE	PART NO.
	LUBRICANT, LOW TEMPERATURE GREASE	48-02181
LAST CHG. LTR.		SHEET 1 OF 1

SCOPE This specification identifies a multipurpose grease having extreme low temperature lubricating capabilities and moisture resistance.

APPLICATION Speedometer cables; also for general use for extreme cold weather chassis lubrication, including steering chuck.

WAS	DATE	BY	CHG

SPECIFICATION NUMBERS

NLGI NUMBER	DESCRIPTION	MANUFACTURER'S NUMBER FLP	MANUFACTURER'S NUMBER	FREIGHTLINER SPECIFICATION NUMBERS
(1)	White, non-fibrous, soft butter-like consistency	1-774-T*		48-02181-001

* Lubriplate Aero

WAS	DATE	BY	CHG
J #85990	—	—	—

SPECIFICATIONS

(1) Material: See table above.

ENGINEERING NOTES

1. Typical Properties:

Average Worked Penetration	325
NLGI Number	1
Melting Point, Degrees F	360
Approx. Cold Test, Degrees F	-70

ns

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED	Rollins	9-5-72			LB.

Portland FREIGHTLINER CORPORATION Oregon 97208

E-183

48-02182

Materials Specification

PRINT ISSUED	TITLE	PART NO.
	TRANSMISSION FLUID, AUTOMATIC	48-02182
LAST CHG. LTR. A		SHEET 1 OF 1

SCOPE This specification identifies a type of fluid for transmitting hydrodynamic energy in a torque converter and suitably transferring heat to maintain necessary operating temperature range of the automatic transmission.

APPLICATION Drive fluid in automatic transmissions and similar uses.

SPECIFICATION NUMBERS

DESCRIPTION (1)	MFR'S IDENTIFICATION		FREIGHTLINER SPECIFICATION NUMBERS
	MFR	PRODUCT	
Dexron hydraulic fluid	UNC SO	Union ATF Dexron Chevron ATF Dexron Approved	48-02182-000
Hydraulic Trans. Fluid Type C-3	UNC SO	Union C-3 Fluid Chevron Torque Fluid No. 5	-200

SPECIFICATIONS

(1) Material: See table above.

2. Must meet pertinent provisions of SAE J311 Information Report.

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
-	-	-	J #60650
A	KJY	5-14-80	FROM C-2, TO C-3 97272

ns

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED	Rollins	12-21-72			QT.

M/F

48-02184

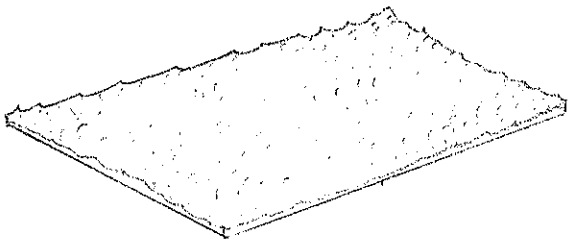
Materials Specification

PRINT ISSUED		TITLE	PART NO.
		CARPET, INDOOR-OUTDOOR (UNBACKED)	48-02184
LAST CHG. LTR.			SHEET 1 OF 1

SCOPE This specification describes indoor-outdoor type carpet without backing pad.

APPLICATION Custom cab floor covering.

SKETCH



SPECIFICATION NUMBERS

COLOR	BACKING		MANUFACTURER'S NUMBER OZC STYLE	MANUFACTURER'S NUMBER OZC COLOR		FREIGHTLINER SPECIFICATION NUMBERS
See MFR Columns	None		54	Terrence Green		48-02184-054
			55	Cardinal Red		-055
			56	Bronze		-056
			57	Regal Blue		-057
			59	Avocado		-059
			60	Charcoal		-060
			62	Sapphire		-062
			64	Galleon Gold		-064
			71	Indian Corn		-071
			72	Spanish Gold		-072

SPECIFICATIONS

1. Material: Per manufacturer's specification.
2. Must pass Federal Motor Vehicle Safety Standard No. 302, Flammability of Interior Materials.
3. Normally supplied in 54" width rolls.

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED	Rollins	9-26-72			SQ. YD.

Portland FREIGHTLINER CORPORATION Oregon 97208

WAS				
DATE				
BY				
CHG				

WAS	J #62930			
DATE	-			
BY	-			
CHG	-			

ns

48-02185

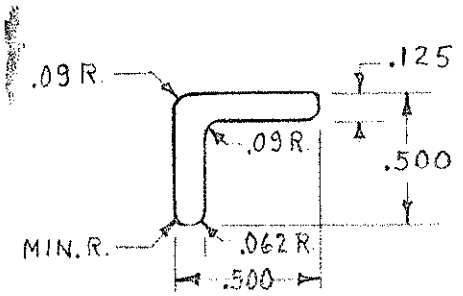
Materials Specification

PRINT ISSUED	TITLE	PART NO.
	EXTRUSION, ANGLE ABS PLASTIC	48-02185
LAST CHG. LTR. —		SHEET 1 OF 1

SCOPE This specification identifies a particular ABS plastic extrusion.

APPLICATION Tab for RH dash latch.

SKETCH



SPECIFICATION NUMBERS

	MATERIAL	COLOR	WT PER FT	EXTRUSION DIE NUMBER PPL		FREIGHTLINER SPECIFICATION NUMBER
	Cycolac CG®	BLK		(Ref.) 18-11054		48-02185-000

® Trademark of Marbon Division, Borg Warner Co.

SPECIFICATIONS

1. Material: ABS Plastic (See Table).

WAS	CHG	BY	DATE

WAS	CHG	BY	DATE
J #60180	-	-	-

ns

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED	Rollins	10-12-72			FT.

Portland FREIGHTLINER CORPORATION Oregon 97208

48-02186

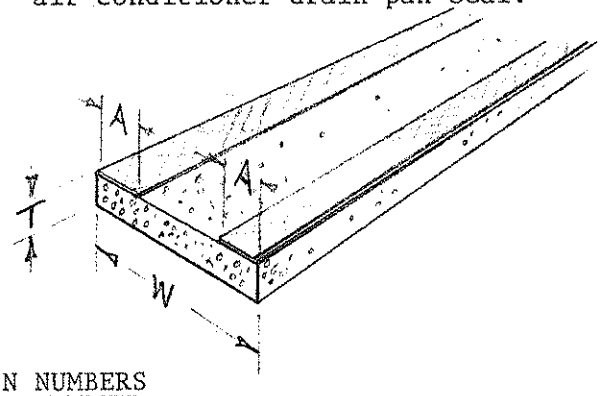
Materials Specification

PRINT ISSUED		TITLE	PART NO.
		STRIP, PVC FOAM, ADHESIVE BACKED	48-02186
LAST CHG. LTR.	A		SHEET 1 OF 1

SCOPE This specification identifies polyvinyl chloride closed cell foam strip with adhesive strips at sides of back.

APPLICATION Padding, insulation, air seal, and other general uses, esp. for air conditioner drain pan seal.

SKETCH



SPECIFICATION NUMBERS

T	W	A		MANUFACTURER'S NUMBER	FREIGHTLINER SPECIFICATION NUMBER
0.50	6.25	1.50			48-02186-000
0.50	7.25	3.62			-005
0.38	6.25	1.50			-010

SPECIFICATIONS

1. Material: Foam: Closed cell polyvinyl chloride, Grade VS-429 FS to meet ASTM D1667-64. Must pass Federal Motor Vehicle Safety Std. 302, Flammability of Interior Materials.

   Adhesive: Morgan's Adhesive #747, or equal.

   Backing: Shipped with strippable paper backing.

2. Surface: Cut face or molded, optional with manufacturer.

CHG	BY	DATE	WAS
A			

CHG	BY	DATE	WAS
A	HJR	9-18-73	Add -005; J#A0523
—	—	—	J #60310

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED	Rollins	11-9-72			FT.

ns

Portland FREIGHTLINER CORPORATION Oregon 97208

48-02187

Materials Specification

PRINT ISSUED	TITLE	PART NO.
	SHEET, PLASTIC (UVEX)	48-02187
LAST CHG LTR		SHEET 1 OF 1

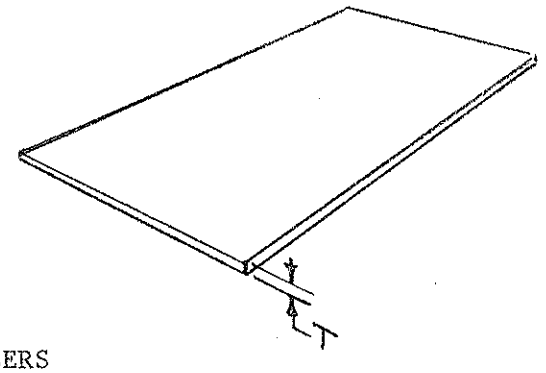
CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
-	-	-	J #60320

SCOPE This specification identifies optically transparent sheet cellulose acetate butyrate.

APPLICATION Illuminated instrument panel "light pipe" label.

SKETCH



SPECIFICATION NUMBERS

COLOR	THICKNESS (2)		MANUFACTURER'S NUMBER ECP		FREIGHTLINER SPECIFICATION NUMBERS
Clear	.060		100060		48-021870-060
	.080		100080		-080
	.100		100100		-100
	.125		100125		-125

SPECIFICATIONS

1. Material: Cellulose acetate butyrate in optically clear smooth sheet.

(2) Must pass Federal Motor Vehicle Safety Std. #302, Flammability of Interior Materials.

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED	Rollins	11-9-72			SQ. FT.

ns

Portland FREIGHTLINER CORPORATION Oregon 97208

E-183

48-02188

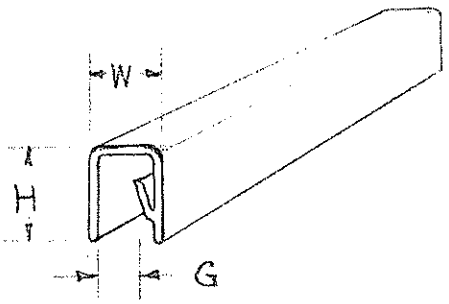
Materials Specification

PRINT ISSUED	TITLE	PART NO.
	TRIM, EDGING	48-02188
LAST CHG LTR.		SHEET 1 OF 1

SCOPE This specification identifies flexible embossed vinyl steel core trims.

APPLICATION Safe edge for glass, metal, etc.

SKETCH



SPECIFICATION NUMBERS

COLOR	G GRIP MIN.-MAX.	W	H	TEXTURE	MANUFACTURER'S NUMBERS SPC		FREIGHTLINER SPECIFICATION NUMBERS
BLACK	.070-.150	.390	.518	(a)	203605		48-02188-001
BEIGE				(b)	294045		-002

(a) "Basket Weave"
(b) "Sof-tone"

SPECIFICATIONS

1. Material: Flexible polyvinyl chloride reinforced by flexible steel core.

2. Must pass Federal Motor Vehicle Safety Standard 302, Flammability of Interior Materials.

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
-	-	-	J #60360

ns

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED	Rollins	11-14-72			FT.

Portland FREIGHTLINER CORPORATION Oregon 97208

48-02189

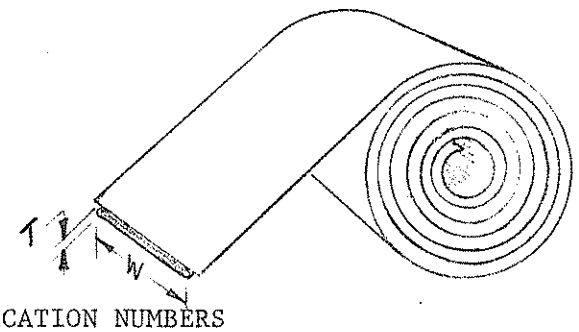
Materials Specification

PRINT ISSUED	TITLE	PART NO.
	TAPE, INSULATING MASTIC	48-02189
LAST CHG LTR		SHEET 1 OF 1

SCOPE This specification identifies a pliable cork and asbestos filled self-adhesive mastic insulation in tape form.

APPLICATION Refrigerant piping insulation.

SKETCH



SPECIFICATION NUMBERS

T THICKNESS	W WIDTH		MANUFACTURER'S NUMBER VIR		FREIGHTLINER SPECIFICATION NUMBER
1/8	2.00		PT-1		48-02189-200

SPECIFICATIONS

1. Material: Virgin cork (40%), asbestos and rubber bonded in an asphalt base. Supplied in tape form separated by strippable paper backing.

2. Must pass Federal Motor Vehicle Safety Standard 302, Flammability of Interior Materials.

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
-	-	-	J #60390

ns

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED	Rollins	11-10-72			FT.

Portland FREIGHTLINER CORPORATION Oregon 97208

APPRV	KCB	METHYL	
DATE	10/10/90	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1

SCOPE: THIS SPECIFICATION IDENTIFIES 188 PROOF METHYL ALCOHOL.

APPLICATION: ANTIFREEZE VAPOR FOR AIR BRAKE SYSTEM.

SPECIFICATIONS:		FREIGHTLINER SPECIFICATION NUMBER
MINIMUM 188 PROOF METHYL ALCOHOL		48-02190-000 *48-02190-001

* 48-02190-001 DISCONTINUED, REPLACED BY 48-02190-000.

CHG	JOB/RLSE NO	DATE	BY	REVISION
C	P6294G-02	10/10/90	ERK	REVISED AND REDRAWN

48-02191

Materials Specification

PRINT ISSUED	TITLE	PART NO.
	LUBRICANT, WHEEL BEARING HIGH TEMPERATURE	48-02191
LAST CHG. LTR.		SHEET 1 OF 1

SCOPE This specification identifies a grease having high resistance to the deteriorating effects of high temperature and the separating effects of centrifugal action, and having good anti-rust properties, stable against oil-soap separation and excessive softening.

APPLICATION Wheel bearing lubrication.

CHG	BY	DATE	WAS

SPECIFICATION NUMBERS

DESCRIPTION	MANUFACTURER'S NUMBER		FREIGHTLINER SPECIFICATION NUMBER
	UNC	SO	
Multipurpose Wheel Bearing Grease	Unoba A 2	RPM Wheel Bearing Grease	48-02191-000

CHG	BY	DATE	WAS
-	-	-	3 # 60380

SPECIFICATIONS

1. Material: Per Manufacturer's Specification.

eb

		DATE DRAWN			UNIT OF MEASURE
COMPILED	HJR	9-5-72			LB.
APPROVED	Rollins				

Portland FREIGHTLINER CORPORATION Oregon 97208

F-183

Materials Specification

PRINT ISSUED	TITLE	PART NO.
	FELT, SHEET, AUTOMOTIVE	48-02192
LAST CHG. LTR B		SHEET 1 OF 1

SCOPE This specification identifies standard mechanical roll felt for general automotive uses.

APPLICATION Gaskets and liners.

SKETCH



SPECIFICATION NUMBERS

T (NOM.)	NOM. WT. LB/YD^2	SAE NUMBER	COLOR		FREIGHTLINER SPECIFICATION NUMBER *
1/16	.975	F-51	GRY		48-02192-062
1/8	1.950	F-3	GRY	(A)	48-02192-125
3/16		F-3	GRY		48-02192-188

*Dash number is a three-digit number expressing thickness of material in thousandths of an inch.

4,5,6,7,8

SPECIFICATIONS

1. Material shall consist of wool felt conforming to applicable requirements of SAE Std J314.

2. Must pass requirements of Federal Motor Vehicle Safety Standard 302, Flammability of Interior Materials.

OD200

CHG	BY	DATE	WAS
-	-	-	J #60530
A	PD	2-17-81	Add -125 J#C1500
B	MS	9-30-82	ADDED 48-02192-188

CHG	BY	DATE	WAS

1902 B

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED	Rollins	12-11-72			SQ. YD.

Portland FREIGHTLINER CORPORATION Oregon 97208

REVISED & REDRAWN 5/14/85 B A

ns

E-183

48-02193

Materials Specification

PRINT ISSUED	TITLE	PART NO.
	LUBRICANT, ENGINE OIL API TYPE CD	48-02193
LAST CHG. LTR. A		SHEET 1 OF 1

SCOPE This specification identifies heavy-duty diesel engine crankcase lubricant.

APPLICATION Engine crankcase lubricant, some main and auxiliary transmissions, etc.

SPECIFICATION NUMBERS

API ENGINE SERVICE DESIGNATION*	ASTM ENGINE OIL DESCRIPTION (1)	SAE VISCOSITY NUMBER	FREIGHTLINER SPECIFICATION NUMBER **
CD	MIL-L-45199 or MIL-L-2104C Provides moderately supercharged diesel engine performance.	20 20W 30 50	48-02193-020 -021 -030 -050

*Per SAE J183 Recommended Practice: CD = Severe Duty Diesel Engine Service

**Acceptable products available under this specification:

MFR	DESCRIPTION
SO	Chevron RPM Delo 300 (Specify viscosity). Chevron Delo 400 (Specify viscosity).
UNC	Guardol (Specify viscosity).

SPECIFICATIONS

(1) See table for ASTM description.

2. Sulphated ash content must not exceed 1.85%.

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
--	--	-	Job #85900
A	HJR	5-18-73	-120,-121,-131,-150; J #A0418

ns

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED	Rollins	1-11-73			QUART

Portland FREIGHTLINER CORPORATION Oregon 97208

E-183

Materials Specification

PRINT ISSUED	TITLE	PART NO.
	LUBRICANT, ENGINE OIL API TYPE CC/CD	48-02194 X1
LAST CHG. LTR C		SHEET 1 OF 1

WAS	CHG	BY	DATE
STATUS TO X1 PER [illegible]	C	WS	1-8-[illegible]

SCOPE This specification identifies moderate to heavy-duty diesel engine crankcase lubricant.

APPLICATION Engine crankcase lubricant, some main and auxiliary transmissions, etc.

SPECIFICATION NUMBERS

API ENGINE SERVICE DESIGNATION*	ASTM ENGINE OIL DESCRIPTION (1)	SAE VISCOSITY NUMBER	FREIGHTLINER SPECIFICATION NUMBER **
CC/CD	Provides low temperature, anti-sludge, anti-rust and lightly to moderately supercharged diesel engine performance. This constitutes combined performance of both CC and CD, including MIL-L-2104B and MIL-L-45199B or MIL-L-46152 and MIL-L-2104C provisions.	20 20W 30 50	48-02194-020 -021 -030 -050

*Per SAE J183 Recommended Practice: CC/CD = Meeting requirements of both CC and CD designation.

**Acceptable products available under this specification:

MFR	DESCRIPTION
SO	Chevron Delo 400 Motor Oil (Specify viscosity).
UNC	Guardol (Specify viscosity).
(B) ASP	Ashland HD (Specify viscosity).

WAS	CHG	BY	DATE
Job #35900	-	-	-
-220, -230, -240.	A	HJR	5-18-73
ASP, Ashland HD; 65393	B	SK	11-29-77

SPECIFICATIONS

(1) See table for ASTM description.

2. Sulphated ash content must not exceed 1.85%.

		DATE DRAWN			UNIT OF MEASURE
COMPILED	HJR	1-11-73			QUART
APPROVED	Rollins				

ns

Portland FREIGHTLINER CORPORATION Oregon 97208

C B

48-02195

Materials Specification

PRINT ISSUED	TITLE	PART NO.
	LUBRICANT, ENGINE OIL API TYPE SD	48-02195
LAST CHG. LTR B		SHEET 1 OF 1

CHG	BY	DATE	WAS
A			
B			

SCOPE This specification identifies moderate to heavy-duty diesel engine crankcase lubricant.

APPLICATION Engine crankcase lubricant, some main and auxiliary transmissions, etc. Light viscosity grades are used as hydraulic fluid for such items as hydraulic power steering systems.

SPECIFICATION NUMBERS

API ENGINE SERVICE DESIGNATION*	ASTM ENGINE OIL DESCRIPTION (1)	SAE VISCOSITY NUMBER	FREIGHTLINER SPECIFICATION NUMBER **
SD	Provides low temperature anti-sludge and anti-rust performance.	10	48-02195-010
		10W	-011
		20	-020
		20W	-021
		30	-030
		50	-050

CHG	BY	DATE	WAS
-	-	-	Job #85900
A	HJR	5-18-73	-310,-320,-321,-330,
			-350; J #A0418
B	HJR	11-28-73	Add -011; J#A0541

*Per SAE J183 Recommended Practice: SD = Primarily a gasoline engine service designation.

**Acceptable products available under this specification:

MFR	DESCRIPTION
UNC	Union '76 "Heavy Duty" (Specify viscosity).

SPECIFICATIONS

(1) See table for ASTM description.

2. Sulphated ash content must not exceed 1.85%.

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED	Rollins	1-11-73			QUART

Portland FREIGHTLINER CORPORATION Oregon 97208

E-183

RELEASE NO.	DESCRIPTION	DOCUMENT NO.
	ROD, ROUND, NYLATRON GS	48-02196
LAST REV LTR: C		SHEET 1 OF 1

LTR	RLSE NO.	BY	DATE	REVISION DESCRIPTION

LTR	RLSE NO.	BY	DATE	REVISION DESCRIPTION
C	325234	ERK	5-16-88	REDRAWN, ADD. -UC

SCOPE This specification identifies Nylatron GS round rod, a nylon molybdenum disulphide composition.

APPLICATION For parts requiring high wear resistance and low friction with little or no lubrication. A typical use is for hinge pins.

SPECIFICATION NUMBERS

NOMINAL DIAMETER	TOLERANCE ±		FREIGHTLINER SPECIFICATION NUMBER
1/16	.001		48-02196-000
3/32			-001
1/8			-002
3/16			-003
1/4			-004
5/16			-005
3/8			-006
1/2			-008
3/4			-007

C

SPECIFICATIONS

Material: A nylon molybdenum disulphide composition with the following properties:

PROPERTIES*	CONDITION	VALUE	ASTM TEST METHOD
Tensile Strength	73°F	10,000 - 14,000 psi	D638
Modulus of Elasticity	73°F	450,000 -600,000 psi	D638
Flexural Strength	73°F	16,000 - 19,000 psi	D790
Coefficient of Linear Thermal Expansion	in/in/°F	3.5×10^{-5}	D696
Water Absorption	Immersion 24 Hrs	.5 - 1.4%	D570
Color		Gray to Black Metallic	

*The properties are typical averages and will vary for different stock sizes as well as specific processing conditions.

7.8

DRAWN BY	ERK	DATE DRAWN			MASTER NO.
APVD BY	KCB	5-16-88		0B533	

FREIGHTLINER CORPORATION

6/22/8

48-2198

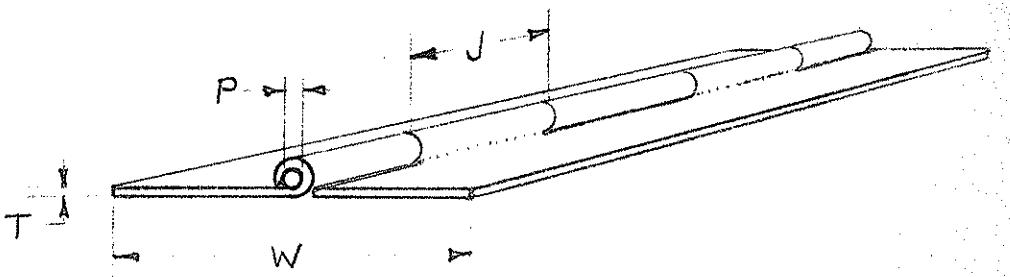
Materials Specification

PRINT ISSUED	TITLE	PART NO.
	HINGE, BUTT, STAINLESS STEEL	48-2198
LAST CHG. LTR.		SHEET 1 OF 1

SCOPE This specification identifies stainless steel butt hinge.

APPLICATION Mounting small doors and panels.

SKETCH



SPECIFICATION NUMBERS

W	T (INCHES)	P		J*	MANUFACTURER'S NUMBER		FREIGHTLINER SPECIFICATION NUMBER
					HDB		
3.50	.075	0.250		2.00	MS35829-9C		48-2198-350

* Joint length, except first is 1.00.

SPECIFICATIONS

1 Material: Leaves: Stainless Steel
Pin: Stainless Steel

2. Finish: Plain

3. Offset: None

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
—	—	—	J #A0445

ns

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED	Rollins	6-21-73			FT.

Portland FREIGHTLINER CORPORATION Oregon 97208

48-02199

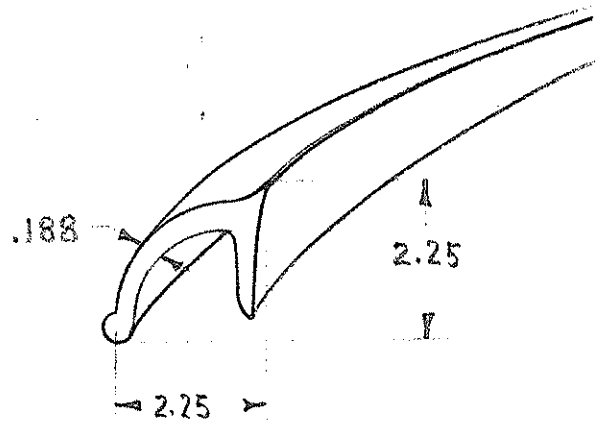
Materials Specification

PRINT ISSUED	TITLE	PART NO.
	EXTRUSION, RUBBER MOLDING CAB FENDER	48-02199
LAST CHG LTR.		SHEET 1 OF 1

SCOPE This specification identifies extruded rubber molding.

APPLICATION Fender on cab skirt.

SKETCH



SPECIFICATION NUMBERS

A x B NOM. SIZE	T THICKNESS		COLOR	MANUFACTURER'S NUMBER ① GRR		FREIGHTLINER SPECIFICATION NUMBER
2-1/4x2-1/4	3/16		WHT	[redacted]		48-02199-010
			BLK	GSX-178 **		-011

Large fender Rubber GSX 425 48-2199-021

SPECIFICATIONS

① Material: * - J200D2000 810A13B13C12F17Z
**- J200D2000 2BA810A13B13C12F17G

CHG	BY	DATE	WAS
			-

CHG	BY	DATE	WAS
—	—	—	J #A0472

ns

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED	Rollins	6-21-73			FT.

Portland FREIGHTLINER CORPORATION Oregon 97208

E-183

48-02200

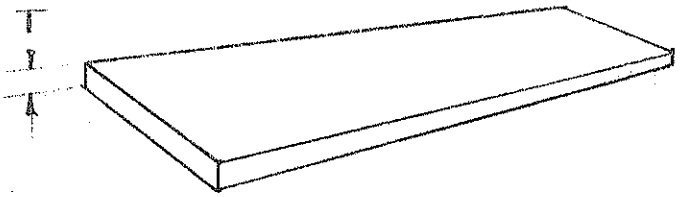
Materials Specification

PRINT ISSUED	TITLE	PART NO.
	SHEET, NEOPRENE SOLID, 40 DUROM.	48-02200
LAST CHG. LTR.		SHEET 1 OF 1

SCOPE This specification describes solid neoprene sheet of medium hardness.

APPLICATION General use, gaskets, cushioning pads, etc., requiring moderately firm material.

SKETCH



SPECIFICATION NUMBERS

T THICKNESS (INCHES)	COLOR		ASTM - D2000 SAE - J200 1	FREIGHTLINER SPECIFICATION NUMBERS*
1/16	BLK		2 BC 415	48-02200-006
1/8				-012
1/4				-025
3/8				-038
1/2				-050

* Dash number equals thickness in 1/100's of an inch.

SPECIFICATIONS

(1) Material: Neoprene (See Table)

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
—	—	—	J #A0594

ns

COMPILED	HJR	DATE DRAWN		MATERIAL	UNIT OF MEASURE
APPROVED	Jim B	6-21-73			SQ. FT.

48-02201

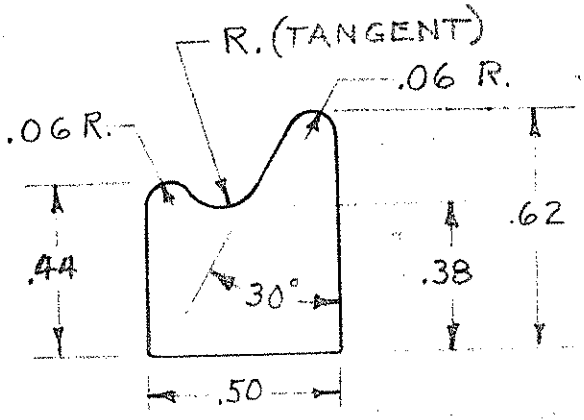
Materials Specification

PRINT ISSUED	TITLE	PART NO.
	EXTRUSION, DOOR SEAL CLOSED CELL NEOPRENE	48-02201
LAST CHG. LTR —		SHEET 1 OF 1

SCOPE This specification identifies a specific closed cell neoprene extrusion.

APPLICATION Baggage door seal

SKETCH



SPECIFICATION NUMBERS

	MATERIAL	MANUFACTURER'S NUMBER		FREIGHTLINER SPECIFICATION NUMBER
		KKH		
	(1)	E-5919		48-02201-000

SPECIFICATIONS

(1) Material: Neoprene, Closed Cell.

2. Finish: As extruded (except as per note 3).

3. Adhesive backed.

WAS	DATE	BY	CHG

WAS	DATE	BY	CHG
J #A0498	—	—	—

ns

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED	Rollins	7-3-73			FT.

Portland FREIGHTLINER CORPORATION Oregon 97208

48-02202

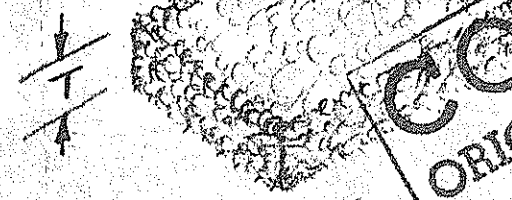
Materials Specification

PRINT ISSUED	TITLE	PART NO.
	HAIR, RUBBERIZED	48-02202
LAST CHG. LTR.		SHEET 1 OF 1

SCOPE This specification identifies latex coated curled animal hair with cotton mesh backing.

APPLICATION Anti-surge medium for air conditioner drain pan.

SKETCH



COPY ONLY
ORIGINAL BEING REVISED
CHECKED OUT BY
DATE 7-25-74

SPECIFICATION NUMBERS

T THICKNESS	DENSITY	COLOR	MANUFACTURER'S NUMBER		FREIGHTLINER SPECIFICATION NUMBER*
1.00	Medium	Optional	**		48-02202-100

* Dash number is thickness in 1/100's of an inch.

** Order by description as "Hair Flex" of required thickness. Normally available in 24 in. x 75 ft. rolls; green color.

SPECIFICATIONS

1. Material: Latex rubber coated curled cattle and hog hair with cotton mesh backing.

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
-	-	-	J #A0504

ns

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED	Rollins	7-12-73			SQ. FT.

Portland FREIGHTLINER CORPORATION Oregon 97208

E-183

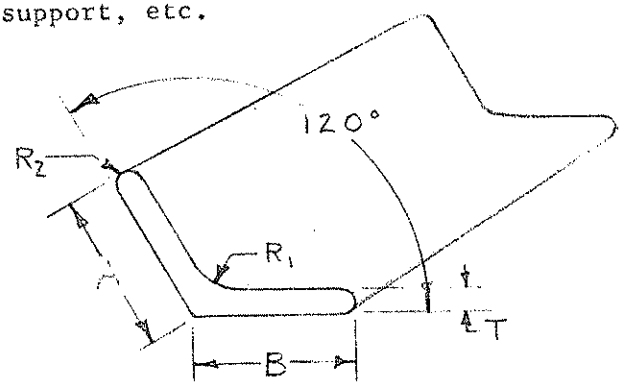
48-02204

PRINT ISSUED		TITLE	PART NO
		ANGLE, 120° EQUAL LEG EXTRUDED ABS	48-02204
LAST CHG LTR	–		SHEET 1 OF 1

SCOPE This specification identifies extruded ABS (acrylonitrile-butadiene-styrene) plastic angle.

APPLICATION Cab lining support, etc.

SKETCH



SPECIFICATION NUMBERS

A LEG (IN.)	B LEG (IN.)	T THICK. (IN.)	D ANGLE (DEG.)	R_1 RADIUS (IN.)	R_2 RADIUS (IN.)	DIE NUMBERS		FREIGHTLINER SPECIFICATION NUMBER
.62	.62	.12	120	.25	.06			48-02204-000

SPECIFICATIONS

1. Material: Extruded ABS plastic.
2. Finish: As extruded.
3. Color: Black.
4. Flammability: Must pass minimum requirements of FMVSS #302.

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
—	—	—	J#C0513

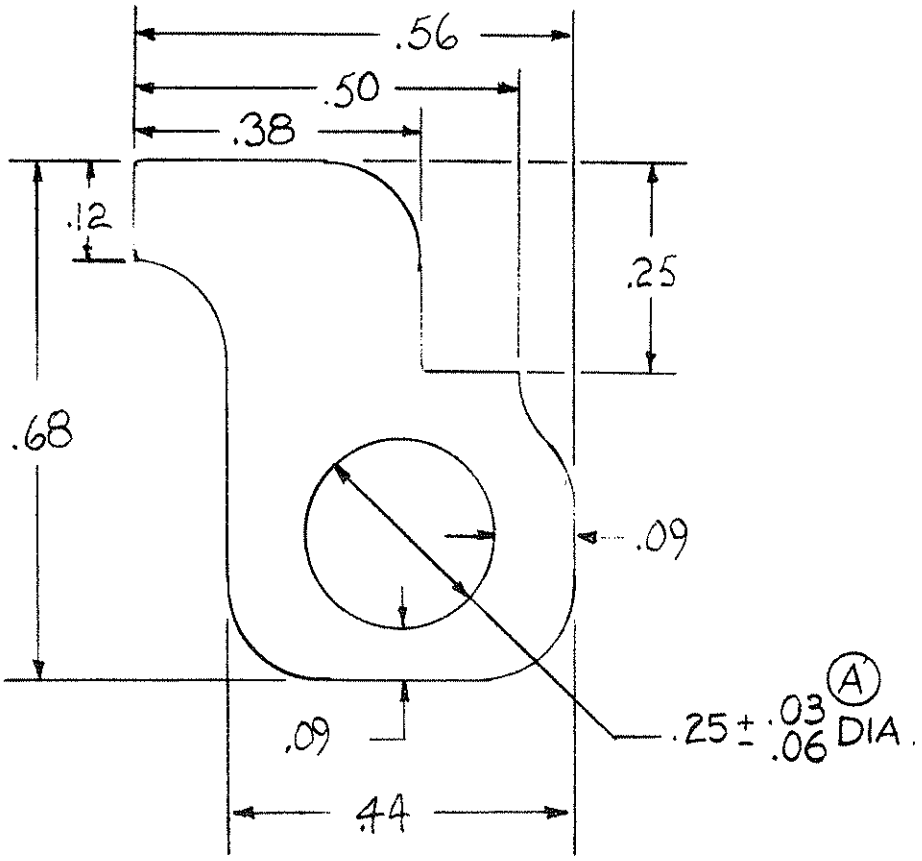
COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED	Rollins	9-27-73			FT.

Portland FREIGHTLINER CORPORATION Oregon 97208

ORIGINAL JOB NO.	TITLE	PART NO.
C1250	SEAL PANEL DOOR BAGGAGE C.O.E.	48-2205
LAST CHG LTR: A		SHEET 1 OF 1

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION
A	10497A	TTR	3-25-91	Added +.03 -.06



All unspecified radii: .12

Tolerance: ±.03

Material: Closed Cell Neoprene

Durometer: "MEDIUM"

Finish: As Extruded

COMPILED	TJC	DATE DRAWN			
APPROVED	TJC				

48-02206

Materials Specification

PRINT ISSUED		TITLE	PART NO.
		UNDERCOAT	48-02206
LAST CHG. LTR.	C		SHEET 1 OF 1

CHG	BY	DATE	WAS	JOB NO.
C	TAG	7/14/82	Add ASP Alt	N0005

SCOPE This specification identifies a high solids composition asphaltic airless sprayable coating.

APPLICATION Insulating undercoating for cab deck and other vehicle surfaces exposed to wheel wash; also, inside door panels, etc.

SPECIFICATION NUMBERS

MFR'S NO.			UNIT OF MEASURE (2)	FREIGHTLINER SPECIFICATION NUMBER
ASP	ABM	MJW		
121B	3121	627	GL.	48-02206-000
			LR.	-001

CHG	BY	DATE	WAS	JO3 NO.
—	—	—	—	A0539
A	CHB	7/6/79	Added Spec. & Two Vendors	C1090
B	TN	8/3/81	Added -1	E0684

SPECIFICATIONS

1. Federal Spec. TT-C-520a Sect. 1-4, June 6, 1963.

kh

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED		10-07-74			(2)

Portland FREIGHTLINER CORPORATION Oregon 97208

C B A M/F

E-183

DRAWN	RDF	TITLE	DRAWING NUMBER
APPRV	PWS	HYDRAULIC FLUID	48-02207
DATE	09-01-87		
CADAM ORIGINAL		FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 2 / CHG. LTR. D

UNLESS OTHERWISE NOTED, DIMENSIONS ARE IN INCHES | UNIT OF MEASURE: NOTED

SCOPE: THIS SPECIFICATION IDENTIFIES A TYPE OF FLUID FOR TRANSMITTING HYDRAULIC PRESSURES UP TO 5000 PSI, AT LOW VELOCITY.

APPLICATION: CAB TILT SYSTEM OPERATING FLUID

SPECIFICATION NUMBERS

DESCRIPTION	MFR SYMBOL	TEMP RANGE	SPECIFICATION	UNIT OF MEASURE	FREIGHTLINER SPECIFICATION NUMBER
CHEVRON HANDY OIL #15 MOBILE DTE 11 TELLUS 22 EXXON NUTO-H, TORQUE FLUID 32 UNION SPECIAL ALTERNATE; AUTOMATIC TRANSMISSION FLUID	SO MBL SLO EXX UNC	-10° F (-23.3° C) AND ABOVE	1	QT	48-02207-000
				LR	48-02207-001
AIRCRAFT HYDRAULIC OIL MIL-H-5606C OR ENGINEERING APPROVED EQUIVALENT		BELOW -10° F (-23.3° C)	1	QT	48-02207-100
				LR	48-02207-101
1537 AIRCRAFT HYDRAULIC OIL 15 UNION ARCTIC LOW POUR (-65) HYDRAULIC FLUID 04617 FILMITE 530 HYDRAULIC OIL	TXA UNC FMO	160° F (71° C) TO -30° F (-34.4° C)	2	QT	48-02207-200
				LR	48-02207-201

1 SPECIFICATION: PER MANUFACTURER'S SPECIFICATION

2 SPECIFICATION:

THIS HYDRAULIC FLUID IS COMPARABLE TO, BUT NOT NECESSARILY CERTIFIED TO MILITARY SPECIFICATION MIL-H-5606A, B OR C. SECTIONS 1 THRU 6 APPLY AS NOTED.
SECTION 1: ALL
SECTION 2: ALL

CHG	JOB NO	DATE	BY	REVISION
D	P5968D	09-01-87	RDF	REVISED AND REDRAWN

DRAWN	RDF	TITLE HYDRAULIC FLUID	DRAWING NUMBER 48-02207
APPRV	PWS		
DATE	09-01-87	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 2 OF 2 / CHG. LTR. D
CADAM ORIGINAL			
UNLESS OTHERWISE NOTED, DIMENSIONS ARE IN INCHES		UNIT OF MEASURE: NOTED	

2 SPECIFICATION: CONTINUED

SECTION 3: ALL EXCEPT 3.4.3, ANTI-WEAR AGENT, AND 3.5.8, SOLID PARTICLE CONTAMINATION. THESE SUB-SECTIONS SHALL FOLLOW GOOD COMMERCIAL PRACTICE FOR FLUIDS INTENDED FOR MOBILE HYDRAULIC USE.

SECTION 4: TESTING AND RESULTS ON REQUEST BY FREIGHTLINER

SECTION 5: PACKAGING AND MARKING AS REQUIRED BY FREIGHTLINER. ALL CONTAINERS SHALL BE MARKED WITH NAME OF MANUFACTURER, MANUFACTURER'S DESIGNATION FOR FLUID, MANUFACTURING LOCATION, LOT NUMBER, DATE OF MANUFACTURE AND FREIGHTLINER SPECIFICATION NUMBER.

SECTION 6: SUBSECTIONS 6.1.1, 6.1.2, 6.2, 6.2.1 AND 6.3.1. PRODUCTS MUST BE LISTED ON THIS SPECIFICATION TO BE ACCEPTABLE.

CHG	JOB NO	DATE	BY	REVISION
D	P5968D	09-01-87	RDF	REVISED AND REDRAWN

48-02209

PRINT ISSUED	TITLE	PART NO.
	TAPE, NEOPRENE FOAM SINGLE FACE, CLOSED CELL	48-02209
LAST CHG. LTR.		SHEET 1 OF 1

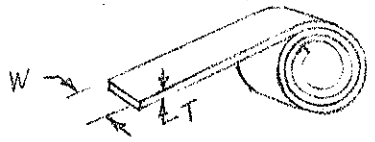
WAS

CHG	BY	DATE

SCOPE This specification identifies a high density, closed-cell, self extinguishing, high recovery foamed neoprene tape with single face adhesive.

APPLICATION Cab window glazing

SKETCH



SPECIFICATION NUMBERS

T (INCHES)	W (INCHES)	COLOR		MANUFACTURER'S NUMBER PMC		FREIGHTLINER SPECIFICATION NUMBER*
.062	3.00	BLK		CR10SF Series **		48-02209-626

*Dash number: First two digits specify thickness in mils; last digit is a width code.
**Add size description when ordering.

WAS J#A0550

CHG	BY	DATE

SPECIFICATIONS

1. Basic material: Foamed Neoprene with single face
2. Physical Properties:
   - Average density, lb/ft^3 ------- 10
   - Flammability ------- Self extinguishing
   - Cell structure ------- Closed
   - Compression deflection, lb ---- 2 (max.)
   - Service Temperature Range, F^o - -35 to +150

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED	Jims	12-14-73			FT

Portland FREIGHTLINER CORPORATION Oregon 97208

48-02210

PRINT ISSUED	TITLE	PART NO.
	SHEET, POLYETHYLENE, HIGH DENSITY	48-02210
LAST CHG. LTR.		SHEET 1 OF 1

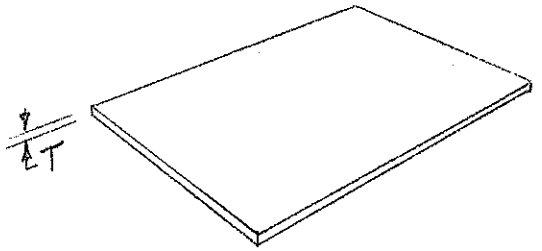
WAS

CHG	BY	DATE

SCOPE This specification describes high density linear polyethylene sheet.

APPLICATION Protective shield for back of cab.

SKETCH



SPECIFICATION NUMBERS

T THICKNESS	COLOR		MANUFACTURER'S DESIGNATION WLP		FREIGHTLINER SPECIFICATION NUMBER*
1/4	RED GRN NATURAL		"Ethylux" (Specify Thickness and color)		48-02210-252 -255 -259

*Dash number: First two digits express thickness in hundreaths of an inch. Final digit is color code.

SPECIFICATIONS

1. MATERIAL: High density linear polyethylene sheet.

WAS J#A0554

CHG	BY	DATE

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED		12-19-73			SQ. FT.

Portland FREIGHTLINER CORPORATION Oregon 97208

E-183

48-02211

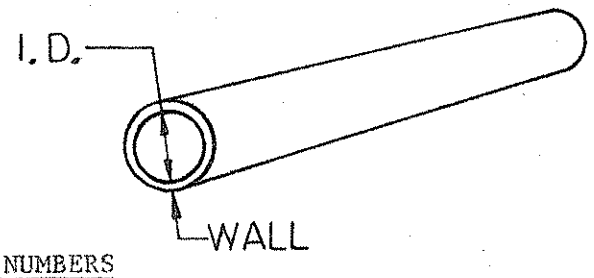
WAS	DATE	BY	CHG

PRINT ISSUED	TITLE	PART NO.
	TUBING, HEAT SHRINKABLE	48-02211
LAST CHG. LTR.		SHEET 1 OF 1

SCOPE This specification identifies semirigid, high shrink ratio tubing for moistureproof incapsulation and one step molding.

APPLICATION Moisture protection for chassis wiring.

SKETCH



SPECIFICATION NUMBERS

* I.D.	WALL	COLOR	MANUFACTURER'S NUMBER RCT	FREIGHTLINER SPECIFICATION NUMBER
1/8	.038	BLK	SCL	48-02211-012
3/16	.043			-019
1/4	.047			-025
3/8	.050			-038
1/2	.055			-050
3/4	.065			-075
1	.070			-100

WAS	DATE	BY	CHG
J#A0561			

SPECIFICATIONS

1. Material: Radiation crosslinked polyolefins.
2. Typical Properties:

Dielectric strength	1100 volts/mil
Tensile	2500 psi
Elongation	400%

INSTALLATION NOTES

1. Heat shrinks between 17% and 42% of its diameter with the use of hot air or infrared heating tools.
*2. Use the largest size which fits snugly over the component being covered.

COMPILED	HJR	DATE DRAWN		MATERIAL	UNIT OF MEASURE
APPROVED		12-28-73			FT.

48-02212

Materials Specification

PRINT ISSUED	TITLE	PART NO.
	ALCOHOL, BUTYL	48-02212
LAST CHG. LTR.		SHEET 1 OF 1

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
			J# A0653

SCOPE This specification identifies commercial grade butyl alcohol.

APPLICATION Lacquer thinner.

SPECIFICATION NUMBERS

DESCRIPTION	FREIGHTLINER SPECIFICATION NUMBER
Alcohol, Butyl	48-02212-000

SPECIFICATIONS

1 Material: Butanol, Commercial grade for industrial solvent.

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED		7-19-74			GAL.

48-02214

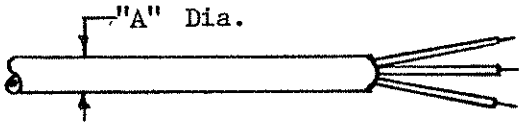
Materials Specification

PRINT ISSUED	TITLE	PART NO.
	CABLE, 3 CONDUCTOR	48-02214
LAST CHG. LTR. C		SHEET 1 OF 1

SCOPE This specification identifies a 3 conductor electrical cable.

APPPLICATION Power cable for the computers on the air brake system.

SKETCH



SPECIFICATION NUMBERS

GAUGE AWG STRANDED	CONDUCTORS	"A" DIA.	COLOR CODE	MANUFACTURER'S NUMBER	FREIGHTLINER SPECIFICATION NUMBER
16	3	.327	Yellow White Red	(PRS) 16-3 131805 (1)	48-02214-000
14	3		Brown Yellow Green	(1)	48-02214-001

ENGINEERING NOTES

(1) (C) Cable must meet SAE standard J1128 , type SXL, standard duty, thermosetting crosslinked polyethelene insulation, braidless.

Cable Cover: Nylon overbraid natural color - 210 denier or .030 thick, black PVC, minumum two inch lay.

Cable must pass Federal Motor Vehicle Safety Standard #302 , Flammability of Interior Materials.

CHG	WAS	JOB NO.

CHG	BY	DATE	WAS	JOB NO.

CHG	BY	DATE	WAS	JOB NO.
A	BOBK	3-21-77	ADD (PRS) 163131805	63591
B	SB	10-27-77	Added 48-02214+1	65182
C	DS	4-16-81	REVISED NOTE (1)	0190A

kh

COMPILED	D.LeL.	DATE DRAWN		MATERIAL	UNIT OF MEASURE
APPROVED	CR	10-08-74		(1)	FT.

Portland FREIGHTLINER CORPORATION Oregon 97208

C A M/F

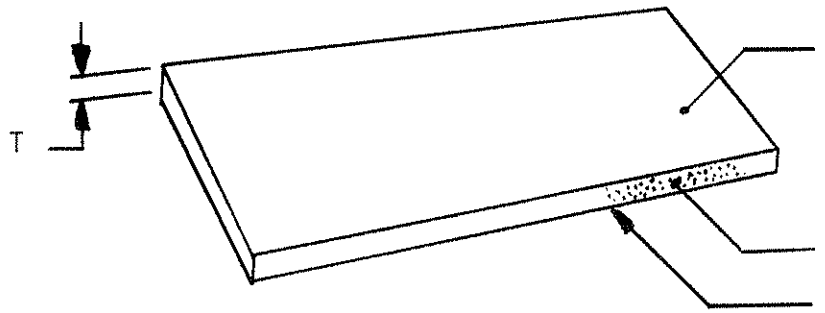
E-183

ORIGINAL JOB NO.	TITLE	PART NO.
A0688	FOAM, ACOUSTIC LINER	48-02215
LAST CHG LTR H		SHEET 1 OF 2

SCOPE: This specification identifies a composite sheet of flexible open cell polyester polyurethane foam with fire retardant additives with an impervious film facing, with or without adhesive backing.

APPLICATION: Sound absorption on plane and simply curved surfaces.

SKETCH:



SPECIFICATION NUMBERS:

T THICKNESS (IN.) ±10%	FACING THICKNESS (IN.)	FILM TYPE	NRC*	ADHESIVE BACK	MANUFACTURER'S NUMBER SCP (3)	BFD		FREIGHTLINER SPECIFICATION NUMBER
.50	.001	(1)	.54	NO	**			48-02215-050
1.00	.001	(1)	.72	NO	**	FTMM-100		-100
.50	.001	(1)	.54	YES	**			-550
1.00	.001	(1)	.72	YES	**			-600
.50	.0015	(2) (4)	.72	NO	***			-900

* NRC - Noise Reduction Coefficient (average of at 250, 500, 1000, 2000 Hz.)

** Order by name, "Tufcote R Acoustical Foam (TAF)" and thickness desired. Available in rolls, sheets, and die cut parts. Alternate material: Tufcote R Acoustical Foam-E (TAFE-AP).

*** Order by name, "Tufcote Acoustical Foam (TAFE-TEDLAR-CP) and thickness desired.

Notes: (1) Aluminized Polyester Film
(2) Black Polyvinyl Fluoride Film
(3) R = 3.85 hr. ft.^{2} °F/BTU For 1" Foam.
(4) Backing to be .001 thick clear polyester film.

SPECIFICATIONS:

1. Construction:
   Foam: Open cell polyester polyurethane manufactured to selected permeability specifications, with fire retardant additives. Color to be black.
   Backing: Self-adhesive, with 80 lb. kraft polycoated release liner, peel adhesion 60 oz./in. min. (when specified).
   Facing: Film as specified above, to be bonded to one face by the liquid urethane during foam manufacturing process.
2. Must meet Federal Motor Vehicle Safety Standard #302 (DOT).
3. Meets ASTM D1692 (Flammability) and D2859-70T (Pill Test).

COMPILED	CHB	DATE DRAWN			
APPROVED		9/25/80			SQ.FT.

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION
H2	97533	MS	3-24-81	ADDED NOTE (4)
H3	97533	MS	3-24-81	REVISED NOTE (3)

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION
F	C1676	CHB	9/25/80	Added -900, Revised **
-	-	-	-	Redrawn FROM 1 OF 1 TO 1 OF 2
G	97521	MS	1-28-81	SEE SHT 2 OF 2
H	97553	MS	3-24-81	FROM 1.00 TO .50

ORIGINAL JOB NO.	TITLE	PART NO.
A0688	FOAM, ACOUSTIC LINER	48-02215
LAST CHG LTR H		SHEET 2 OF 2

SPECIFICATIONS, Continued (G)

4. Width of roll and sheet to be $36.00^{+1.00}_{-0.00}$ inches.

5. Foam: TAF; Open Cell Polyester Polyurethane
TAF-E; Open Cell Polyester Polyurethane

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION
F	A1676	CHB	9/25/80	ADDED SHEET 2
G	97521	MB	1-28-81	CHG 35.50 ± .05 TO 36.00 ± 1.00
H	97553	MB	3.24.81	SEE SHT 1 OF 2

COMPILED	CHB	DATE DRAWN			
APPROVED		9/25/80			

H G

48-02216

Materials Specification

PRINT ISSUED		TITLE	PART NO.
		TAPE, POLYESTER SEALANT	48-02216
LAST CHG. LTR.	A		SHEET 1 OF 1

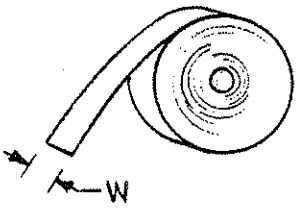
CHG	BY	DATE	WAS	JOB NO.

CHG	BY	DATE	WAS	JOB NO.
—	—	—	—	A0688
A	CHB	9/25/80	Added -201	C1676

SCOPE This specification identifies adhesive backed polyester sealant tape. [illegible] unit tape.

APPLICATION Sealing against dust, moisture and other fluids.

SKETCH



SPECIFICATION NUMBERS

W WIDTH (IN.)	T THICKNESS (IN.)*	COLOR			MANUFACTURER'S NUMBER	FREIGHTLINER SPECIFICATION NUMBER
2.00	.002	Aluminized				48-02216-200
2.00	.002	Clear				48-02216-201

*Does not include adhesive backing.

SPECIFICATIONS

1. Material: Polyester film with pressure sensitive backing with or without aluminizing as specified.

kh

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED	CRg	10-07-74			FT.

Portland FREIGHTLINER CORPORATION Oregon 97208

E-183

A

48-2217

Materials Specification

PRINT ISSUED		TITLE	PART NO.
		CONDUIT, CONVOLUTED NYLON	48-2217
LAST CHG. LTR.	A		SHEET 1 OF 1

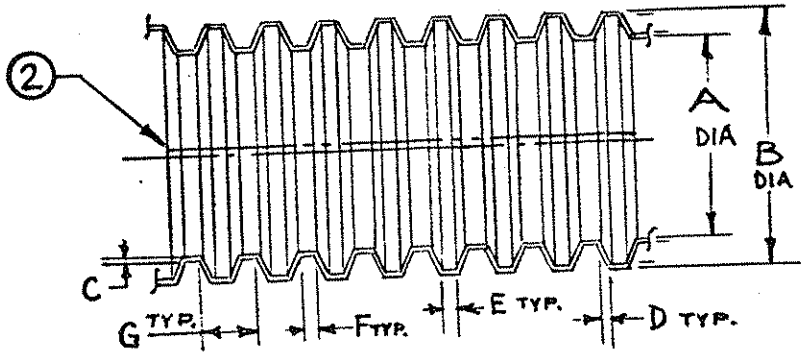
CHG	BY	DATE	WAS	JOB NO

CHG	BY	DATE	WAS	JOB NO
—	—	—	—	A0740
A	HJR	5-6-76	Add PAC Nos.	A0813

SCOPE This specification identifies a convoluted nylon tubing.

APPLICATION Protective covering for electric wiring.

SKETCH



SPECIFICATION NUMBERS

NOM. I.D.	A	B	C	D	E	F	G	MANUFACTURER'S NUMBER MQ	PAC		FREIGHTLINER SPECIFICATION NUMBER
1/4	.260 .280	.380 .400	.013 .018	.01 .02	.05 .07	.02 .03	.10 .15	MQN-2500	—		48-2217-025
3/8	.410 .430	.538 .558	.015 .020	.01 .03	.05 .08	.02 .04	.10 .15	-3750	68236-R		-038
1/2	.490 .510	.670 .695	.013 .018	.01 .03	.06 .09	.02 .04	.10 .15	-5000	68237-R		-050
5/8	.639 .659	.816 .836	.015 .020	.01 .03	.05 .09	.02 .04	.10 .15	-6250	68238-R		-062 X
3/4	.752 .772	.924 .944	.015 .020	.01 .03	.04 .07	.02 .04	.10 .15	-7500	68240-R		-075
1	.910 .930	1.080 1.180	.025 .030	.01 .03	.08 .11	.01 .03	.12 .17	-10000	68243-R		-100
1-1/4	1.280 1.200	1.500 1.520	.025 .030	.02 .04	.07 .10	.01 .03	.15 .20	-12500	—		-125
1-1/2	1.480 1.500	1.760 1.780	.025 .030	.02 .04	.07 .10	.01 .03	.15 .20	-15000	—		-150

SPECIFICATIONS

(1) Material: Nylon, black
ASTM D-789-72 Type II Grade 3

(2) Slit, full length

kh

COMPILED	D.L.	DATE DRAWN			UNIT OF MEASURE
APPROVED	CKB	2-28-75			FT.

Portland FREIGHTLINER CORPORATION Oregon 97208

A M/T

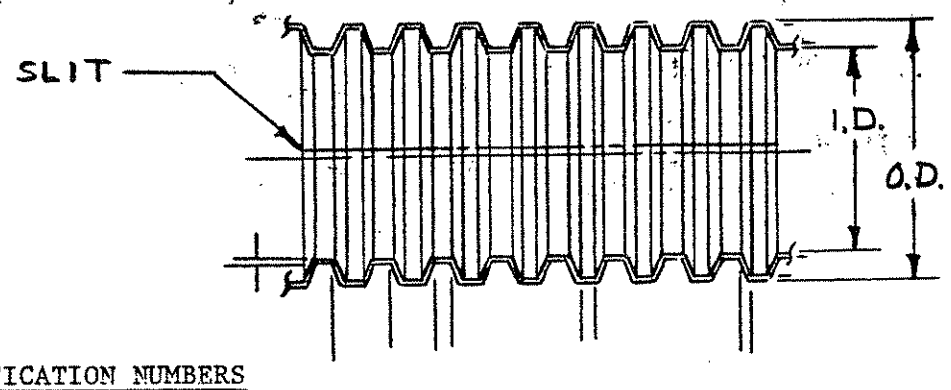
Materials Specifications

PRINT ISSUED		TITLE	PART NO.
		CONDUIT, CONVOLUTED Polyethylene	48-2218
LAST CHG. LTR.	C		SHEET 1 OF 1

SCOPE This specification identifies a flame retardant convoluted polyethylene tubing.

APPLICATION Protective covering for electric wiring.

SKETCH



SPECIFICATION NUMBERS

NOM. I.D.	MAX. O.D.		COLOR	SLIT	MANUFACTURER'S NUMBER PAC	MANUFACTURER'S NUMBER MQ	FREIGHTLINER SPECIFICATION NUMBER
.350	.510		GRY	YES	68275 R		48-2218-035
.413	.594		GRY	YES	68136 R		-041
			GRY	NO	68170 R		-042
.500	.695		GRY	YES	68137 R	MQF-5000 *	-050
			GRY	NO	68706 R	MQF-5000 *	-051
.625	.830		GRY	YES	68461 R		-062
			GRY	NO	68763 R		-063
.750	.980		GRY	YES	68460 R		-075
			GRY	NO	68765 R		-076
1.000	1.270		GRY	YES	68242 R		-100
			GRY	NO	68764 R		-101

SPECIFICATIONS

* Must specify whether slit or unslit when ordering.

1. Material: Flame retardant polyethylene.
2. Must pass Federal Motor Vehicle Safety Standard #302, Flammability of Interior Materials.

CHG	BY	DATE	WAS	JOB NO.
—	—	—	—	A0749
A	HJR	9-29-75	Add PIX	A0777
B	RLE	4-6-76	Added - 51	C0796
C	HJR	5-26-76	Add -063,-101,PAC NOS.	C0641

CHG	BY	DATE	WAS	JOB NO.

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED		6-10-75			FT.

Portland FREIGHTLINER CORPORATION Oregon 97208

M/F

E-183

RELEASE NO.	DESCRIPTION	DOCUMENT NO.
P*A078-23	GASKET-CORK/RUBBER, PSAC BACK	48-02221
LAST REV LTR: B		SHEET 1 OF 1

LTR	RLSE NO.	BY	DATE	REVISION DESCRIPTION

LTR	RLSE NO.	BY	DATE	REVISION DESCRIPTION
B	P*A078-23	ERK	06/06/88	REVISED & REDRAWN

SCOPE

THIS SPECIFICATION IDENTIFIES A RUBBER/CORK COMPOSITION WITH PRESSURE SENSITIVE BACKING AND RELEASE PAPER.

APPLICATION

GASKETS WITH HIGH RESILIENCE AND LOW COMPRESSION SET.

SPECIFICATION NUMBERS

THICKNESS (INCH)	FREIGHTLINER SPECIFICATION NUMBER
.032	48-02221-032 —
.060	-060

SPECIFICATIONS:

MATERIAL:

RUBBER BASE : SBR

FILLER : CORK PARTICLES

PHYSICAL PROPERTIES:

SPECIFIC GRAVITY - - - - - - - 0.77 - 0.83

HARDNESS, SHORE A - - - - - 50±5

COMPRESSION @ 400 P.S.I. - - 30% - 40%, RECOVERY 80% MIN

TENSILE STRENGTH - - - - - - 100 P.S.I. MIN

TEMPERATURE RANGE - - - - - -30°C TO 120°C (-22°F TO 248°F)

DRAWN BY	ERK	DATE DRAWN			MASTER NO.
APVD BY	KCB	06/06/88			

FREIGHTLINER CORPORATION

48-02222

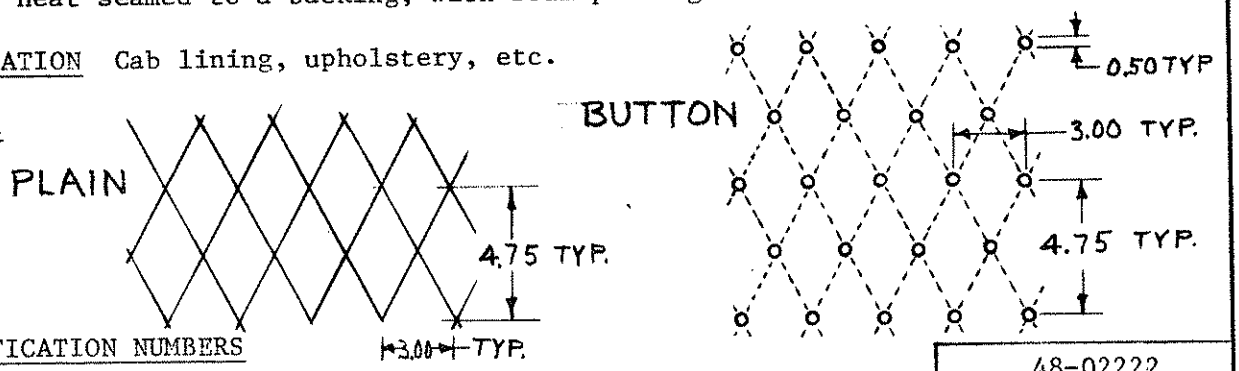
Materials Specification

PRINT ISSUED		TITLE	PART NO.
		FABRIC, VINYL (NAUGAHYDE) 32 OZ., QUILTED	48-02222
LAST CHG. LTR.	D		SHEET 1 OF 1

SCOPE This specification identifies a lightly textured polymeric vinyl coated fabric heat seamed to a backing, with foam padding between.

APPLICATION Cab lining, upholstery, etc.

SKETCH



SPECIFICATION NUMBERS

PATTERN & COLOR	FACING MFR'S. NO UNR	FACING FREIGHTLINER NUMBER	QUILTED PRODUCT MANUFACTURER'S NUMBER CMO	48-02222 DASH NUMBER DIAMOND PLAIN	DIAMOND BUTTON
GLADSTONE					
Rawhide	GE-75F	48-2172-575	Use	-075	-275
Turftan	GE-63F		F/L	-063	
Avocado	GE-64F		Number	-064	
ROGUE			For		
Crimson	RU-71F	48-2172-771	Purchasing	-571	-771
Rawhide	RU-73F	-773		-573	-773
Blue	RU-78F	-778		-578	-778
Walnut	RU-82F	-782		-582	-782
Buckskin	RU-34F	-784		-584	-784
Spruce	RU-85F	-785		-585	-785
Black	RU-81F	-781		-581	—
Indian Red	RU-75F			-575	

SPECIFICATIONS

1. MATERIAL:

   Face: Expanded vinyl coated fabric 32 oz./yd.^{2} (1060 g/m^2), per Facing Mfr's No. (UNR) in the table.

   Back: "QUILTON" (a non-woven Dacron, per Mfr's Spec.)

   Padding: Soft, resilient, open cell polyurethane foam, 3/8" (9.5 mm) thick, 1.45 lb./ft.^{3} (23.2 kg/m^3) density, indent load of 33.

2. FINISH: Lightly textured surface with anti-static slip finish, mildew resistant backing and facing, oil resistant facing.

3. FLAMMABILITY: Must pass Federal Motor Vehicle Safety Standard No. 302, Flammability of Interior Materials.

4. Meets Federal Spec. CCC-A-680a with treatments: A-1 Flame Resistance; B Mildew Resistance; C Oil Resistance.

5. Normally supplied in sheets 45"X56" (1.14X1.42m) or 54"X98" (1.37X2.50m).

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED		10-8-75			SQ. FT.

Portland FREIGHTLINER CORPORATION Oregon 97208 M/F

A B C D

CHG	BY	DATE	WAS	JOB NO
D1	WTM	5-20-82	ADDED-063,064	0964B
D2	WTM	5-20-82	ADDED-575	0964B

CHG	BY	DATE	WAS	JOB NO
—	—	—	—	C0674
A	HJR	4-22-76	CMO (Mfr.) Added	A0804
B	HJR	6-18-76	Added-584,-784	A0818
C	SK	10-31-77	Added-781, 581	65214

E-183

DRAWN	ERK	TITLE	DRAWING NUMBER
APPRV	KCB	CABLE-LOW TENSION, SXL THERMOSET INSULATION	48-02223
DATE	07/30/90	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 3 / CHG. LTR. J
CATIA ORIGINAL			

SCOPE: THIS SPECIFICATION IDENTIFIES A CHEMICALLY CROSSLINKED POLYETHYLENE INSULATED CABLE FOR USE IN LOW TENSION APPLICATIONS.

APPLICATION: AUTOMOTIVE ELECTRICAL WIRING, EXCEPT THE ENGINE STARTER POWER CIRCUIT, AND BATTERY INTERCONNECTION AND GROUNDING.

WIRE SIZE		COLOR* ⚠1	STRANDS			MIN CONDCT AREA (MM^2)	NOM OD OF CONDCT (MM)	MIN WALL INSUL (MM)	OD MAX (MM)	FREIGHTLINER SPECIFICATION NUMBER
MM^2	REPLCS		NO	NOM SIZE AWG	NOM SIZE MM					
13.0	6 GA	**	37	21	0.66	12.16	4.57	0.98	8.47	48-02223-06X
8.0	8 GA		19	21	0.71	7.23	3.50	0.76	6.10	-08X
5.0	10 GA		19	23	0.57	4.65	2.81	0.73	5.30	-10X
3.0	12 GA		19	25	0.45	2.91	2.23	0.66	4.57	-12X
2.0	14 GA		19	27	0.36	1.85	1.78	0.62	3.94	-14X
1.0	16 GA		19	29	0.28	1.12	1.38	0.57	3.33	-16X
0.8	18 GA		16	30	0.26	0.76	1.18	0.53	3.00	-18X

ENGINEERING NOTES:

* WHITE IS FREIGHTLINER'S STANDARD COLOR FOR SXL CABLE. NON-STANDARD CABLE SPECIFICATIONS ARE FOR SPECIAL APPLICATIONS ONLY, AND REQUIRES ELECTRICAL ENGINEERING APPROVAL.

** FINAL DIGIT OF MATERIAL SPECIFICATION DASH NUMBER "X" INDICATES THE COLOR OF THE INSULATION AS FOLLOWS:
BLACK 0 BROWN 1 RED 2 ORANGE 3 YELLOW 4 DK GRN 5
LT BLUE 6 PINK 7 GREY 8 WHITE 9
EXAMPLE; 48-02223-109 SPECIFIES A 10 GA WHITE CONDUCTOR.

J ⚠1 FOR ADDITIONAL COLORS:
USE 48-25259 TO SPECIFY THE FOLLOWING ADDITIONAL SOLID COLORS:
DK BLUE 0 LT GRN 1 PURPLE 2 TAN 3
EXAMPLE; 48-25259-183 SPECIFIES A 18 GA TAN CONDUCTOR.

USE 48-25260 TO SPECIFY THE FOLLOWING COLOR WITH WHITE STRIPE:
BLACK 0 LT GRN 1 RED 2 TAN 3 PURPLE 4 DK GRN 5
LT BLUE 6 PINK 7
EXAMPLE; 48-25260-080 SPECIFIES A 8 GA BLACK WITH WHITE STRIPE CONDUCTOR.

CHG	JOB NO	DATE	BY	REVISION
J	PA2042-79	06/05/97	DAJ	REVISED AND REDRAWN ON CATIA, ADDED ADD'L COLORS

DRAWN	ERK	TITLE	DRAWING NUMBER	
APPRV	KCB	CABLE-LOW TENSION, SXL THERMOSET INSULATION	48-02223	
DATE	07/30/90	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 2 OF 3	CHG. LTR. J
CATIA ORIGINAL				

SPECIFICATIONS:

1. CABLE MUST CONFORM TO ALL APPLICABLE PROVISIONS OF SAE J1128, TYPE SXL GENERAL PURPOSE, CROSSLINKED POLYETHYLENE, INSULATED EXCEPT THE FOLLOWING:

   OIL ABSORPTION - USE ASTM OIL #2.
   - 10% MAXIMUM CABLE DIAMETER INCREASE.

   HEAT AGE TEST - TEMPERATURE 165°C.

2. CONDUCTORS: THE CONDUCTORS SHALL BE BARE, ANNEALED, COPPER WIRE. BUNCHED STRANDED IN ACCORDANCE WITH SAE J1128. NO SPLICING OF STRANDED CONDUCTOR AS A WHOLE IS PERMITTED. HOWEVER, THERE MAY BE SPLICES IN THE INDIVIDUAL STRANDS PROVIDED THE BUNDLE SIZE IS NOT ALTERED.

3. PROPERTIES:

   3.1 PROPERTIES OF THE CONDUCTOR

   3.1.1 THE CONDUCTORS SHALL MEET ALL REQUIREMENTS OF SAE J1128 WITH WIRE SIZE AND STRANDING.

   3.1.2 BEFORE STRANDING-THE WIRE MUST MEET ALL REQUIREMENTS OF ASTM B 3 FOR TENSILE STRENGTH, ELONGATION, RESISTIVITY, DIMENSION AND FINISH.

   3.2 PROPERTIES OF THE INSULATION

   3.2.1 PHYSICAL PROPERTIES OF THE INSULATION AS REMOVED FROM THE CABLE.

3.2.1.1 TENSILE STRENGTH	TEST METHOD	VALUE
ORIGINAL MPA (psi)	ASTM D412	10.34 (1500) MIN
HEAT AGE(% OF ORIGINAL TESTED VALUE)		80 MIN

   3.2.2 TESTING

   3.2.2.1 TENSILE STRENGTH AND ELONGATION TESTS WILL BE CONDUCTED WITH A CROSS-HEAD SPEED OF 500mm (20") PER MINUTE.

   3.2.2.2 ALL TENSILE AND ELONGATION TEST SAMPLES WILL BE CONDITIONED AT 23°C FOR AT LEAST 16 HOURS PRIOR TO TESTING.

   3.2.2.3 HEAT AGING CONSISTS OF CONDITIONING TEST SPECIMENS IN AN OVEN FOR 7 DAYS (168 HRS) AT 165°C (CORE REMOVED).

   3.3 CABLE PERFORMANCE REQUIREMENTS

   THE FINISHED CABLE SHALL MEET THE PREFORMANCE REQUIREMENTS OF SAE J1128, TYPE SXL.

CHG	JOB NO	DATE	BY	REVISION
J	PA2042-79	06/05/97	DAJ	REVISED AND REDRAWN IN CATIA, ADDED ADD'L COLORS

3.4 NO SEPARATORS ARE PERMITTED.

3.5 STRIP FORCE

A MINIMUM STRIP FORCE OF 20N (4.5 LB) IS REQUIRED TO REMOVE 50.8MM (2 IN) OF INSULATION FROM THE CORE. INSULATION SHALL NOT BOND TO CONDUCTORS.

3.6 SOLDERABILITY

THE CORE OF THE FINISHED CABLE MUST REMAIN FREE OF CONTAMINANTS AND OXIDATION FOR SOLDERABILITY REASONS. THE FOLLOWING TEST WILL BE USED TO EVALUATE SOLDERABILITY OF THE XLPE CABLE:

CABLE STRIPPED APPROXIMATELY 25MM (1 IN) WILL BE IMMERSED 12MM (1/2 IN) INTO AN ACTIVATED ROSIN FLUX (ALPHA METALS #711 OR EQUIVALENT) FOR 3 SECONDS AND THEN IMMERSED FOR 2 SECONDS IN MOLTEN SOLDER 260°C ±5°C (500°F ±10°F). AN ACCEPTABLE SOLDERABILITY TEST SPECIMEN WILL EXHIBIT EVIDENCE OF SOLDER WETTING AND COMPLETE SAMPLE COVERAGE FOR THE IMMERSED LENGTH.

3.7 DIMENSIONS

VARIATIONS IN INSULATION ALL THICKNESS ARE PERMISSIBLE IF DUE TO ECCENTRICITY. HOWEVER, THE MINIMUM WALL THICKNESS AT ANY CROSS-SECTION OF A TEST SPECIMEN SHALL NOT BE LESS THAN THE MINIMUM THICKNESS OF THE INSULATION SPECIFIED. THE MINIMUM WALL THICKNESS SHALL BE MEASURED WITH AN OPTICAL COMPARATOR.

CHG	JOB NO	DATE	BY	REVISION
J	PA2042-79	06/05/97	DAJ	REVISED AND REDRAWN IN CATIA, ADDED ADD'L COLORS

40-4440 thru 48-2233

Materials Specification

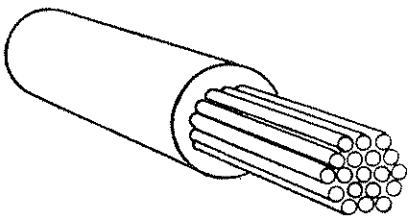
ORIGINAL JOB NO.	TITLE	PART NO.
E0059	CABLE, BATTERY, STARTER LOW TENSION RUBBER OR SYNTHETIC INSULATION	48-2226 thru 48-2233
LAST CHG LTR D		SHEET 1 OF 1

SCOPE: This specification identifies low tension copper cables with rubber or synthetic insulation.

APPLICATION: Automotive electric wiring for engine starter power circuit, battery interconnection and grounding.

(A) Color Black

SKETCH:



SPECIFICATION NUMBERS

Recommended Construction

SAE WIRE SIZE	NO. OF WIRES	NOM. SIZE OF STRAND AWG.	NOM. SIZE OF STRAND IN.	CONDUCTOR AREA CIR. MILS	APPROX. DIA OF STRANDED CONDUCTOR, IN.	NOM WALL INSUL.	OD MAX. IN.	FREIGHTLINER SPECIFICATION NUMBER *
1	127	22	0.0253	77,790	.380	.065	.557	48-2226-XXX
**1	7x37	25	0.0179	77,790	.375	.065	.557	48-2227-XXX
0	127	21	0.0285	98,980	.430	.065	.600	48-2228-XXX (B)
**0	7x37	24	0.0201	98,980	.420	.065	.600	48-2229-XXX
2/0	127	20	0.0320	125,100	.480	.065	.655	48-2230-XXX
**2/0	7x37	23	0.0226	125,100	.475	.065	.655	48-2231-XXX
3/0	7x37	22	0.0253	158,600	.535	.078	.750	48-2232-XXX
4/0	19x22	23	0.226	205,500	.595	.078	.810	48-2233-XXX

* Dash number indicates the length of cable in inches for example -048 = 48 in. long -151 = 151 in. long.

** Alternate cable (cable strand diameter must be within ± 0.010" of the F/L Standard size listed above).

ENGINEERING NOTES:

1. Types SGR, SGT & SGX cable must meet all latest relevant revisions to provisions of SAE std. J1127.

CHANGE INFORMATION	DATE	BY	JOB NO.	LTR

CHANGE INFORMATION	DATE	BY	JOB NO.	JTR
Added Spec Trace	2-13-78	RP	E0220	A
48-2229 to 48-2228	9/13/78	DS	74010	B
See M/F History	3-23-79	TD	90440	C
Revised note 1	1/30/80	FW	92849	D

COMPILED	R. Choi	DATE DRAWN			UNIT OF MEASURE
APPROVED		9-7-76			FT

E-183A Litho in USA Portland **FREIGHTLINER CORPORATION** Oregon 97208

A C B D M/F

ORIGINAL JOB NO.	TITLE	PART NO.
C1041	TAPE, NEOPRENE FOAM, DOUBLE FACED.	48-02234
LAST CHG LTR A		SHEET 1 OF 1

CHANGE INFORMATION	DATE	BY	JOB NO.	LTR

CHANGE INFORMATION	DATE	BY	JOB NO.	TR
4262** To 4962**	10-5-82	TTR	3072B	A

SCOPE: This specification identifies a closed cell foam tape coated on both sides with a pressure sensitive adhesive.

APPLICATION: Attachment of emblems, trim mouldings, et cetera, where high internal strength is required.

SPECIFICATION NUMBERS:

THICKNESS (INCHES)	MANUFACTURER'S NUMBERS		FREIGHTLINER SPECIFICATION NUMBERS*
	MMM		
1/32" (.025-.038)	4962**		48-02234-W

*Complete part number by adding a 3 digit dash number, W expressing tape WIDTH in increments of 1/8". Example: 48-02234-016 is 2 inches WIDE.

**Specify tape width in addition to number shown.

SPECIFICATIONS:

Backing: Black stain resistant neoprene foam.
Adhesive: Transparent, long aging, high holding power acrylic.
Liner: .003" green flatstock silicone treated paper or .004 polyethylene film.
Maximum roll width: 22.00"
Roll width tolerance: $\pm$ 1/32"
Shelf life: 12 months

AVERAGE PHYSICAL PROPERTIES:

Density: 50 lbs/ft.^{3}
Temperature resistance: -20° F to 225° F
Flame resistance: Not for use in vehicle interior. Has not been certified for FMVSS #302, flamability of interior materials.
Cold flex: -20° F Good
Normal Tensile: 60 psi
Static Shear: 72° F 166+ hours (1 in.^{2} w/1000 gram load)
150° F 166+ hours
Peel adhesion: 55 oz/in. width

COMPILED	RJM	DATE DRAWN			
APPROVED		2-11-77			

48-02235

MATERIALS SPECIFICATION

ORIGINAL JOB NO.	TITLE	PART NO.
E0174	CABLE, 4 CONDUCTORS	48-02235
LAST CHG LTR B		SHEET 1 OF 1

SCOPE: This specification identifies a 4 conductor electrical cable.

APPLICATION: Power cable for the computers on the air brake system.

SKETCH:



SPECIFICATION NUMBERS:

Gauge	Conductors	Color Code	Manufacturer's Number	Freightliner Specification Number
14	4	Red Green Black White	(PRS)14-4 131799	48-02235-000

SPECIFICATIONS:

1. Material: Jacket: .030 thick, black PVC minimum 2 inch lay
   Wire: SAE J1128 type SXL.

(B)

COMPILED	Sam B.	DATE DRAWN			UNIT OF MEASURE
APPROVED	STMILLER N.RITCHIE	2-15-77			FT.

E-183A Litho in USA Portland **FREIGHTLINER CORPORATION** Oregon 97208

B

CHANGE INFORMATION

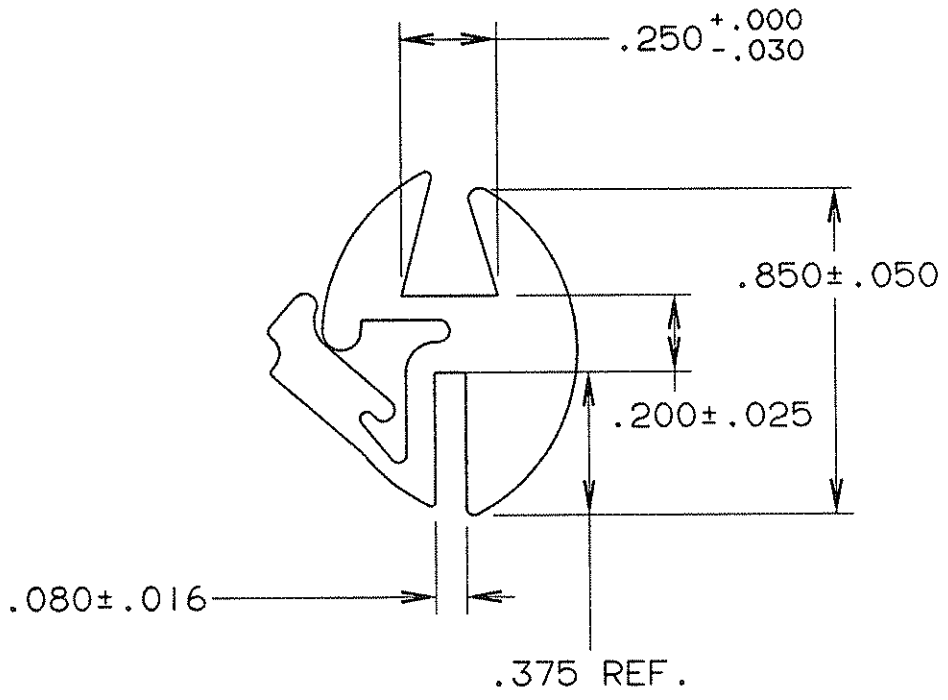
LTR	JOB NO.	BY	DATE	
A	04530	JK	7-7-77	CA. 16 TO 14; REV. COLORS
B	0190A	DS	4-17-81	REVISED NOTE (1)

DRAWN	ERK	TITLE	ITEM NUMBER
APPRV	ANF	EXTRUSION - RUBBER WINDOW SEAL	48-02245
DATE	12/12/90	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1

SCOPE: THIS SPECIFICATION IDENTIFIES A RUBBER EXTRUSION USED AS A WINDOW SEAL.

APPLICATION: VISIBILITY WINDOW WEATHERSTRIP.

SKETCH:



MATERIAL	FREIGHTLINER SPECIFICATION NUMBER
BLACK SBR RUBBER	48-02245-000

SPECIFICATIONS:

1. MUST CONFORM WITH ASTM D 2000: M4AA710A13B13C12F17P2
2. FINISH: AS EXTRUDED

CHG	JOB/RLSE NO	DATE	BY	REVISION
A	P7393G-01	12/12/90	ERK	REVISED & REDRAWN: ADD .200, REV .875 TO .850
B	P6253G-01	04/10/91	ERK	REV. GLS OPNG TOLERANCE TO +.000/-.030 FROM ±.030.

ADRIENNE CHILBERG

DRAWN	ERK	TITLE	DRAWING NUMBER	
APPRV	DRS	HOSE - GATES 4663A FLEXIBLE, OIL RESISTANT	48-02246	
DATE	10/03/77	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1	CHG. LTR. D
CATIA ORIGINAL				

SCOPE: THIS SPECIFICATION IDENTIFIES GATES 4663A AIR INTAKE HOSE AN EXTREMELY FLEXIBLE WIRE REINFORCED OIL RESISTANT HOSE.

APPLICATION: FOR AIR CLEANER TO CARBURETOR, DEFROSTER DUCTS, AND AIR, HEATER OR EXHAUST DUCTING.

I.D. (IN)	WORK PRESSURE (PSI)	VACUUM RATING (IN/HG)	MIN BEND RADIUS (IN)	FREIGHTLINER SPEC NUMBER
1	10	5	1	48-02246-100
1-1/4	10	5	1	48-02246-125
1-3/8	10	5	1-1/2	48-02246-138
1-1/2	10	5	1-1/2	48-02246-150

SPECIFICATIONS:

1. MATERIAL: GATES 4663A HOSE

2. CONSTRUCTION:
   - INNER TUBE - NEOPRENE, BLACK, MEETS SAE CLASS C
   - REINFORCEMENT - SINGLE PLY OF SYNTHETIC FABRIC WITH TWO BUILT-IN HELICAL WIRES.
   - COVER - BLACK NEOPRENE-IMPREGNATED FABRIC.

3. TEMPERATURE RANGE: -40°F TO 250°F

CHG	JOB NO	DATE	BY	REVISION
D	865309-01	05/06/97	DAJ	REVISED AND REDRAWN IN CATIA, ADDED -100.

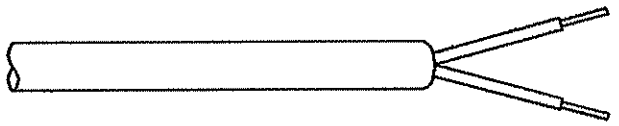
48-02247

ORIGINAL JOB NO.	TITLE	PART NO.
3121B	CABLE, 2 CONDUCTORS	48-02247
LAST CHG LTR E		SHEET 1 OF 1

SCOPE: THIS SPECIFICATION IDENTIFIES A 2 CONDUCTOR ELECTRICAL CABLE.

APPLICATION: GENERAL USE.

SKETCH



SPECIFICATION NUMBERS

GAGE AWG STRANDED	CONDUCTORS	COLOR CODE	MANUFACTURER'S NUMBER			FREIGHTLINER SPECIFICATION NUMBER
			PRS	PAC		
14	2	BROWN RED				48-02247-000
8 10	2	BLUE BROWN	135559	R0070354		-001
6 12	2	GREEN BLUE				-002
16	2	RED BLACK	139370	R0070355		-003

ENGINEERING NOTES

(1) CABLE MUST MEET SAE STANDARD J1128, TYPE SXL, STANDARD DUTY, THERMOSETTING CROSSLINKED POLYETHELENE INSULATION, BRAIDLESS.

CABLE COVER: NYLON OVERBRAID NATERAL COLOR-210 DENIER OR .030 THICK, BLACK PVC, MINIMUM TWO INCH LAY.

2. CABLE MUST PASS FEDERAL MOTOR VEHICLE SAFETY STANDARD #302, FLAMMABILITY OF INTERIOR MATERIALS.

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION
D	3121B	FEF	01-11-84	REVISED & REDRAWN
E	3130B	FEF	05-21-84	ADDED PRS/135559

COMPILED	FEF	DATE DRAWN	CADAM ORIGINAL	MATERIAL	UOM	MASTER NUMBER	
APPROVED	DJL	01-11-84		(1)	FT	06020	000D1

DRAWN	ERK	TITLE HOSE-HEATER, SILICONE RUBBER SAE 20R3 H.T. CLASS A	ITEM NUMBER 48-02256
APPRV	KCB		
DATE	07/20/88	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1

SCOPE: THIS SPECIFICATION IDENTIFIES SILICONE RUBBER HEATER HOSE FOR NORMAL SERVICE.

APPLICATION: FOR HEAVY DUTY VEHICLE HEATER SYSTEMS. DESIGNED TO FUNCTION AT HIGH AND LOW TEMPERATURE WITH EXTENDED SERVICE LIFE.

SPECIFICATION NUMBERS:

I.D. NOM. (INCHES)	O.D. REF. (INCHES)	WALL THICKNESS		FREIGHTLINER SPECIFICATION NUMBERS
3/8	11/16			48-02256-038
1/2	13/16	.155		-050
5/8	1	TO		-062
3/4	1 1/8	.220		-075
1	1 3/8			-100
1 1/4	1 5/8			-125

SPECIFICATIONS:

1. THE HOSE SHALL MEET OR EXCEED THE REQUIREMENTS OF SAE 20R3 H.T. CLASS A.

2. 48-02256-125, 1 1/4 ID NOM., MUST MEET OR EXCEED SAE 20R3 H.T. CLASS A REQUIREMENTS FOR 1" NOMINAL SIZE WITH MINIMUM BURST OF 150 PSI.

3. CONSTRUCTION: COVER - - - - - SILICONE RUBBER
   REINFORCEMENT - TYPICALLY BRAIDED, KNITTED, OR SPIRALED YARN.
   INNER TUBE - - SILICONE RUBBER

4. TEMPERATURE RANGE: -65° F TO $+350^{\circ}$ F.

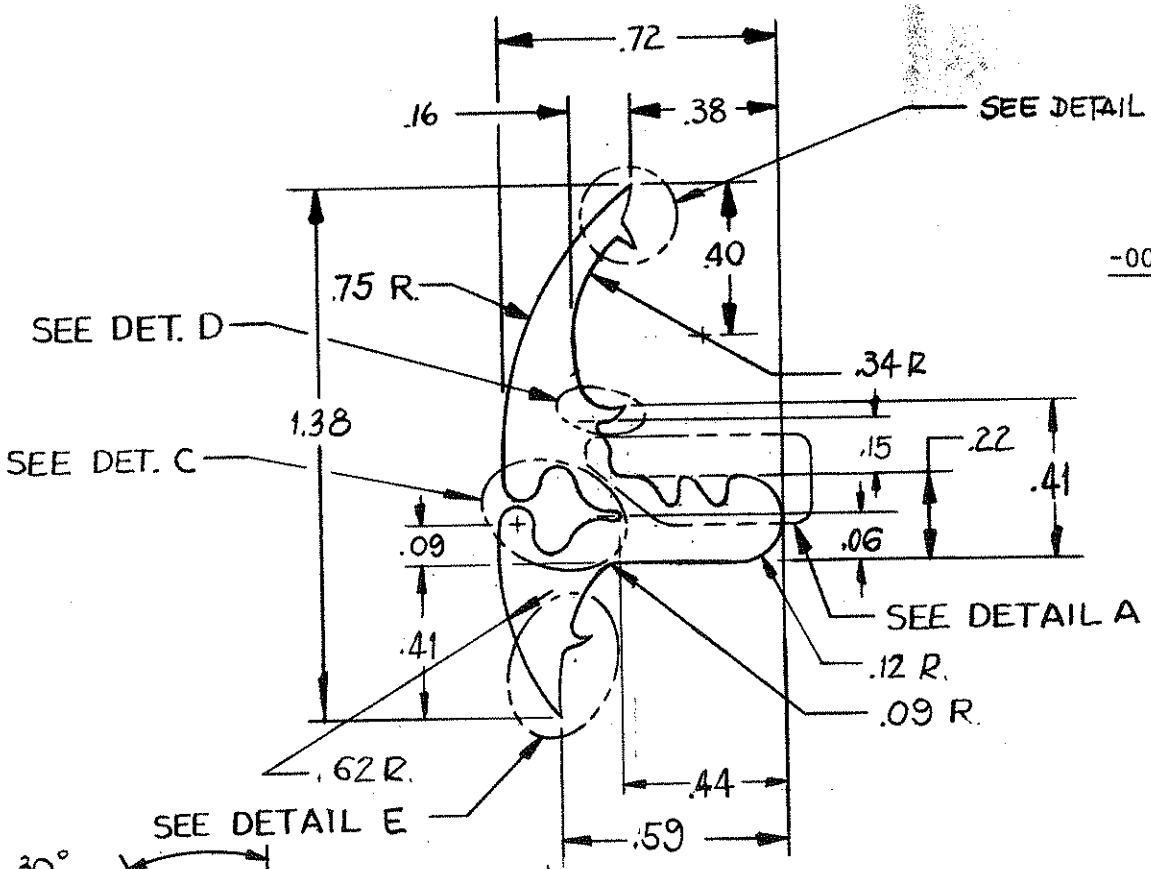
CHG	JOB/RLSE NO	DATE	BY	REVISION
G	P*A078-37	07/20/88	ERK	REVISED AND REDRAWN

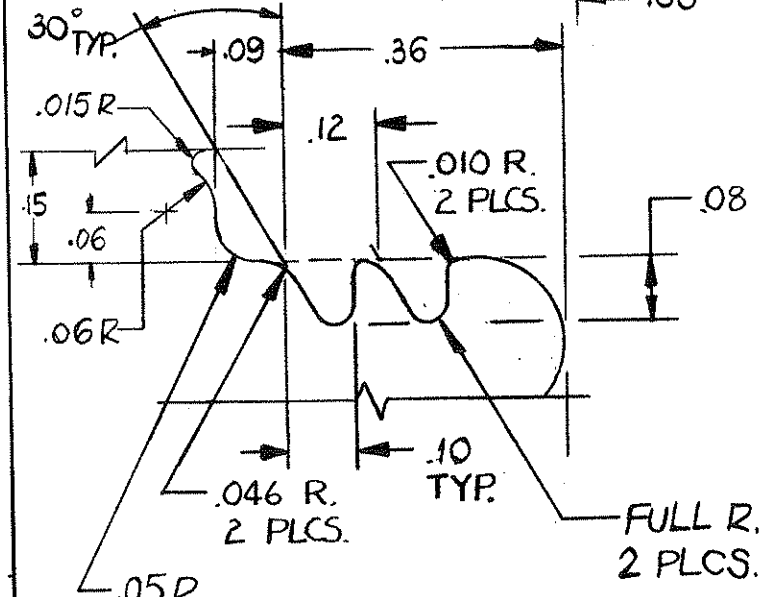
48-02262

ORIGINAL JOB NO.	TITLE	PART NO.
C1249	SEAL, RUBBER	48-02262
LAST CHG LTR B		SHEET 2 OF 3

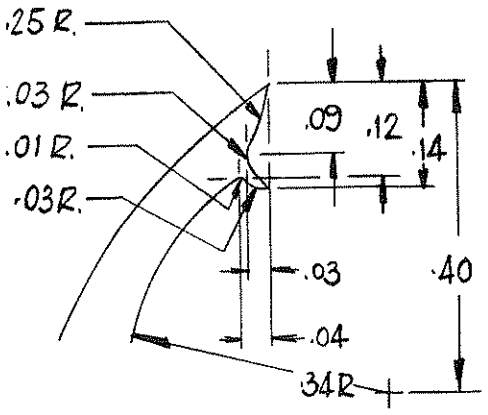
LTR	JOB NO.	BY	DATE	CHANGE INFORMATION

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION
A	C1249	HD	5-20-78	REVISED -000
B	C1381	HD	1-15-79	NU, X4





DETAIL A
4X SCALE



DETAIL B
4X SCALE

COMPILED	H.D.	DATE DRAWN			
APPROVED	BK	4-21-78			

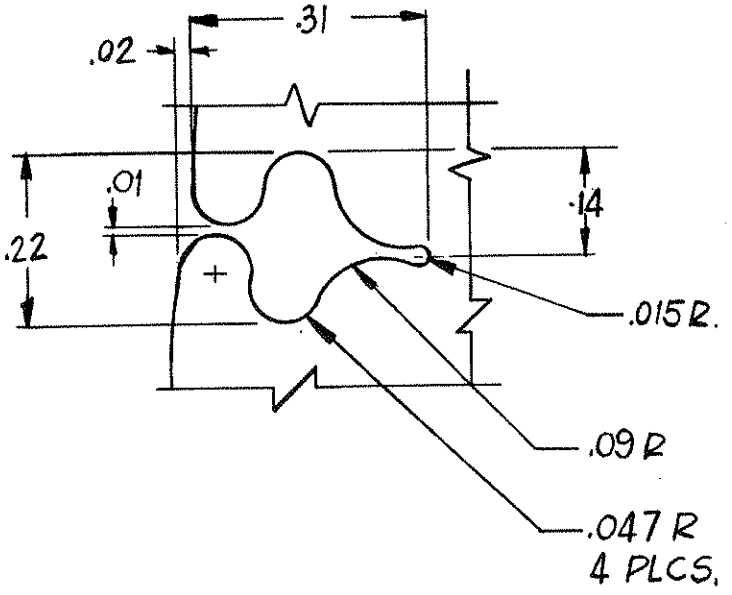
B

48-02262

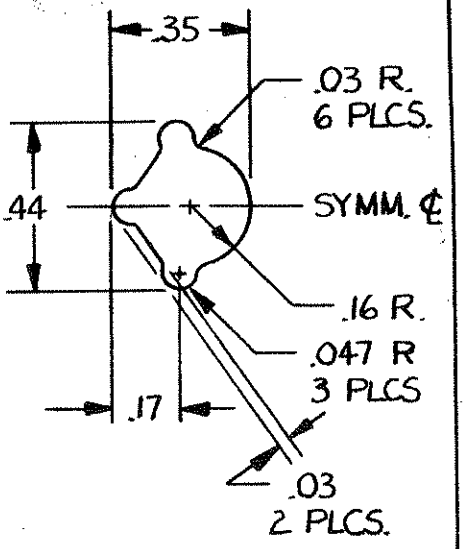
ORIGINAL JOB NO.	TITLE	PART NO.
C1249	SEAL, RUBBER	48-02262
LAST CHG LTR B		SHEET 3 OF 3

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION

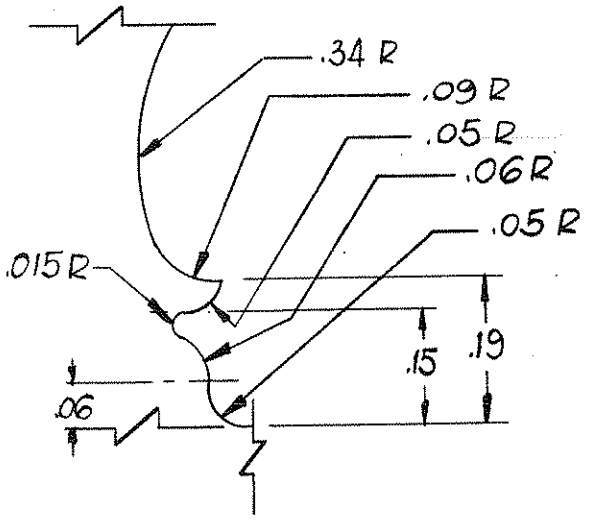
LTR	JOB NO.	BY	DATE	CHANGE INFORMATION
A	C1249	HD	5-20-78	REVISED -000
B	C1381	HD	1-15-79	NU, X4



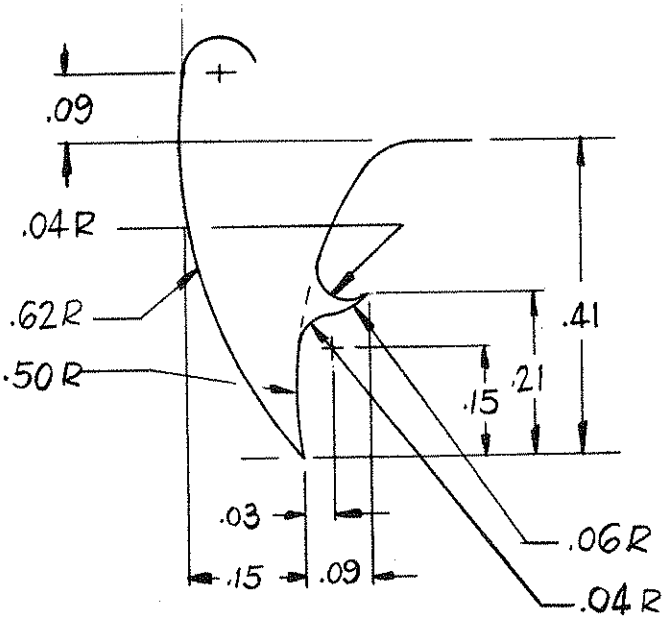
DETAIL C
4X SCALE



-001 DETAIL



DETAIL D
4X SCALE



DETAIL E
4X SCALE

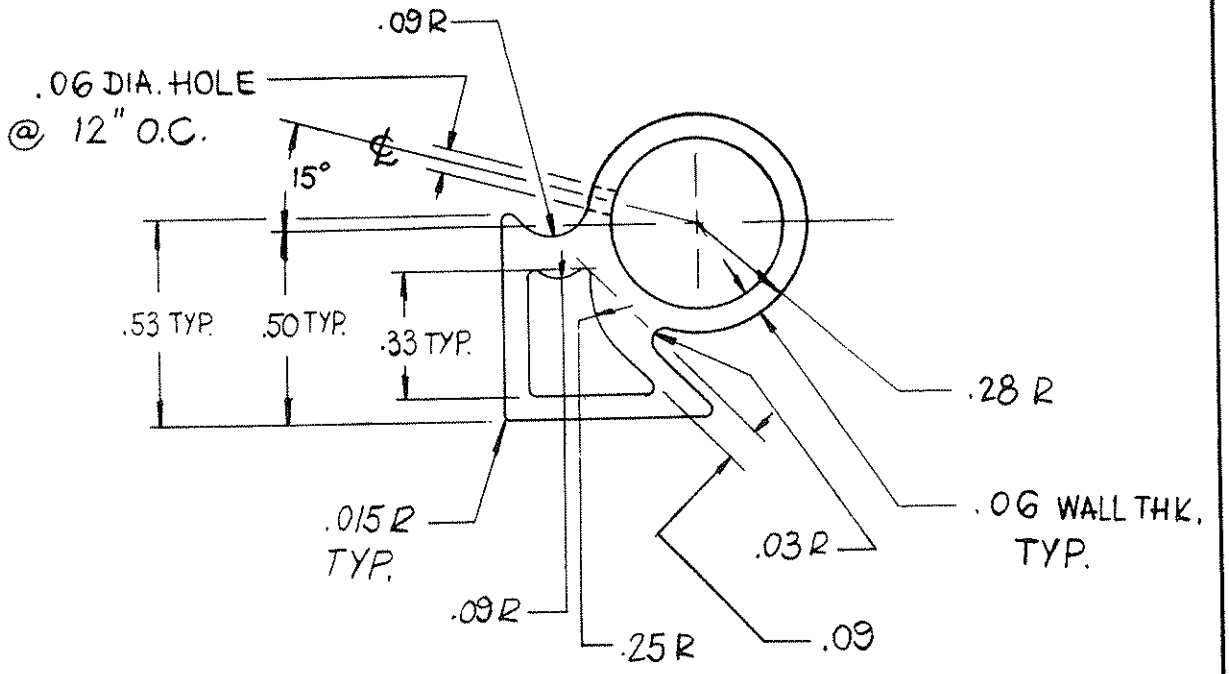
COMPILED	H.D.	DATE DRAWN			
APPROVED	BK	4-21-78			

ORIGINAL JOB NO.	TITLE	PART NO.
C1190B	SEAL, RUBBER	48-2263
LAST CHG LTR		SHEET 1 OF 1

SCOPE: THIS SPECIFICATION IDENTIFIES A SPECIFIC CELLAR RUBBER BULB SEAL WITH PERFORATED HOLES.

APPLICATION: USE ESPECIALLY FOR THE CAB DOOR.

SKETCH:



SPECIFICATION NUMBER

	MATERIAL	WT. lb/ft	EXTRUSION DIE NO.		FREIGHTLINER SPECIFICATION NUMBERS
	(1)				48-2263-000

SPECIFICATIONS

(1.) Material to be cellular rubber per SAE spec. J18 material designation SCE-42.

2. Finish: As extruded

3. Tolerance to be ± .03 and ± 2°.

COMPILED	DANG	DATE DRAWN			
APPROVED	NK	5-5-78			

CHANGE INFORMATION | LTR | JOB NO. | BY | DATE

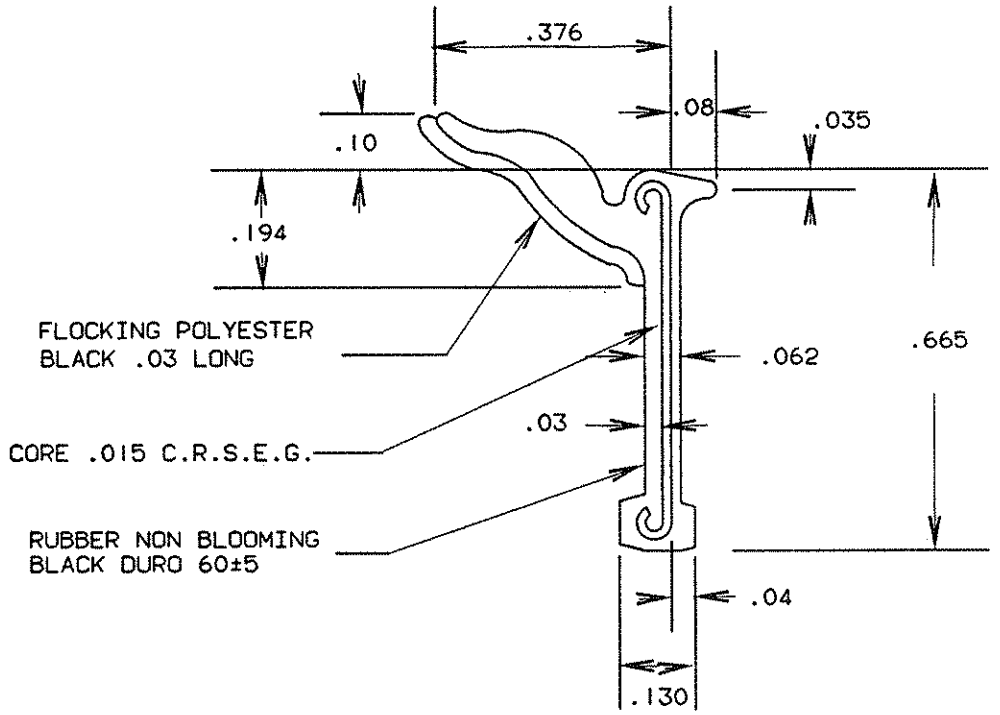
CHANGE INFORMATION | LTR | JOB NO. | BY | DATE

DRAWN	ERK	TITLE WEATHERSTRIP FLOCKED	ITEM NUMBER 48-02264
APPRV	ANF		
DATE	11/21/90	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1

SCOPE: THIS SPECIFICATION IDENTIFIES THE CONFIGURATION OF A PARTICULAR STEEL REINFORCED, RUBBER COVERED, FLOCKED WEATHERSTRIP.

APPLICATION:

SKETCH:



SPECIFICATION NUMBER:

MANUFACTURER	PRODUCT NUMBER	FREIGHTLINER SPECIFICATION NUMBER
SPC	MR 172X	48-02264-000

CHG	JOB/RLSE NO	DATE	BY	REVISION
B	PA2024-51	11/21/90	ERK	REVISED AND REDRAWN

ORIGINAL JOB NO.	TITLE	PART NO.
C1500D	DRIP LIP EXTRUSION	48-02266
LAST CHG LTR A		SHEET 1 OF 1

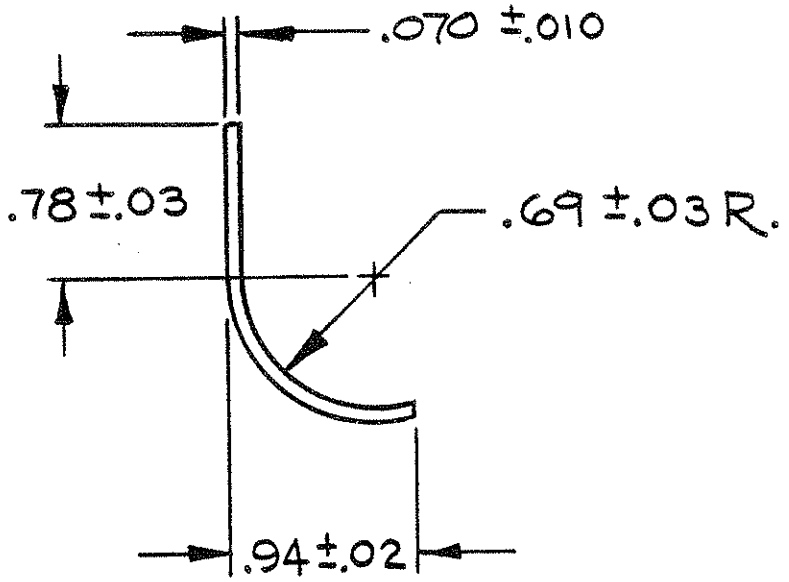
CHANGE INFORMATION	DATE	BY	JOB NO.	LTR

CHANGE INFORMATION	DATE	BY	JOB NO.	LTR
.178 TO .070 ±.010 .62 TO .78 ±.03 .672 TO .69 ±.03R .94 ±.02	9-28-79	PRS	C1500D	A

SCOPE:

APPLICATION: Condensate lip, 71+ Series Cab Combo.

SKETCH:



SPECIFICATION NUMBERS

		MATERIAL	DIE NUMBERS		FREIGHTLINER SPECIFICATION NUMBER
		1			48-02266-000

SPECIFICATION:

1 Urethane 90 A Durometer; color: natural.

COMPILED		DATE DRAWN			UNIT OF MEASURE
APPROVED		4-5-79			INCHES

DRAWN	DAJ	TITLE	DRAWING NUMBER	
APPRV	DAJ	TAPE-TRANSFER PSA, DOUBLE-SIDED	48-02268	
DATE	09/04/98	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1	CHG. LTR. D
CATIA ORIGINAL				

SCOPE: THIS SPECIFICATION DESCRIBES A PRESSURE SENSITIVE ADHESIVE TRANSFER TAPE.

APPLICATION: FOR FASTENING PARTS IN LOW STRESS APPLICATIONS.

SPECIFICATION NUMBER:

THICKNESS	WIDTH	MANUFACTURER'S NUMBER		FREIGHTLINER SPECIFICATION NUMBER
		MMM	TESSA	
.010	2.00	9473	-	48-02268-105
.005	0.15	Y-926	-	48-02268-207
	1.00	950	4970	48-02268-510
	1.50	950	4970	48-02268-515
	2.00	950	4970	48-02268-520
.009	2.00	-	51970	48-02268-920

ENGINERING NOTES:

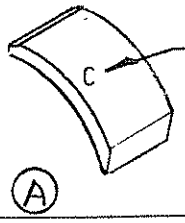
1. MATERIAL: 100% ACRYLIC POLYMER
2. PHYICAL PROPERTIES:

	-105	-207	-5XX	-920
TENSILE, PSI	-	-	26	35
ELONGATION AT BREAK, %	-	-	40	140
TEMPERATURE RESISTANCE, °F	-	-	160	230
ADHESION (STEEL), OZ/IN	-	150	75	21

3. TESSA 4970 IS .009 THICK
4. APPLY ONLY TO CLEAN SURFACES.
5. AVAILABLE IN 48 INCH WIDE ROLLS.

CHG	JOB NO	DATE	BY	REVISION
D	P06277-01	09/04/98	DAJ	RVSD & RDRWN IN CATIA, REVISED NOTES & ADDED -920.

ORIGINAL JOB NO.	TITLE	PART NO.
B1147	Material Specification Vendor Supplied Brake Lining	48-02272
LAST CHG LTR: B		SHEET 1 OF 2



See sheet 2

APPLICATION DATA:

Brake Assembly		Approved Lining / Vendor			Chamber size	Slack Adj./ Wedge Angle	Application		
Size	Type Cam or Wedge	Abex	Carlisle				Front or Rear	Cap. per Brake	-##
15 x 4	C	ABB551D	MM8C5		$\frac{16in^2}{20in^2}$	5.50	F	$\frac{6000}{7000}$	-0
15 x 4	W	ABB551D	MM8C5		$\frac{9in^2}{16in^2}$	14°	F	$\frac{5500}{7000}$	-1
16¼ x 3½	C	ABB551D	MM8C5		$16in^2$	5.50	F	6000	-2
16½ x 5	C	ABB551D	MM8C5		$20in^2$	5.50	F	7000	-3
16½ x 6	C	ABB551D	MM8C5		$24in^2$	5.50	F	9000	-4
16½ x 7	C	ABB551C	MMD39 or MMD39A		$30in^2$	5.50	R	10000	-5
15 x 7	W	ABB551D	MM8C5		$\frac{16in^2}{12in^2}$	12°	R	$\frac{11500}{10000}$	-6
16½ x 7	C	ABB551D	MM8C5		$30in^2$	5.50	R	11500	-7
15 x 6	W	ABB551D	MM8C5		$12in^2$	14°	F	7000	-8
15 x 5	W	ABB551D	MM8C5		$12in^2$	12°	F	7000	-9

Chemical Requirements

1. All shipments of brake assemblies specifying this spec shall conform to manufacturers specification as provided in published data at time of order.
2. Lining supplied will be procured from one of the approved vendors identified above under Application Data.

Physical Requirements:

1. Brake lining supplied as an itegral part of brake assemblies and as such must be tested in accordance with all pertinent provisions of FMVSS121 applicable at date of shipment.
2. Certification of capacity will be made by dynamometer testing as specified within FMVSS 121 and will be the responsibility of the brake supplier.

(Continued)

CHANGE INFORMATION	DATE	BY	JOB NO.	LTR

CHANGE INFORMATION	DATE	BY	JOB NO.	LTR
Add "or MMD39A" to -5	2-8-80	KRH	90723	A
Add -9	11-17-80	MDE	B1441	B

COMPILED	Evens	DATE DRAWN			
APPROVED					

ORIGINAL JOB NO.	TITLE	PART NO.
B1147	Material Specification Vendor Supplied Brake Lining	48-02272
LAST CHG LTR B		SHEET 2 OF 2

Supplier Responsibilities:

1. Lining is to be supplied mounted on brake assemblies in accordance with all recommended applicable SAE practices.
2. Brake assembly manufacturer is to maintain complete records on source, batch and all other pertinent procurement data as required to assure identification of all shipments and identification thereof.
3. Upon request by Freightliner Corp., brake assembly manufacturer is to make availalbe all test data and inspection reports as requested which may be deemed pertinent to any shipment within a given time period or by a specific vendor.

Required Markings

1. All lining shall have an edge code as outlined below:

   Abex All Abex lining shall have the edge marked by ink stamp or painting to include lining type and mix identification.

   Carlisle The edge of all linings supplied by Carlisle will be color coded. Green indicates, MMD39 and red indicates, MM8C5. In addition, all completed brake assemblies will have the letter "C" stenciled with 2" high letters located on the shoe surface in such a manner as to be clearly ledgible while the assemblies are on pallets.

   In lieu of color coding, the New York State Friction Code may be stamped on at least one side of the lining in letters at least ¼ inch high.

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION
A	90723	KRH	2-6-80	Add new paragraph
B	B1441	MDE	11-17-80	Add -9

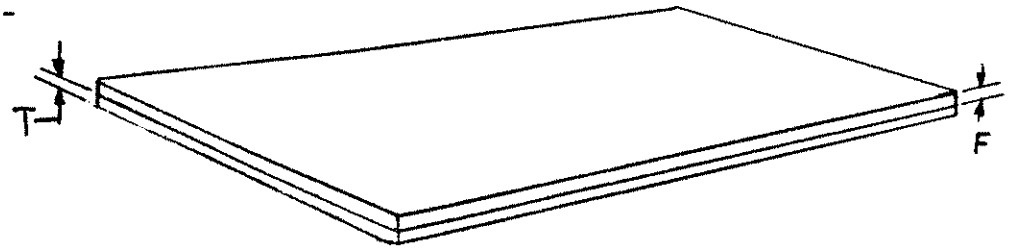
COMPILED	Evens	DATE DRAWN			
APPROVED					

ORIGINAL JOB NO.	TITLE	PART NO.
C1500B	FOAM COVERED ABS PLASTIC	48-02273
LAST CHG LTR C		SHEET 1 OF 2

SCOPE - This spcification identifies a soft vinyl foam covered acrylonitrile butadiene-styrene (ABS) plastic sheet.

APPLICATION - Vacuum formed parts.

SKETCH -



SPECIFICATION NUMBERS

T-ABS THKNESS (IN)	F - FOAM THICKNESS (IN)	COLOR	MANUFACTURER'S IDENTIFICATION UNL (A)		FREIGHTLINER SPECIFICATION NUMBERS*
.060 .090 .125 .187	.110	BLK	RM3M79 TR4894-A		48-02273-006 -009 -012 -019
.060 .090 .125 .187	.110	MOCHA	RM1M79 TR4893-A		-106 -109 -112 -119
.060 .090 .125 .187	.110	SADDLE	RM2M79 TR4894-A		-206 -209 -212 -219

* Dash number: 1st digit = color code and foam thickness; last two digits = thickness in 1/100's inch.

CHANGE INFORMATION				
LTR	JOB NO.	BY	DATE	

CHANGE INFORMATION				
LTR	JOB NO.	BY	DATE	
A	C1500T	MGP	11-24-80	Added: UNL Codes
B	C1500T	MGP	1-16-81	See SHT 2 of 2
C	C1500T	MGP	3-17-81	See SHT 2 of 2

		DATE DRAWN			
COMPILED	GF				
APPROVED	BCK				

C B M/F

ORIGINAL JOB NO.	TITLE	PART NO.
C1500B	FOAM COVERED ABS PLASTIC	48-02273
LAST CHG LTR C		SHEET 2 OF 2

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION
A	C1500T	MGP	11-24-80	See Sht. 1 of 2
B	C1500T	MGP	1-16-81	.010-.013 to .014-.017
C	C1500T	MGP	3-17-81	COACHMAN TO SADDLE

1. Physical Properties

ABS Substrate	
Notched Izod impact:	
at 73° F	6.0
at -20° F	2.1
Tensile Strength	5,000
Flexural Strength	8,100
Flexural Modulus	2.6 x 10.5
Specific Gravity	1.15
Hardness, Rockwell	90
Hardness, Shore	NA
Heat Deflection Temperature	
264 psi	185

Foam/Skin Laminate	
Skin Thickness	.014-017 (.015 Nominal)
Tensile Strength	300-450 lbs/in^2
Elongation	185% (min.)
Tear	55 lbs./in
Durameter Shore "00"	90 max.
Burn Rate	less than 2"/min.
Peel Strength Foam/Skin	3 lbs./in. min.
Std. Peel Strength ABS/Foam	1 lb./in. min.
Special Peel Strength ABS/Foam	5 lb./in. min.

2. Surface Texture: © Saddle Grain.

3. Must pass Federal Motor Vehicle Safety Standard No. 302, Flammability of Interior Materials.

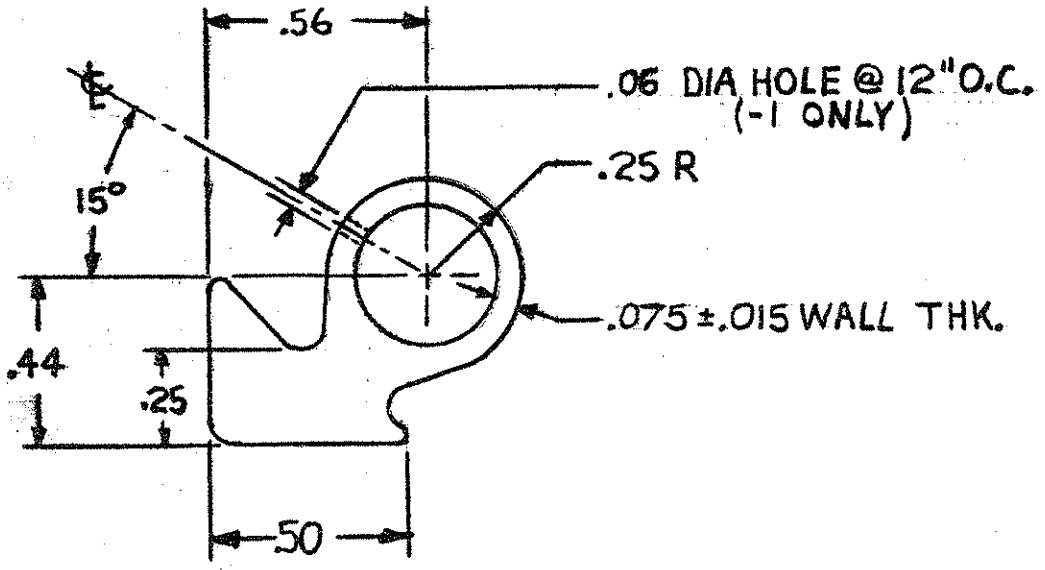
		DATE DRAWN			
COMPILED	GF				
APPROVED	BBK				

ORIGINAL JOB NO.	TITLE	PART NO.
C1383	SEAL, RUBBER	48-2274
LAST CHG LTR		SHEET 1 OF 1

SCOPE: THIS SPECIFICATION IDENTIFIES A SPECIFIC OPEN CELL RUBBER SEAL WITH PERFORATED HOLES.

APPLICATION: ESPECIALLY FOR THE CAB DOOR.

SKETCH:



SPECIFICATION NUMBER

	MATERIAL	WT. lb/ft	EXTRUSION DIE NO.		FREIGHTLINER SPECIFICATION NUMBERS
	(1)	.06 / .12			48-2274-000 -001

SPECIFICATIONS

(1.) Material to be cellular rubber per SAE spec. J18. Hardness of finished product on a Shore "00" Durometer scale: 55± 10, tested on a section .25 or thicker.

2. Finish: As extruded.

3. Tolerance to be ± .03 and ± 2°, unless otherwise specified.

COMPILED	LARSON	DATE DRAWN			
APPROVED	NLK	2-12-79			

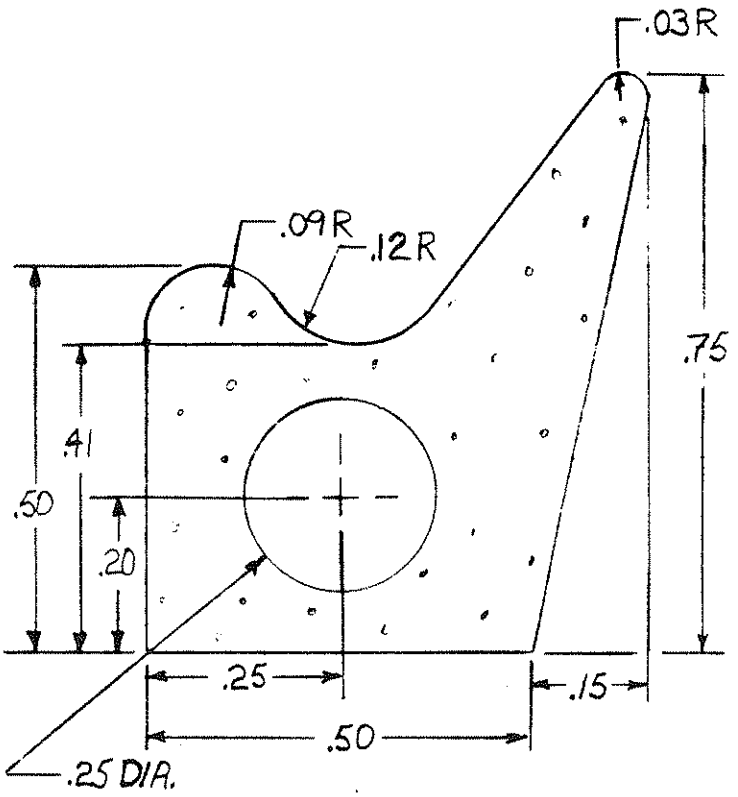
CHANGE INFORMATION | DATE | BY | JOB NO. | LTR

CHANGE INFORMATION | DATE | BY | JOB NO. | LTR

ORIGINAL JOB NO.	TITLE	PART NO.
C1250	COMBINATION LIP / RULE SEAL BAGGAGE DOOR C.O.E.	48-2275
LAST CHG LTR B		SHEET 1 OF 1

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION
A	1250	TC	10-8-79	LIP RADIUS .03 R, FAUST .12 X .41
	1250	TC	5-24-79	



MATERIAL: CLOSED CELL NEOPRENE

DUROMETER: "MEDIUM"

FINSH: AS EXTRUDED

TOLERANCE ± .03

STATUS: NU

COMPILED	DATE DRAWN			
APPROVED	5-24-79			STATUS X9

EAC - 832

Portland

FREIGHTLINER CORPORATION

Oregon 97208

B

Materials Specification

ORIGINAL JOB NO.	TITLE	PART NO.
D2055	LUBRICANT, ENGINE OIL API TYPE CC/CD	48-02276
LAST CHG LTR		SHEET 1 OF 1

CHANGE INFORMATION	DATE	BY	JOB NO.	LTR

SCOPE This specification identifies moderate to heavy-duty diesel engine crankcase lubricant.

APPLICATION Egnine crankcase lubricant.

SPECIFICATION NUMBERS

API ENGINE SERVICE DESIGNATION*	ASTM ENGINE OIL DESCRIPTION 1	SAE VISCOSITY NUMBER	FREIGHTLINER SPECIFICATION NUMBER
CC/CD	Provides low temperature, anti-sludge, anti-rust and lightly to moderately supercharged diesel engine performance. This constitutes combined performance of both CC and CD, including MIL-L-2104B and MIL-L-45199B or MIL-L-46152 and MIL-L-2104C provisions.	30	48-02276-030

*Per SAE J183 Recommended Practice:

CHANGE INFORMATION	DATE	BY	JOB NO.	LTR

SPECIFICATIONS

1 See table for ASTM description.

2. Sulphated ash content (per ASTM D-874) must not exceed 1.00%, except lubricants that contain only barium detergent-dispersants may be allowed 1.50% by weight.

3. Zinc content, as zinc diorganodithiophosphate, must be present between a minimum of 0.07% and a maximum of 0.10% by weight.

		DATE DRAWN			UNIT OF MEASURE
COMPILED	MWREED	1-7-80			QUART
APPROVED					

DRAWN	ERK	TITLE	ITEM NUMBER
APPRV	KCB	OIL, 15W-40 API TYPE CC,CD,CE, SG	48-02277
DATE	08/14/90	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1

SCOPE: THIS SPECIFICATION IDENTIFIES A MODERATE TO HEAVY-DUTY MULTI-GRADE DIESEL ENGINE CRANKCASE LUBRICANT.

APPLICATION: ENGINE CRANKCASE LUBRICANT AND POWER STEERING FLUID.

SPECIFICATION NUMBERS:

API ENGINE SERVICE DESIGNATION *	SAE VISCOSITY NUMBER	FREIGHTLINER SPECIFICATION NUMBER
CC, CD, CE, SG	15W-40	48-02277-000

* PER SAE J183

SPECIFICATIONS:

1. SULPHATED ASH CONTENT (PER ASTM D 874) MUST NOT EXCEED 1.00%.
2. LUBRICANT MUST MEET OR EXCEED APPLICABLE PROVISIONS OF MIL-L-2104E AND MIL-L-46152D.
3. ZINC CONTENT, AS ZINC DIORGANODITHIOPHOSPHATE, SHALL BE A MINIMUM OF 0.07% BY WEIGHT.

CHG	JOB/RLSE NO	DATE	BY	REVISION
D	PA2024-39	08/14/90	ERK	REVISED AND REDRAWN

ORIGINAL JOB NO.	TITLE	PART NO.
C0910A	SEAL DOOR	48-02279
LAST CHG LTR C		SHEET 1 OF 2

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION
A	C0910	DB	10-4-79	REVISE & REDRAWN
B	66708	FW	1-21-80	DELETE VIEW
C	90613	TDT	5-14-80	SEE SHT 2

(B)

SEE SHEET TWO
FOR FORM DEFINITION

SPECIFICATION NUMBERS

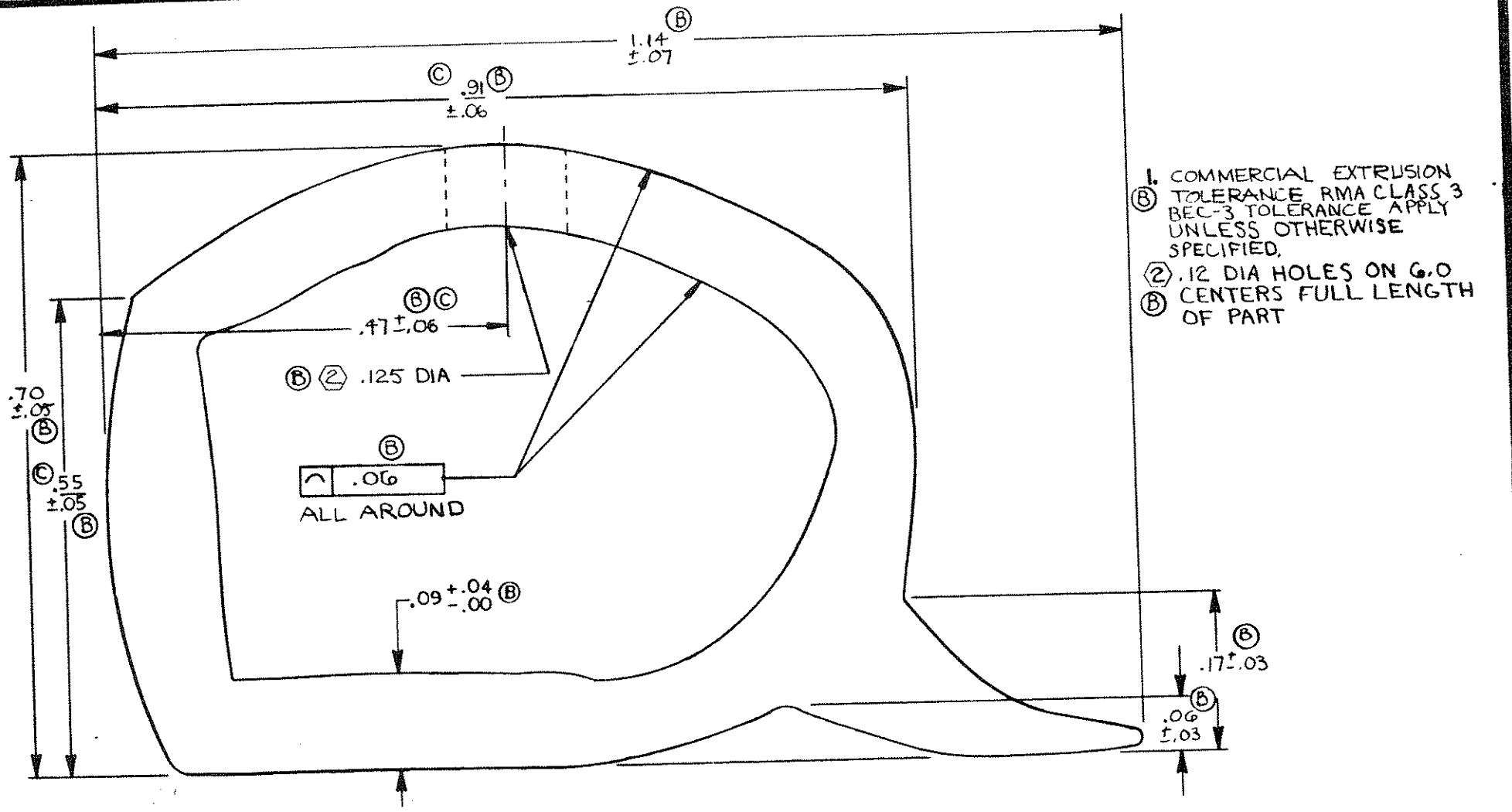
APPROVED VENDOR	MATERIAL (1)	EXTRUSION DIE NO.	FREIGHTLINER SPECIFICATION NUMBER
KIRKHILL RUBBER CO.	NEOPRENE RUBBER		48-02279-000

SPECIFICATIONS:

(1) MATERIALS TO BE CELLULAR RUBBER PER SAE SPEC. J18b MATERIAL DESIGNATION SCE-42

2 FINISH: AS EXTRUDED

		DATE DRAWN	DRAWN BY		
COMPILED	D.B	10-4-79	SIMMONS		
APPROVED	DB				



Ltr.	JOB NO.	DATE	BY	APPR	CHANGE INFORMATION FROM TO
C	90613	5-14-80	TDT	RN	.50±.05, .47±.03 & .85±.05 TO .55±.05, .47±.06 & .91±.06
B	66708	1-21-80	FW	MAYER	.65 & 1.07 TO .70 & 1.14; REVISE NOTE 1, ADDED TOLERANCES, NOTE 2 & .125 DIA HOLE
A	C0910	10-3-79	MS	[illegible]	REVISED & REDRAWN

DRAWN BY	SIMMONS	SEAL, DOOR		
APP. BY	M. HALE	SCALE: 10X	JOB NO.: C0910	
FREIGHTLINER CORPORATION		SHT 2 of 2	48-02279	C

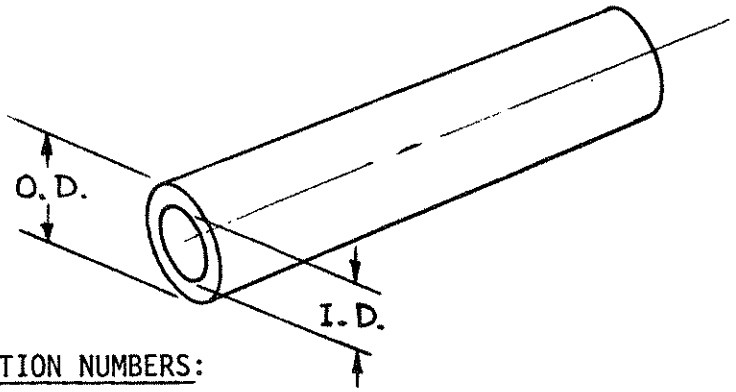
CB A

ORIGINAL JOB NO.	TITLE	PART NO.
8310B	Tube, Bronze Bushing Stock	48-02284
LAST CHG LTR		SHEET 1 OF 1

SCOPE: This specification describes bronze bushing stock.

APPLICATION: Transmission shift shaft bushing

SKETCH:



SPECIFICATION NUMBERS:

O.D. (in.)	I.D. (in.)	Wall (REF.)	Weight Lbs/Ft.	Freightliner Specification Number
1-1/8 (1.163) +.03 -.00	7/8 (.845) +.00 -.03	.318	2.10	48-02284-000

SPECIFICATION:

1. Material: Cast high leaded tin bronze per SAE J461 designation CA932 (Former designation SAE 660). Available in continuous cast lengths of 105 inches.

CHANGE INFORMATION	DATE	BY	JOB NO.	LTR

CHANGE INFORMATION	DATE	BY	JOB NO.	LTR

COMPILED	DJL	DATE DRAWN			UNIT OF MEASURE
APPROVED		4-28-83			FT

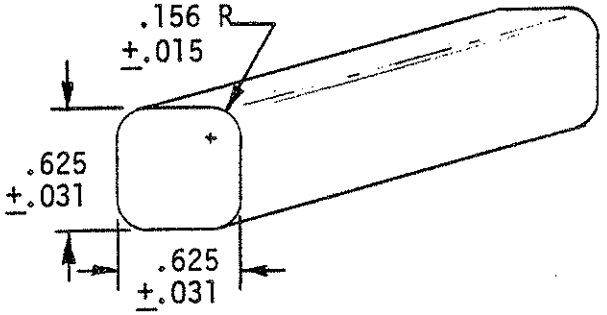
Portland FREIGHTLINER CORPORATION M/F Oregon 97208

ORIGINAL JOB NO.	TITLE	PART NO.
C1500T	EXTRUSION, RUBBER, SQUARE	48-2286
LAST CHG LTR		SHEET 1 OF 1

Scope: This specification identifies a particular rubber extrusion.

Application: General use.

Sketch:



Specification Numbers

	Material ①	Weight lb/ft	Extrusion Die Number		Freightliner Specification Number
	Black EPDM	.138			48-02286-000

Specification:

① Material: SAE J200 1AA715

2. Finish: As extruded

3. Durometer: 70 ± 5

COMPILED	MGP	DATE DRAWN			Unit of Measure
APPROVED	BEL	11/17/80			FT.

CHANGE INFORMATION | LTR | JOB NO. | BY | DATE

CHANGE INFORMATION | LTR | JOB NO. | BY | DATE

ORIGINAL JOB NO.	TITLE	PART NO.
C0910	SHEET, ABS, CAB LINING	48-02289
LAST CHG LTR C		SHEET 1 OF 2

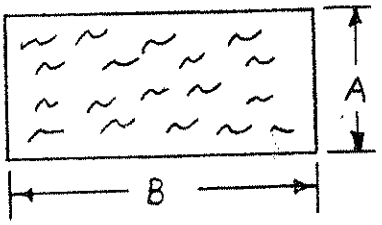
SCOPE This specification identifies extruded Acrylonitrile-Butadiene-Styrene (ABS) Plastic Sheet.

APPLICATION Cab Lining, with or without Naugahyde Covering.

NOTE: "Standard" color sheets ("Standard" as published in the Freightliner Sales Data Book) will be used as the substrate for upholstery panels with naugahyde.

SKETCH

Material is .047 Thick.



SPECIFICATION NUMBERS (4) (See Page 2).
* Dash No.: 1st Digit = Color Code; Last 2 Digits = Specific Sheet Size.

SIZE		FREIGHTLINER SPECIFICATION NUMBERS * 48-02289 COLOR			
A DIM	B DIM	BROWN	PEWTER	LT OAK	FAWN
18	32	-000	-100	-200	-300
22	39	-001	-101	-201	-301
22	51	-002	-102	-202	-302
32	74 3/4	-003	-103	-203	-303
33	46	-004	-104	-204	-304
33	51	-005	-105	-205	-305
33	58	-006	-106	-206	-306
33	71	-007	-107	-207	-307
36	37	-008	-108	-208	-308
37	58	-009	-109	-209	-309
39	53	-010	-110	-210	-310
41	51	-011	-111	-211	-311
41	53	-012	-112	-212	-312
53	53	-013	-113	-213	-313
38	43	-014	-114	-214	-314
20	30 3/4	-015	-115	-215	-315
38	46	-016	-116	-216	
60	96			-221	

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION
A	C1500T	MGP	3-04-80	Added -3xx, Fawn
B	C1500T	MGP	11-24-80	See Sht. 2 of 2
C1	94197	DAW	5-4-81	ADDED SHT SIZE 38x46
C2	94197	DAW	5-4-81	ADDED DASH NOS. 216 116 316

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION

COMPILED	MGP	DATE DRAWN			UNIT OF MEASURE
APPROVED	BCK	6/27/79			EACH

Portland FREIGHTLINER CORPORATION Oregon 97208

B M/F C

ORIGINAL JOB NO.	TITLE	PART NO.
C0910	SHEET, ABS, CAB LINING	48-02289
LAST CHG LTR C		SHEET 2 OF 2

COLOR	MANUFACTURER'S IDENTIFICATION		"STANDARD" UPHOLSTERY USES:	
	CODE	DESCRIPTION	BINDING (FTL. NO.)	THREAD (FTL. NO.)
BROWN	AAL	Color #701	48-2109-102	48-2175-002
PEWTER	AAL	Color #864	48-2109-101	48-2175-001
LT. OAK	AAL	Color #710	48-2109-103	48-2175-003
FAWN	AAL	Color #404 (B)	48-2109-104	48-2175-002

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION
A	C1500T	MGP	3-04-80	Added "Fawn"
B	C1500T	MGP	11-24-80	Added: Color #404
C	94197	DAW	5-4-81	SEE SHT. 1 OF 2.

SPECIFICATIONS

1. Physical Properties:

Tensile Strength @ 73° F., PSI	3700
Flexural Modulus @ 73° F., PSI x 10^5	2.3
Hardness @ 73° F., Rockwell (R Scale), MIN.	81
Heat Deflection Temp. @ 264 PSI (Annealed), F°	220
Notched Izod @ 73° F., Ft-Lb/Inch	8.0
Notched Izod @ -40° F., Ft-Lb/Inch	1.8

2. Surface Texture: ROE Pattern No. 50RE51-2.

3. Must pass Federal Motor Vehicle Safety Standard No. 302, Flammability of Interior Materials.

④ When any change is made to the specification numbers, specification sheet 48-02290 MUST be checked to determine if corresponding changes need to be made.

		DATE DRAWN			UNIT OF MEASURE
COMPILED	MGP	6/27/79			EACH
APPROVED	OBK				

Portland FREIGHTLINER CORPORATION Oregon 97208

C B M/F

ORIGINAL JOB NO.	TITLE	PART NO.
C0910D	SHEET, ABS, CAB LINING, PERFORATED	48-02290
LAST CHG LTR B		SHEET 1 OF 2

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION
A	C1500T	MGP	3-04-80	Added -3xx "Fawn"
B	C1500T	MGP	11-24-80	See Sht. 2 of 2

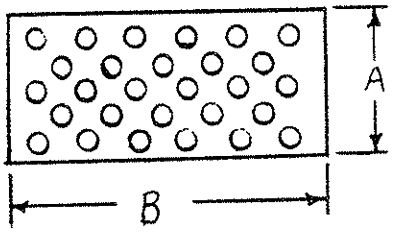
SCOPE This specification identifies extruded Acrylonitrile-Butadiene-Styrene (ABS) Plastic Sheet.

APPLICATION Perforated Cab Lining, with ½" Foam Backing.

NOTE: This material has been perforated according to a specific pattern per Freightliner Process Spec. 49-00033-000.

SKETCH

Material is .047 Thick.



SPECIFICATION NUMBERS ④ (See Page 2).
* Dash No.: 1st Digit = Color Code; Last 2 Digits = Specific Sheet Size.

SIZE		FREIGHTLINER SPECIFICATION NUMBERS * 48-02290 COLOR			
A DIM	B DIM	BROWN	PEWTER	LT OAK	FAWN
18	32	-000	-100	-200	-300
22	39	-001	-101	-201	-301
22	51	-002	-102	-202	-302
32	74 3/4	-003	-103	-203	-303
33	46	-004	-104	-204	-304
33	51	-005	-105	-205	-305
33	58	-006	-106	-206	-306
33	71	-007	-107	-207	-307
36	37	-008	-108	-208	-308
37	58	-009	-109	-209	-309
39	53	-010	-110	-210	-310
41	51	-011	-111	-211	-311
41	53	-012	-112	-212	-312
53	53	-013	-113	-213	-313
38	43	-014	-114	-214	-314
20	30 3/4	-015	-115	-215	-315

COMPILED	MGP	DATE DRAWN			UNIT OF MEASURE
APPROVED	RBK	6/27/79			EACH

Portland FREIGHTLINER CORPORATION Oregon 97208

B M/F

ORIGINAL JOB NO.	TITLE	PART NO.
C0910 D	SHEET, ABS, CAB LINING, PERFORATED	48-02290
LAST CHG LTR B		SHEET 2 OF 2

COLOR	MANUFACTURER'S IDENTIFICATION		"STANDARD" UPHOLSTERY USES:	
	CODE	DESCRIPTION	BINDING (FTL. NO.)	THREAD (FTL. NO.)
BROWN	AAL	Color #701	48-2109-102	48-2175-002
PEWTER	AAL	Color #864	48-2109-101	48-2175-001
LT. OAK	AAL	Color #710	48-2109-103	48-2175-003
FAWN	AAL	Color #404 (B)	48-2109-104	48-2175-002

SPECIFICATIONS

1. Physical Properties:

Tensile Strength @ 73° F., PSI	3700
Flexural Modulus @ 73° F., PSI x 10^5	2.3
Hardness @ 73° F., Rockwell (R Scale), MIN	81
Heat Deflection Temp. @ 264 PSI (Annealed), F°	220
Notched Izod @ 73° F., Ft-Lb/Inch	8.0
Notched Izod @ -40° F., Ft-Lb/Inch	1.8

2. Surface Texture: ROE Pattern No. 5ORE51-2.

3. Must pass Federal Motor Vehicle Safety Standard No. 302, Flammability of Interior Materials.

④ When any change is made to the specification numbers, specification sheet 48-02289 MUST be checked to determine if corresponding changes need to be made.

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION
A	C1500T	MGP	3-04-80	Added "Fawn"
B	C1500T	MGP	11-24-80	Added: Color #404

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION

COMPILED	MGP	DATE DRAWN			UNIT OF MEASURE
APPROVED	BCK	6/27/79			EACH

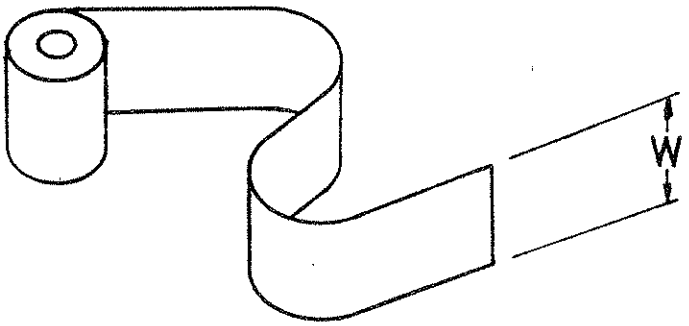
B M/F

ORIGINAL JOB NO.	TITLE	PART NO.
C1500a	FOIL, HOT STAMP	48-02292
LAST CHG LTR		SHEET 1 OF 1

SCOPE This specification identifies a hot stamping transfer foil.

APPLICATION This foil is used for imprinting all thermoplastic and some thermoset material.

SKETCH



W WIDTH (INCHES)	THICK	COLOR	MANUFACTURER'S NUMBERS ACI		FREIGHTLINER SPECIFICATION NUMBERS
.25	½ MIL	WHITE			48-02292-000

SPECIFICATIONS

(1) Material: Mylar carrier with pigmented surface.

2. Finish: Hard gloss.

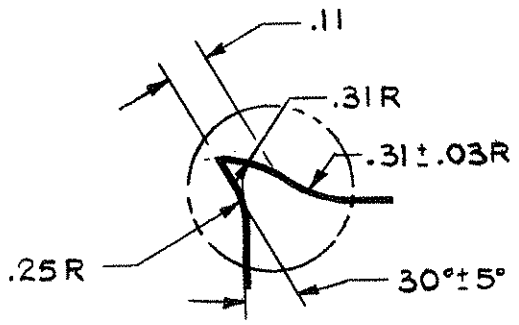
CHANGE INFORMATION	DATE	BY	JOB NO.	LTR

CHANGE INFORMATION	DATE	BY	JOB NO.	LTR

COMPILED	D. LeL.	DATE DRAWN		MATERIAL	UNIT OF MEASURE
APPROVED		7-24-79		(1)	FEET

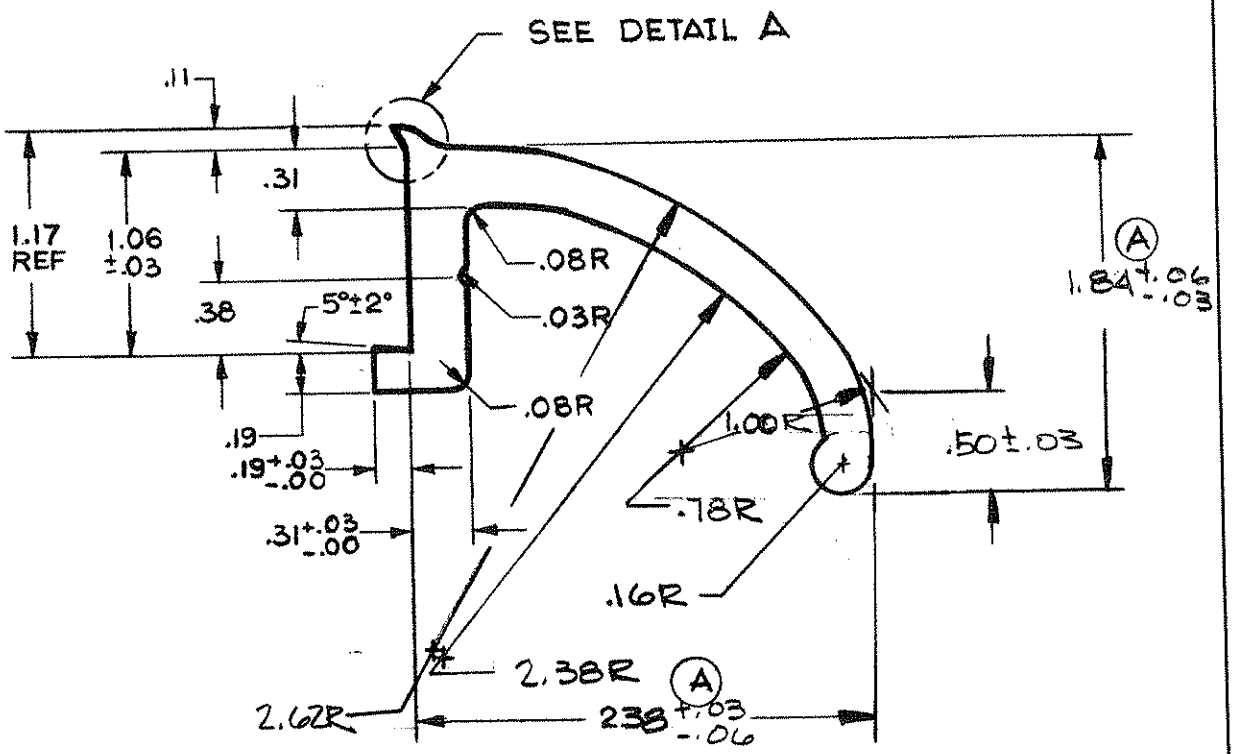
ORIGINAL JOB NO.	TITLE	PART NO.
C1500S	MOULDING, FENDER, EXTRUSION	48-02293
LAST CHG LTR B		SHEET 1 OF 1

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION
A1	C1500S	MS	10-1-80	CHG .11, 2.50 TO 1.84, 2.38
A2	C1500S	MS	10-1-80	70A TO 80A
B	C1659	TC	1-9-81	NO CHG, Relsd early



DETAIL A
DOUBLE SCALE

1. UNLESS OTHERWISE SPECIFIED, ALL TOLERANCES TO BE ±.01
2. MAT'L: EPDM (A) DUROMETER - 80A



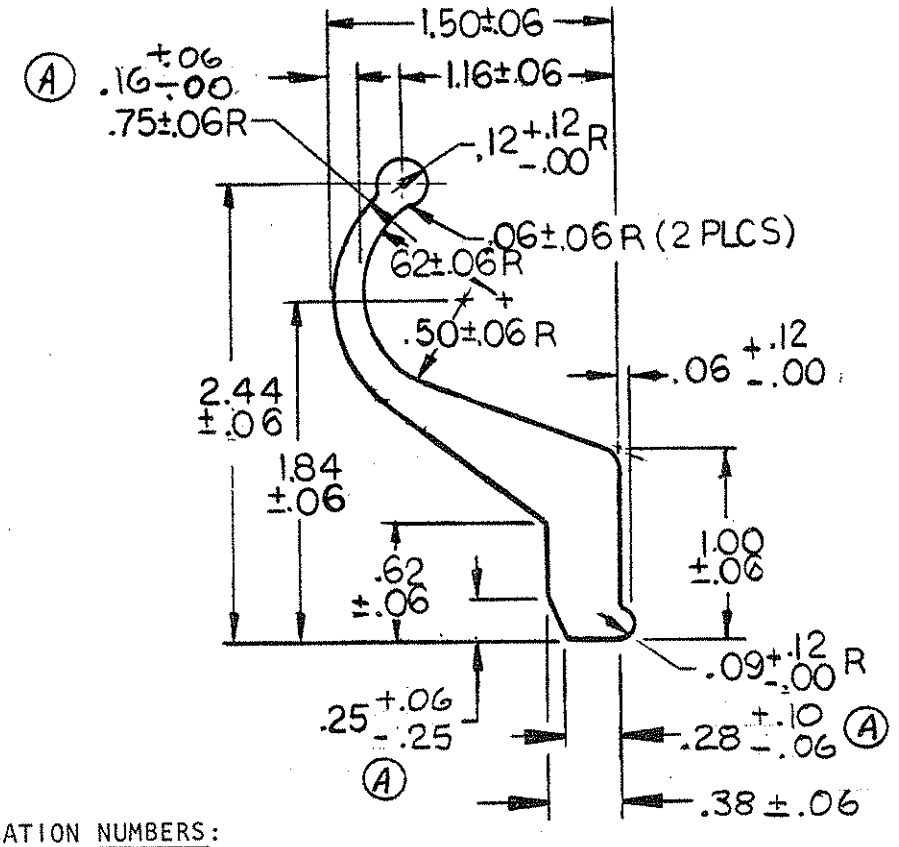
		DATE DRAWN			
COMPILED	BEL	8-14-79			
APPROVED	MEA				

ORIGINAL JOB NO.	TITLE	PART NO.
C1369	EXTRUSION, COWL LACING	48-2294
LAST CHG LTR A		SHEET 1 OF 1

SCOPE: This specification identifies a neoprene extrusion.

APPLICATION: Cowl lacing for conventionals with fiberglass and heavy duty hoods.

SKETCH:



SPECIFICATION NUMBERS:

	MATERIAL ①	WEIGHT LB/FT	EXT. DIE NO.	FREIGHTLINER PART NUMBER
		.50	GRR/37032	48-2294-000

SPECIFICATIONS:

① Material: Neoprene 50-55 Durometer
ASTM D2000, 3BC 615 A14 B14 C12 E014 E034 F17

2. Finish: As extruded.

COMPILED	Blake-wood CAB	DATE DRAWN			UNIT OF MEASURE
APPROVED	GEH	9-5-79			FT.

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION
A	76989	DSH	11-19-79	3 TO .16 & REVISED TOL'S.

ORIGINAL JOB NO.	TITLE	PART NO.
C1500T	SHEET, ABS, PLASTIC	48-2295
LAST CHG LTR B		SHEET 1 OF 2

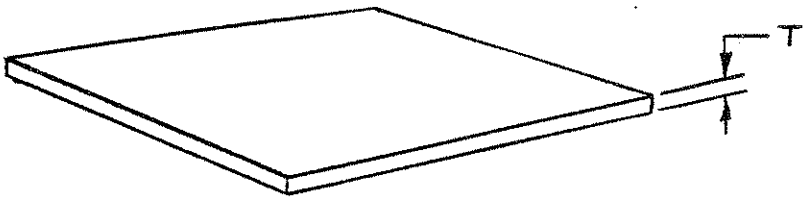
LTR	JOB NO.	BY	DATE	CHANGE INFORMATION

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION
A	C1500T	MGP		Added -105
B	C1500T	MGP	11-24-80	Added: #362 & #363

SCOPE: This specification identifies extruded Acrylonitrile-Butadiene-Styrene (ABS) plastic sheet.

APPLICATION: Thermoformed parts.

SKETCH



SPECIFICATION NUMBERS

THICKNESS	COLOR	MANUFACTURER'S IDENTIFICATION		FREIGHTLINER SPECIFICATION NUMBERS*
		AAL (B)		
.060 .080 .090 .125 .140 .160 .187 .200 .250	Saddle	Atlas #363		48-2295-006 -008 -009 -012 -014 -016 -019 -020 -025
.047 .060 .080 .090 .125 .140 .160 .187 .200 .250	Mocha	Atlas #362		48-2295-105 -106 -108 -109 -112 -114 -116 -119 -120 -125

*Dash Number: 1st digit= Color code: Last 2 digits= thickness in 1/100's inch

SPECIFICATIONS

1. Physical Properties:

Tensile Strength @ 73° F., PSI	3700
Flexural Modulus @ 73° Fl, PSI x 10^5	2.3
Hardness @ 73° F., Rockwell (R Scale), MIN.	81
Heat Deflection Temp. @ 264 PSI (Annealed), F°	220
Notched Izod @ 73° F., Ft-Lb/Inch	8.0
Notched Izod @ -40° F., Ft-LB/Inch	1.8

COMPILED	MGP	DATE DRAWN			Unit of measure
APPROVED	REL	3-7-80			SQUARE FEET

ORIGINAL JOB NO.	TITLE	PART NO.
C1500T	SHEET, ABS, PLASTIC	48-2295
LAST CHG LTR B		SHEET 2 OF 2

SPECIFICATIONS CONT.

2. Surface Texture: ROE Pattern No. 50RE51-2.

3. Must pass Federal Motor Vehicle Safety Standard No. 302, Flammability of Interior Materials.

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION
A	C1500T	MGP		See Sht. 1 of 2
B	C1500T	MGP	11-24-80	See Sht. 1 of 2

COMPILED	MGP	DATE DRAWN			Unit of Measure
APPROVED	BEL	3-7-80			SQUARE FEET

ORIGINAL JOB NO.	TITLE	PART NO.
C0910A	STRUCTURAL ADHESIVES	48-02296
LAST CHG LTR		SHEET 1 OF 2

CHANGE INFORMATION | LTR | JOB NO. | BY | DATE

SCOPE: This specification identifies structural adhesives and activators.

APPLICATION: Used for adhesive bonding and sealing aluminum or steel joints.

SPECIFICATION NUMBERS:

USAGE	PRODUCT	MFR	FREIGHTLINER SPECIFICATION NUMBER
1.) Structural Adhesives			
	-Loctite Speed Bonder #324 (1)(2)	LOC	48-02296-101
2.) Activators and Primers (Accelerates Cure)			
	-Locquic Activator #707 (2)	LOC	48-02296-201
	-Depend Activator #738 (2)	LOC	48-02296-202

(1) See Sheet 2 for typical product properties and typical strength properties.

(2) See Process Specification 49-00034 for application procedures.

CHANGE INFORMATION | LTR | JOB NO. | BY | DATE

COMPILED	BEL	DATE DRAWN			
APPROVED	BBK	10-19-79			

ORIGINAL JOB NO.	TITLE	PART NO.
C0910A	STRUCTURAL ADHESIVES	48-02296
LAST CHG LTR		SHEET 2 OF 2

CHANGE INFORMATION | LTR | JOB NO. | BY | DATE

CHANGE INFORMATION | LTR | JOB NO. | BY | DATE

TYPICAL PRODUCT PROPERTIES

	Speedbonder 324
Base	Polyester
Color	Dark Amber
Fluorescence	None
Specific Gravity	1.1-1.2
Viscosity (cps)	10,000-25,000 cps
Toxicity	Mild Sensitizer
Flash Point	>200°F (93°C)
Shelf Life	1 year
Corrosivity	Low
Gap Filling Ability	0.030"

Typical Strength Properties (Adhesive Cured at Room Temperature)

TEST	Speedbonder 324 Bondline	
	2 Mil	20 Mil
Tensile-Shear (psi) ASTM D-1002-65		
Aluminum	3300	3600
Steel	3200	4400
Tensile (psi) ASTM D-2095-627	5000	-
Impact - ft-lb/in^2 ASTM D-950-54	10	35
T-Peel (PIW) ASTM D-1876-61		
Aluminum	30	-
Steel	60	45
Fatigue Strength (psi) MMM-A-132		
Sandblasted Steel	1000	-

NOTE: (-) indicates data is not available.

		DATE DRAWN			
COMPILED	BEL	10-19-79			
APPROVED	BBK				

Materials Specification

ORIGINAL JOB NO.	TITLE	PART NO.
B1313	POWER STEERING HYDRAULIC FLUID	48-2297
LAST CHG LTR		SHEET 1 OF 1

SCOPE This specification identifies a type of fluid for transmitting hydrodynamic energy in a power steering system and suitably transferring heat to maintain necessary operating temperature range of the power steering system.

APPLICATION Drive fluid in power steering systems.

CHANGE INFORMATION	DATE	BY	JOB NO.	LTR

SPECIFICATION NUMBERS

DESCRIPTION ①	MFR'S IDENTIFICATION		FREIGHTLINER SPECIFICATION NUMBERS
	MFR	PRODUCT	
Engine Oil Approved for Power Steering	Mobil Union Texaco	Engine Oil SAE 10W 40	48-2297-000

CHANGE INFORMATION	DATE	BY	JOB NO.	LTR

SPECIFICATIONS

① Material: See table above.

2. Sulphated Ash Content Must Not Exceed 1.85%.

					UNIT OF MEASURE
COMPILED	Evens	DATE DRAWN			QT.
APPROVED		11/7/79			

48-02299

Materials Specification

ORIGINAL JOB NO.	TITLE	PART NO.
C1850 J	DUCT, FLEXIBLE 100% ELASTOMERIC, WIRE REINF.	48-02299
LAST CHG LTR C		SHEET 1 OF 1 (B3)

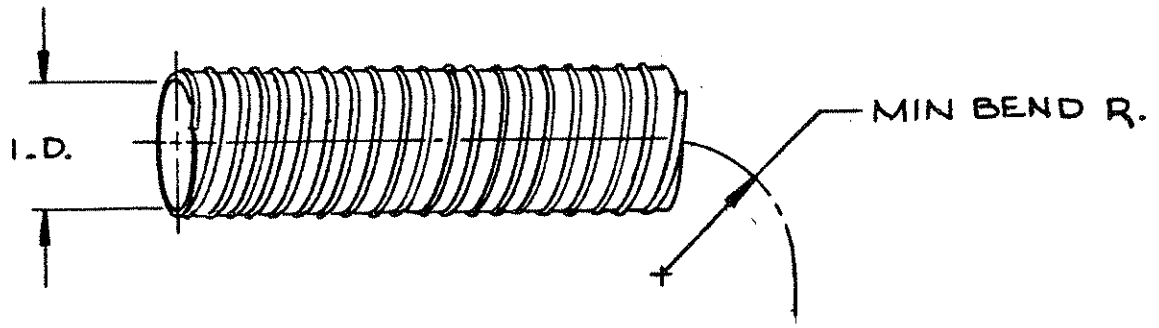
LTR	JOB NO.	BY	DATE	CHANGE INFORMATION
B3	C1850J	JRP	1-21-81	DELETED SHT 2
C	C1919	RHS	1-19-82	ADDED -350

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION
A	C1850J	JRP	8-1-80	DWG TO X4 NU
B	C1850J	JRP	1-21-81	DWG FROM X4 TO C
B1	C1850J	JRP	1-21-81	ADDED -150 & -250
B2	C1850J	JRP	1-21-81	CHG'D MFGR & HOSE TYPE

SCOPE This specification identifies wire reinforced 100% Elastomiric - no fabric reinforcement duct tubing.

APPLICATION Light duty air handling, mist collection, light dust handling, automotive defrosters, and air conditioners.

SKETCH



SPECIFICATION NUMBERS (B2)

NOM. SIZE (I.D.)	MIN CTRLINE BEND R	HOSE WALL GAUGE	PITCH	MANUFACTURER'S NO.		FREIGHTLINER SPECIFICATION NUMBER
1.50	.75	.020	3/4"	ORC	* (B1)	48-02299-150
2.50	1.25	.020	3/4"		(B1)	48-02299-250
3.00	1.50	.020	3/4"			48-02299-300
3.50	1.75	.020	3/4"		(C)	48-02299-350

(B2)
* Type 493; order by nominal size

SPECIFICATIONS

(1) Material: 100% Elastomeric, no fabric reinforcement, with steel wire helix reinforcement.

2. Construction: 100% Elastomeric, with no fabric reinforcement, single ply shaped with an enclosed steel helix wire reinforcement.

3. Temperature Range: -40°F. to 250°F. (-40°C to 131°C).

4. Color: Black

5. Flammability: Must pass requirements of Federal Motor Vehicle Safety Std. 302, Flammability of Interior Materials.

COMPILED	JRP	DATE DRAWN		MATERIAL	UNIT OF MEASURE
APPROVED		5/21/80		(1)	FT.

Portland FREIGHTLINER CORPORATION Oregon 97208

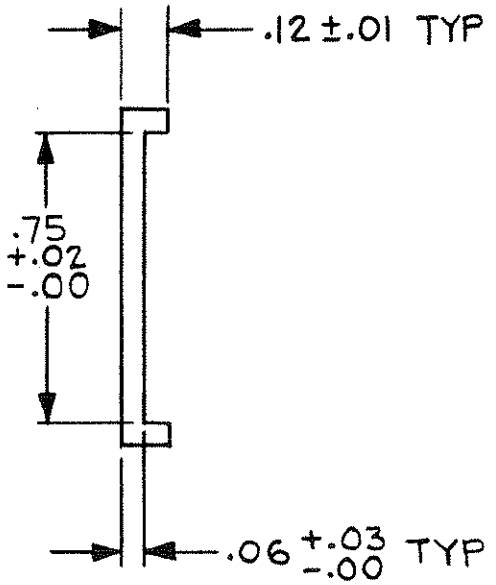
CB (B)

48-02300

ORIGINAL JOB NO.	TITLE	PART NO.
D2395	EXTRUSION, RUBBER, CLAMP BACKING	48-02300
LAST CHG LTR		SHEET 1 OF 1

SCOPE: This specification identifies ethylene propylene rubber.

APPLICATION: As backing material for the clamps used on the air intake snorkels.



SPECIFICATION NUMBERS:

	MATERIAL (1)	MFG. EXTRUSION DIE NUMBER	FREIGHTLINER SPEC. NUMBER
	Rubber		48-02300-0

SPECIFICATIONS:

(1) Material: ASTM, 2BA715A14B13E34,70 Durometer, EPDM.

COMPILED	SB	DATE DRAWN			UNIT OF MEASURE
APPROVED		6/4/80			FT.

CHANGE INFORMATION

LTR	JOB NO.	BY	DATE

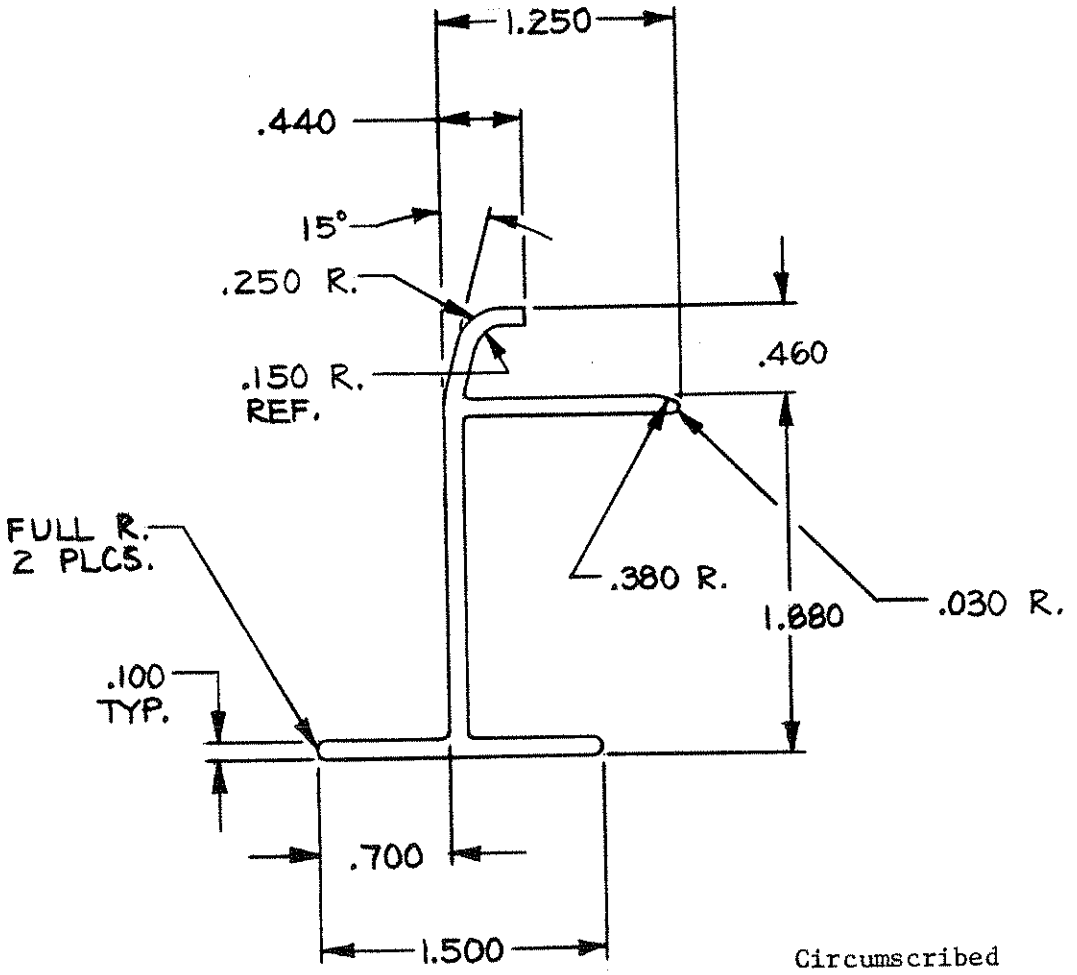
CHANGE INFORMATION

LTR	JOB NO.	BY	DATE

MATERIAL SPECIFICATION

ORIGINAL JOB NO.	TITLE	PART NO.
C0910 A	EXTRUSION, FRAME OPENING, DOOR	48-02303
LAST CHG LTR C		SHEET 1 OF 1

Scope: This specification identifies a metal extrusion.
Application: Cab door frame.
Sketch:



Circumscribed
Diameter: 2.75

LENGTH	Extrusion Die No.	Material ①	Weight lb/ft	Freightliner Specification Number
	247524	6061-T4	.604	48-02303-000

(C) (B)

Specifications:
1. Material: Aluminum (see table)
2. Finish: As extruded.
3. Commercial extrusion tolerances unless otherwise stated.
4. Corner radii .030 ~~except~~ as noted.

		DATE DRAWN		MATERIAL	UNIT OF MEASURE
COMPILED	TT	10-31-77		①	FT
APPROVED	NLK				

CHANGE INFORMATION				
LTR	JOB NO.	BY	DATE	
A	C0910 A	JK	11-1-77	REV. & REDRAWN
B	80071B	WM	2-7-84	ADDED -001 & -002 thru
C	80071B	SF	5-10-84	DELETED -1 & -2

CHANGE INFORMATION			
LTR	JOB NO.	BY	DATE

DRAWN	ERK	TITLE FOAM CLOSED CELL	ITEM NUMBER 48-02308
APPRV	KCB		
DATE	04/20/90	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1

SCOPE: THIS SPECIFICATION IDENTIFIES 3.0-4.5 PCF CLOSED CELL FLEXIBLE CELLULAR MATERIAL WITH, OR WITHOUT, PRESSURE SENSITIVE ADHESIVE BACKING AS NOTED.

APPLICATION: GENERAL USE, GASKETS, INSULATION, AND SHOCK ABSORPTION.

SPECIFICATION NUMBERS:

THICKNESS	ADHESIVE BACKED	FREIGHTLINER SPECIFICATION NUMBER
.063	NO	48-02308-006
.094	NO	-
.125	NO	-012
.188	NO	-
.250	NO	-025
.375	NO	-038
.500	NO	-050
.500	YES	-150
.625	NO	-

C

C TYPICAL PROPERTIES:

1. MATERIAL: UNIROYAL ENSOLITE MLC.
2. PRESSURE SENSITIVE BACKING WITH .5 MIL MYLAR CARRIER.

D 3. COLOR: VARIOUS

4. MUST MEET APPLICABLE PROVISIONS OF FMVSS #302, FLAMABILITY OF INTERIOR MATERIALS.
5. DIMENSIONAL TOLERANCES TO BE IN ACCORDANCE WITH RUBBER MANUFACTURERS ASSOCIATION HANDBOOK.
6. PHYSICAL REQUIREMENTS PER SPONGE- AND EXPANDED CELLULAR- RUBBER PRODUCTS, SAE J18 JAN85, SCE 41; AUG88, 2C1.

CHG	JOB/RLSE NO	DATE	BY	REVISION
C	PX2601-13	04/20/90	ERK	REVISED AND REDRAWN; ADDED -150.
D	PA2024-32	06/07/90	ERK	REVISED COLOR

48-02309

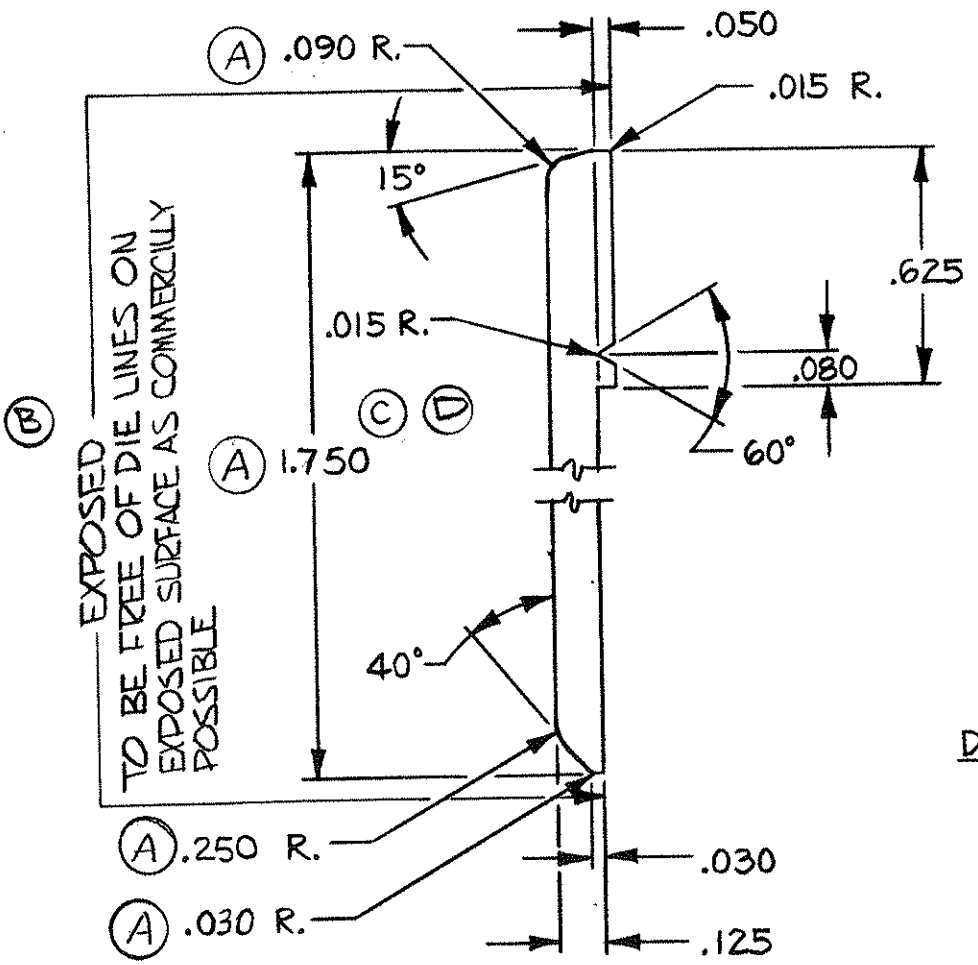
MATERIAL SPECIFICATION

ORIGINAL JOB NO.	TITLE	PART NO.
C0910	EXTRUSION, ALUMINUM	48-02309
LAST CHG LTR D		SHEET 1 OF 1

SCOPE: This specification identifies a metal extrusion.

APPLICATION: Door finish molding.

SKETCH:



DOUBLE SCALE

	EXTRUSION DIE NO.	MATERIAL (1)	WEIGHT lb/ft	FREIGHTLINER SPECIFICATION NUMBER
		6063-T6		48-02309-000

SPECIFICATIONS:

(1.) Material: Aluminum (See Table)
2. Finish: As extruded
3. Commercial extrusion tolerances unless otherwise specified.

COMPILED	JK	DATE DRAWN		MATERIAL	UNIT OF MEASURE
APPROVED	NLK 8-24	11-9-77		(1)	FT

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION
A	C0910 A	DG	1-31-78	REV. DIMS.
B	7445	WTM	3-11-81	ADDED NOTE
C	76139	NR	7-27-81	ADDED 32V
D	0330B	MS	4-28-82	DELETED 32V

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION

E-183A Litho in USA Portland **FREIGHTLINER CORPORATION** Oregon 97208

D A B

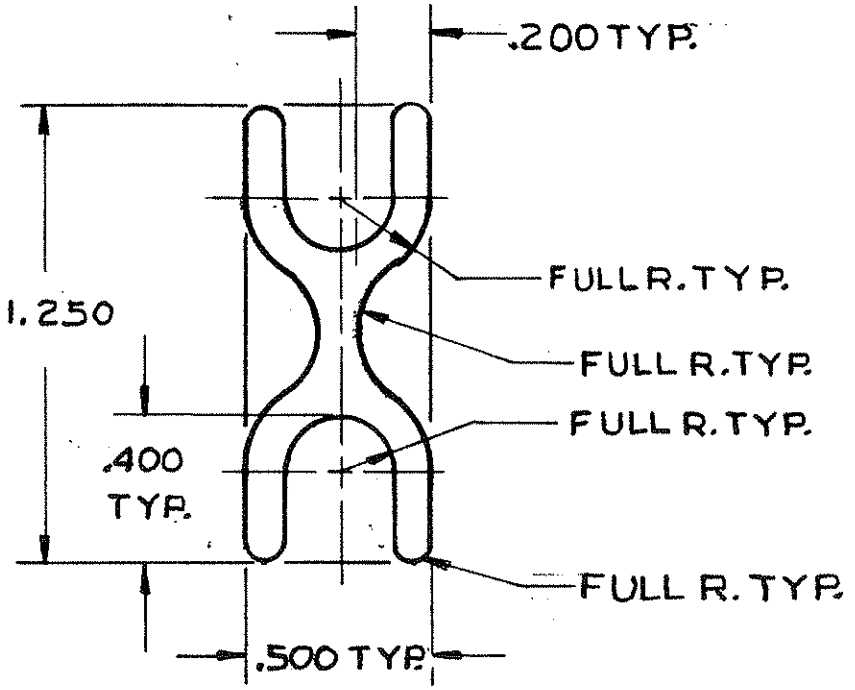
48-02310

ORIGINAL JOB NO.	TITLE	PART NO.
C1500P (A)	EXTRUSION, ALUMINUM	48-02310
LAST CHG LTR B		SHEET 1 OF 1

SCOPE: This specification identifies a metal extrusion.

APPLICATION: Used as a spacer for cab step.

SKETCH:



WALL THICKNESS: .100

SPECIFICATION NUMBERS

	EXTRUSION DIE NO.	MATERIAL	WEIGHT	FREIGHTLINER SPECIFICATION NUMBER
	ALU	(1)	LB/FT	
		6061 T4	.300	48-02310-000

(B)

SPECIFICATIONS

(1.) Material: Aluminum (see table)

2. Finish: As extruded

3. Commercial extrusion tolerance unless otherwise specified

(B)

COMPILED	DC	DATE DRAWN		MATERIAL	UNIT OF MEASURE
APPROVED	BK	12-13-77		(1)	LBS.

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION

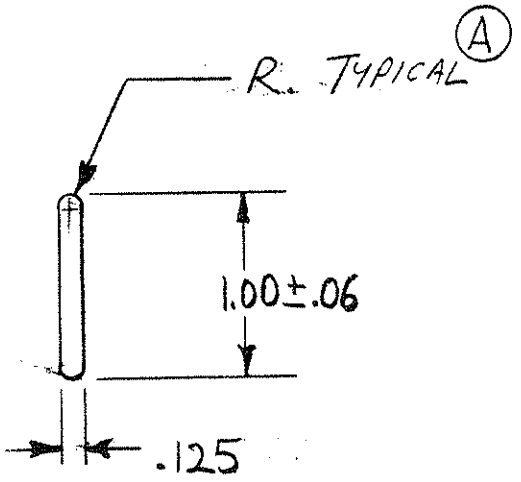
LTR	JOB NO.	BY	DATE	CHANGE INFORMATION
A	C1500P	DB	2-11-80	C1500G TO C1500P
B	2767 B	TTR	03-31-82	Add .300 LBS. FT. to LBS.

ORIGINAL JOB NO.	TITLE	PART NO.
C1188	EXTRUSION, RUBBER FENDER SUPPORT	48-2311
LAST CHG LTR B		SHEET | OF |

SCOPE: This specification identifies the configuration of a particular aluminum extrusion.

Application: Rubber fender support for C.O.E and Powerliner.

SKETCH:



SPECIFICATION NUMBERS

	MATERIAL (1)	MFG. EXTRUSION DIE NUMBER	FREIGHTLINER SPEC. NUMBER
	Aluminum	KAS HK495 (A)	48-2311-0
Alternate	Aluminum	ALU, 6178-1 (A)	

SPECIFICATIONS:

(1) Material: ~~6063~~-T6 (A)
2. Finish: As extruded.
(3)

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION
A	C1188	GEH	4/7/78	EXTRUSION NOS. & MAT'L
B	C1188	GEH	8/15/78	REMOVE 11 in. CALL OUT

COMPILED	JE	DATE DRAWN			UNIT OF MEASURE
APPROVED		1-12-78			FEET

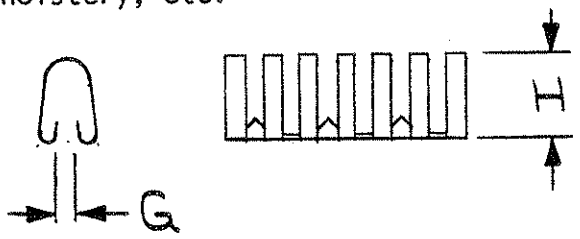
MATERIALS SPECIFICATION

STATUS NU

ORIGINAL JOB NO.	TITLE	PART NO.
C1500A	EDGE RETAINER, METAL	48-02312
LAST CHG LTR		SHEET 1 OF 1

SCOPE: This specification identifies flexible metal edge retainer
APPLICATION: Upholstery, etc.

SKETCH:



SPECIFICATION NUMBERS

	G GRIP MIN-MAX	H			MANUFACTURER'S NUMBERS GTC		FREIGHTLINER SPECIFICATION NUMBERS
	.12-.19	.44			0131SD		48-02312-001

SPECIFICATIONS

1. MATERIAL: Flexible Metal

		DATE DRAWN			UNIT OF MEASURE
COMPILED	DMC	3/8/78			FT.
APPROVED	DL				

CHANGE INFORMATION

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION

CHANGE INFORMATION

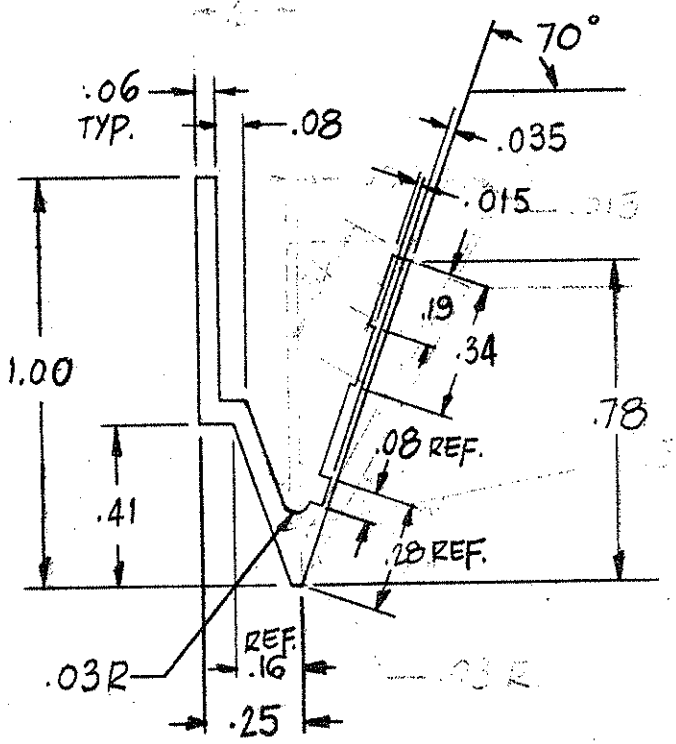
LTR	JOB NO.	BY	DATE	CHANGE INFORMATION

STATUS NC, X1

ORIGINAL JOB NO.	TITLE	PART NO.
C1190C	EXTRUSION, ALUMINUM (GLASS SEAL RETAINER STRIP)	48-02318
LAST CHG LTR A		SHEET 1 OF 1

SCOPE: This specification identifies a particular aluminum extrusion.

SKETCH



SPECIFICATION NUMBERS:

	MATERIAL	WT. LB/FT	EXTRUSION DIE NUMBER		FREIGHTLINER SPECIFICATION NUMBER
	1	.154			48-2318-000

SPECIFICATIONS:

1. Material: 6063 - T5 Alum.
2. Finish: As Extruded
3. Tolerance: Commercial tolerance or otherwise specified.

COMPILED	Dang	DATE DRAWN			Unit of Measure
APPROVED	DRS	8-10-78			FT.

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION

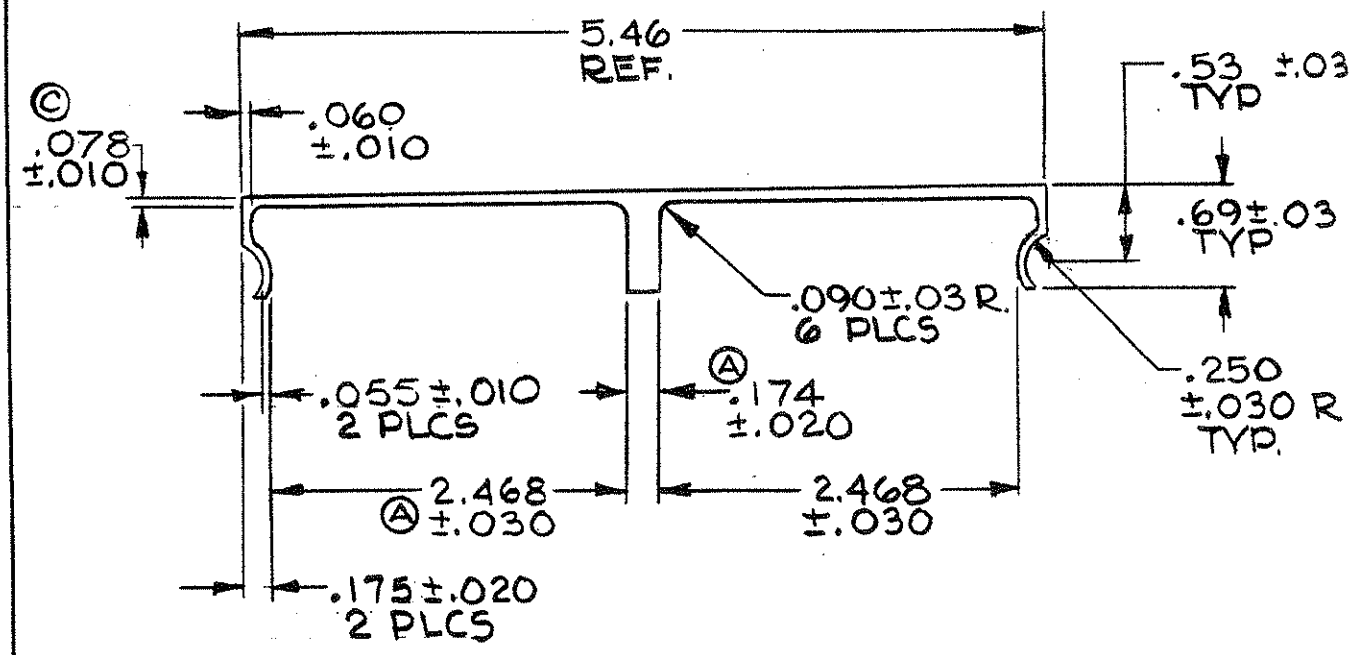
TR	JOB NO.	BY	DATE	CHANGE INFORMATION
A	C1190C	HD	3-22-79	STATUS TO NC, X1

ORIGINAL JOB NO.	TITLE	PART NO.
C1500D	CORE EXTRUSION	48-2324
LAST CHG LTR C		SHEET 1 OF 1

SCOPE: This specification identifies an aluminum extrusion.

APPLICATION: Brkt. Coil Support, 71 Series Cab

SKETCH:



SPECIFICATION NUMBERS

	WT LB/FT	MATERIAL	DIE NUMBERS		FREIGHTLINER SPECIFICATION NUMBER
		1.			48-2324-000

SPECIFICATION:
1. Material: Aluminum 6063-T5 (See Table).
2. Finish as extruded.

COMPILED	D.E.	DATE DRAWN		MATERIAL	UNIT OF MEASURE
APPROVED	JE	2/23/79		1	INCHES

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION

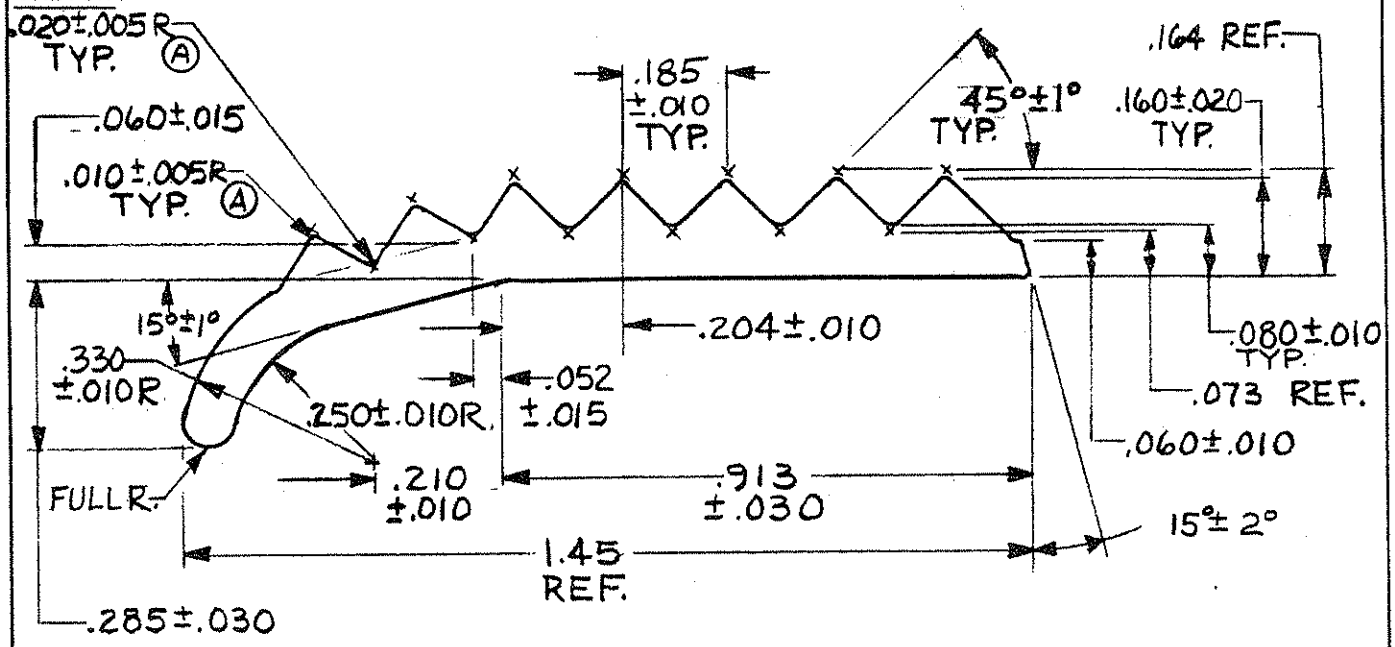
TR	JOB NO.	BY	DATE	CHANGE INFORMATION
	C1500D	JES	4-4-79	2.422, .220 To 2.468, .174 Was
B	C1500D	BE	6-20-79	.046±.012 To .055±.010 Was
C	C1500D	JE	8-24-79	.040 To .078

ORIGINAL JOB NO.	TITLE	PART NO.
C0910A	PLATE, TREAD, DOOR SILL EXTRUSION	48-02326
LAST CHG LTR A		SHEET 1 OF 1

SCOPE: This specification identifies an aluminum extrusion

APPLICATION: Door sill tread plate.

SKETCH:



1. SCALE - 3 TIMES
2. FILLETS .020 ± .005R
   ROUNDS .010 ± .005R

SPECIFICATION NUMBERS:

DESCRIPTION	MATERIAL (1)	H.T.	DIE NUMBER	FREIGHTLINER SPECIFICATION #
per sketch	6061	T6		48-02326-000

SPECIFICATIONS:

(1.) Aluminum - (see table)
2. Finish: - as extruded
(3.) Commercial extrusion tolerances apply - unless otherwise specified.

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION
A	C0910A	GK	10-12-79	.010R, .020 R TO .020R, .010R

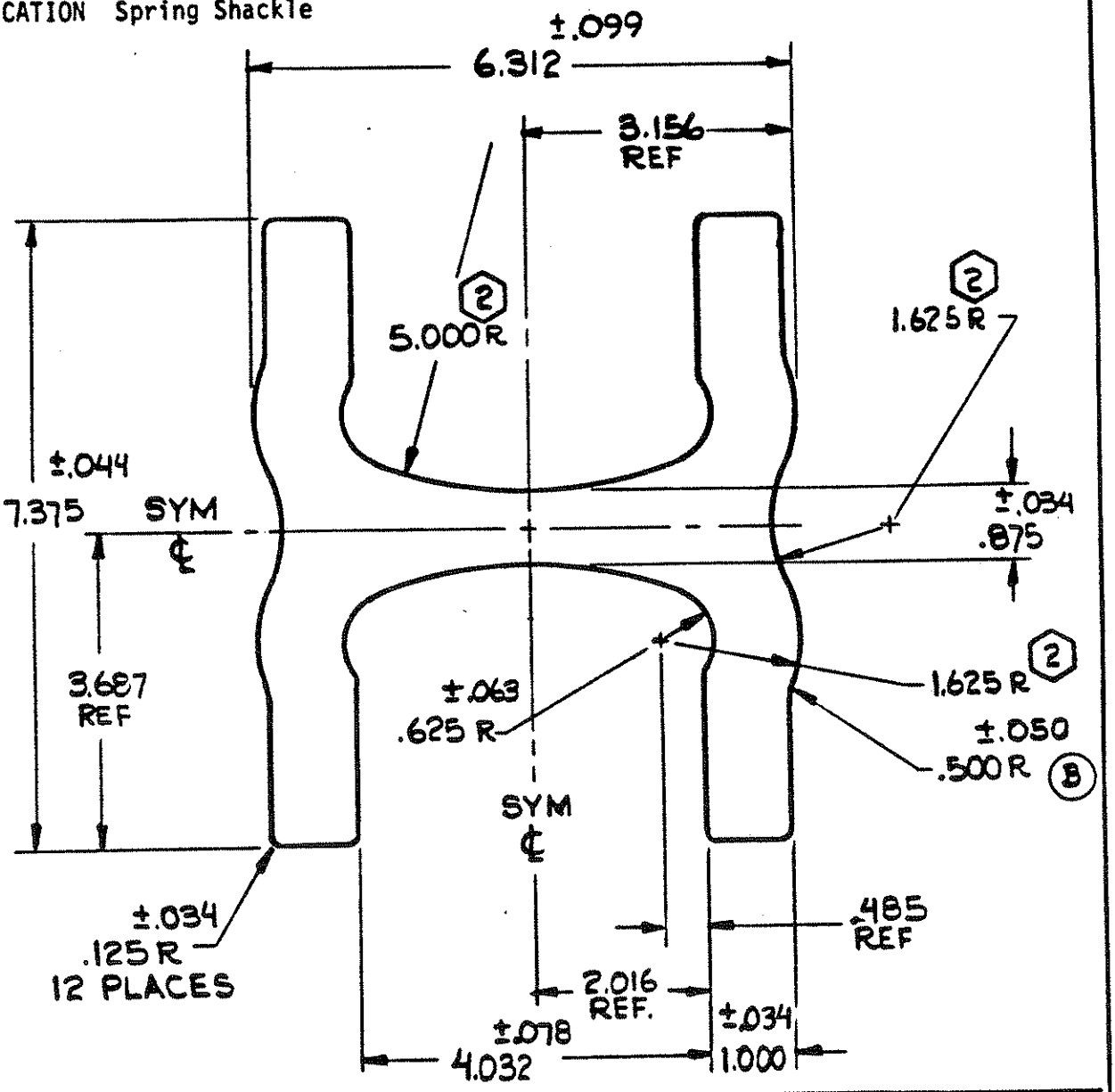
COMPILED	S.K.	DATE DRAWN			
APPROVED		6/20/79			

M/F A

ORIGINAL JOB NO.	TITLE	PART NO.
B1553	EXTRUSION, SPECIAL "H" , 4-4 (Spring Shackle)	48 - 02327
LAST CHG LTR: E		SHEET 1 OF 1

SCOPE This specification identifies a light metal H-section extrusion.

APPLICATION Spring Shackle



MATERIAL		EXTRUSION DIE NUMBER	FREIGHTLINER SPECIFICATION NUMBER
Alum. Alloy: 6061-T6			48-02327-000

NOTE: 1. Finish as extruded 4, 5, 6, 7

2. These dimensions are subject to a contour tolerance of ± .005 per inch of chord length.

COMPILED	S.WITT	DATE DRAWN			Unit of Measure
APPROVED		10-26-79			FT

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION
E	B1553	CM	9-15-81	FROM B1500 TO B15E

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION
A	B1553		7-22-80	REV & RED FOR MFR
B	B1553		9-19-80	.050 WAS .034
C	B1553		9-19-80	ADDED NOTE 2
D	B1553	JSJ	7-15-81	PROJECT TO B1553

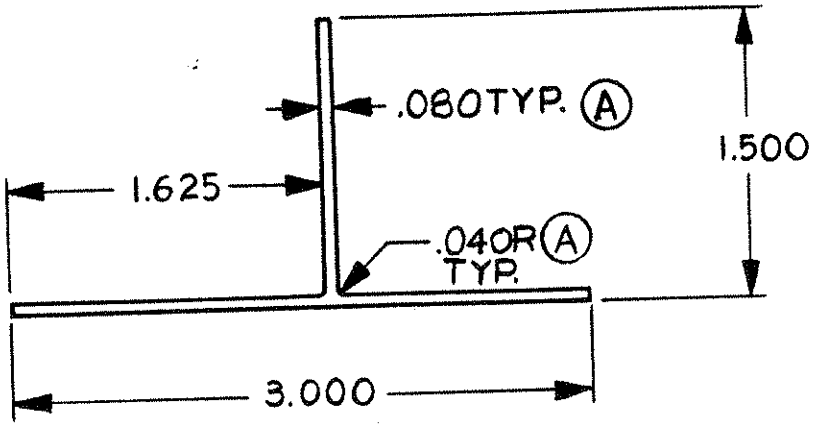
EAC-830 Portland FREIGHTLINER CORPORATION E Oregon 97208

ORIGINAL JOB NO.	TITLE	PART NO.
C1468	TEE, ALUMINUM, STRUCTURAL	48-02329
LAST CHG LTR B		SHEET 1 OF 1

SCOPE This specification identifies a light metal structural tee.

APPLICATION Sleeper Box Door Frame

SKETCH



Tolerance ± .012

SPECIFICATION NUMBERS

	MATERIAL	WEIGHT Lb/Ft	EXTRUSION DIE NUMBER	FREIGHTLINER SPECIFICATION NUMBER
	Aluminum 6061 T6			48-02329-000

SPECIFICATIONS

Finish: As Extruded

				UNIT OF MEASURE
COMPILED	Deyo	DATE DRAWN		FT
APPROVED	HADLEY	11/2/79		

CHANGE INFORMATION

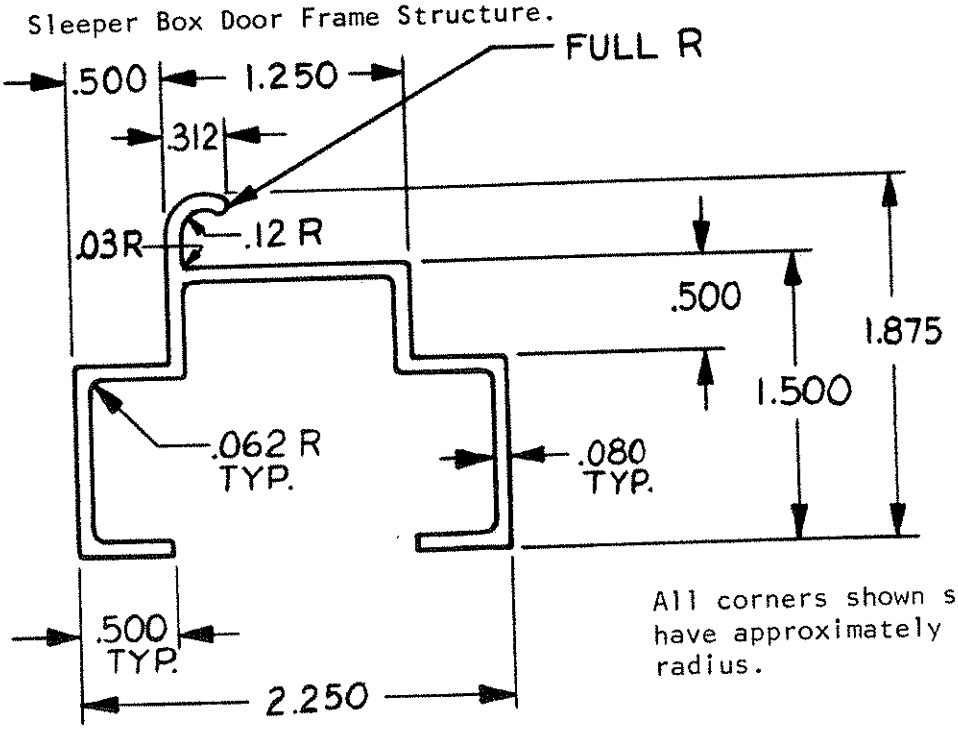
LTR	JOB NO.	BY	DATE	CHANGE INFORMATION
A	C1468	JSJ	4-6-81	.031, .062 TO .040, .080
B	C1468	JSJ	4/17/81	Added Tol. & Spec. No.

ORIGINAL JOB NO.	TITLE	PART NO.
C1468	EXTRUSION, DOOR FRAME CONV. SLEEPER	48-02330
LAST CHG LTR A		SHEET 1 OF 1

SCOPE This specification identifies an extruded light metal section.

APPLICATION Sleeper Box Door Frame Structure.

SKETCH



All corners shown sharp to have approximately .010 radius.

Tolerance ± .012

SPECIFICATION NUMBERS

	MATERIAL	WEIGHT Lb/Ft	EXTRUSION DIE NUMBER	FREIGHTLINER SPECIFICATION NUMBER
	Aluminum 6061 T6			48-02330-000

SPECIFICATIONS

1 Finish: As Extruded

		DATE DRAWN			UNIT OF MEASURE
COMPILED	Deyo	11/2/79			FT
APPROVED	HADLEY				

CHANGE INFORMATION			
LTR	JOB NO.	BY	DATE

CHANGE INFORMATION			
LTR	JOB NO.	BY	DATE
A	C1468	JSJ	4/17/81

Added Tolerance

ORIGINAL JOB NO.	TITLE	PART NO.
C1468	EXTRUSION, DOOR FRAME, 34 IN. CONV. SLEEPER	48-02331
LAST CHG LTR A		SHEET 1 OF 1

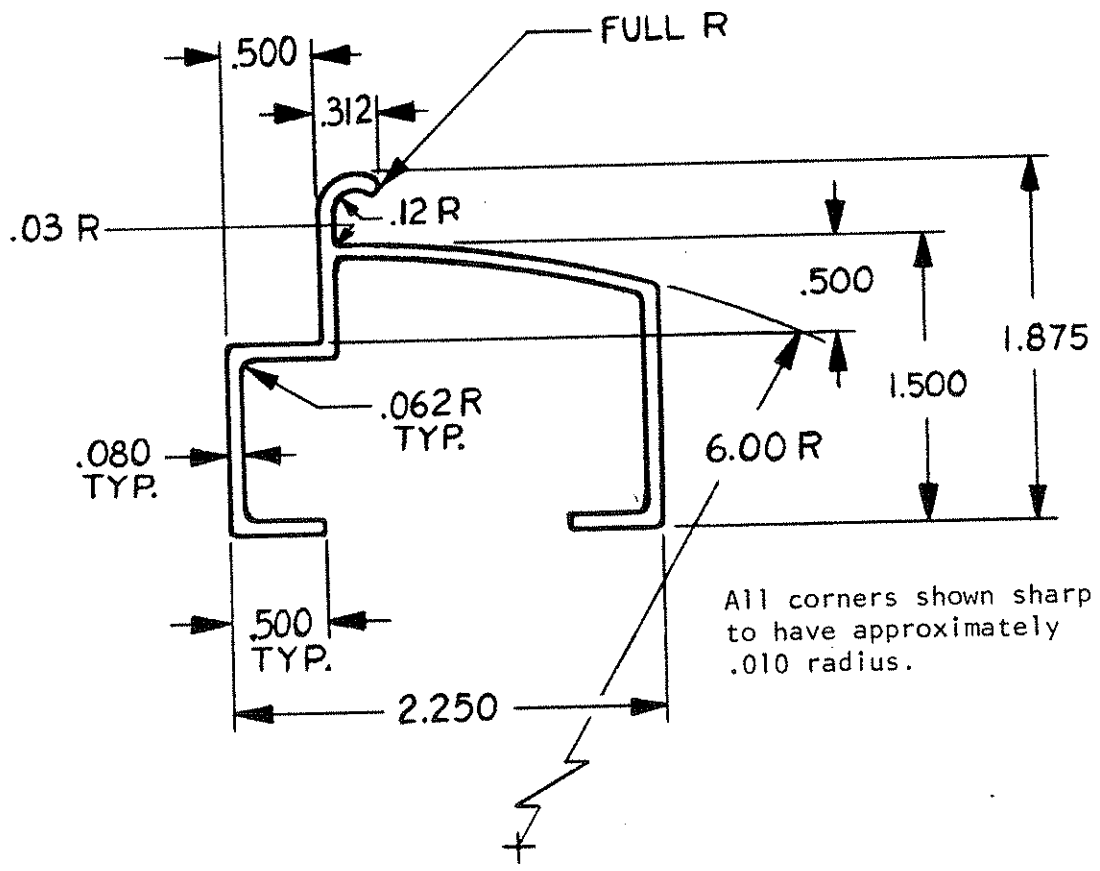
CHANGE INFORMATION	DATE	BY	JOB NO.	LTR

CHANGE INFORMATION	DATE	BY	JOB NO.	LTR
Added Tolerance	4/17/81	JSJ	C1468	A

SCOPE This specification identifies an extruded light metal section.

APPLICATION Sleeper Box Door Frame

SKETCH



Tolerance ± .012

SPECIFICATION NUMBERS

	MATERIAL	WEIGHT Lb/Ft	EXTRUSION DIE NUMBER	FREIGHTLINER SPECIFICATION NUMBER
	Aluminum 6061 T6			48-02331-000

SPECIFICATIONS

1 Finish: As Extruded

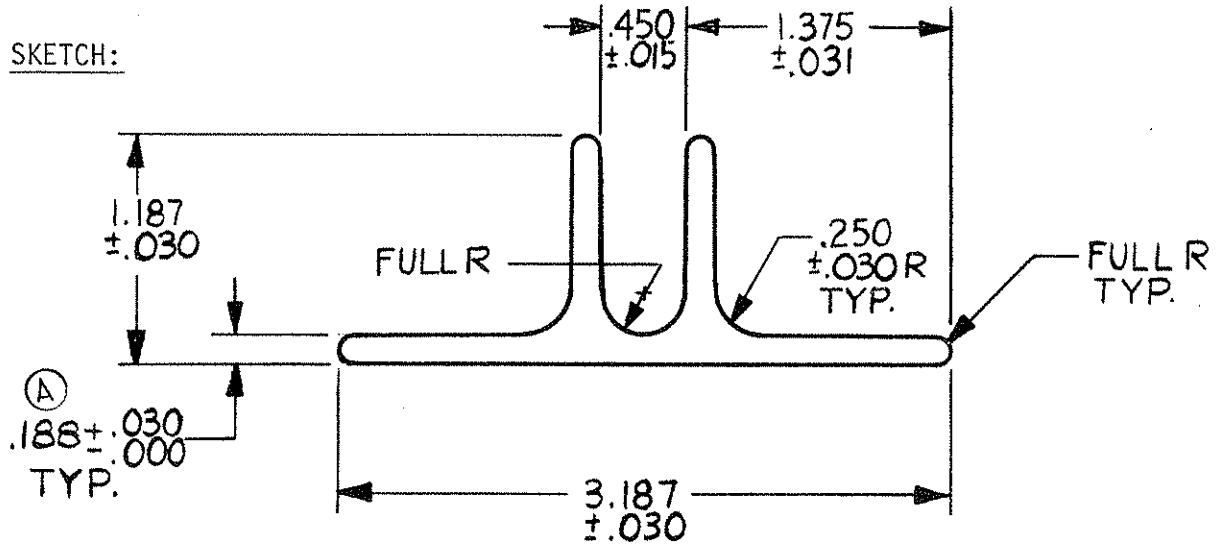
		DATE DRAWN			UNIT OF MEASURE
COMPILED	Deyo	11/2/79			FT
APPROVED	HADLEY				

ORIGINAL JOB NO.	TITLE	PART NO.
B1500	EXTRUSION, ALUMINUM	48-2332
LAST CHG LTR A		SHEET 1 OF 1

SCOPE: This specification identifies as aluminum extrusion.

APPLICATION: Radiator tiedown.

SKETCH:



SPECIFICATION NUMBERS:

	WT LB/FT	MATERIAL (1)	DIE NUMBERS	FREIGHTLINER SPECIFICATION NUMBER
	12.5	ALUM 6061-T6		48-2305-000

SPECIFICATIONS:

(1) Material: Aluminum (see table)

2 Finish: As extruded

COMPILED	ERHM	DATE DRAWN			
APPROVED		4-16-81		1	FOOT

CHANGE INFORMATION

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION

CHANGE INFORMATION

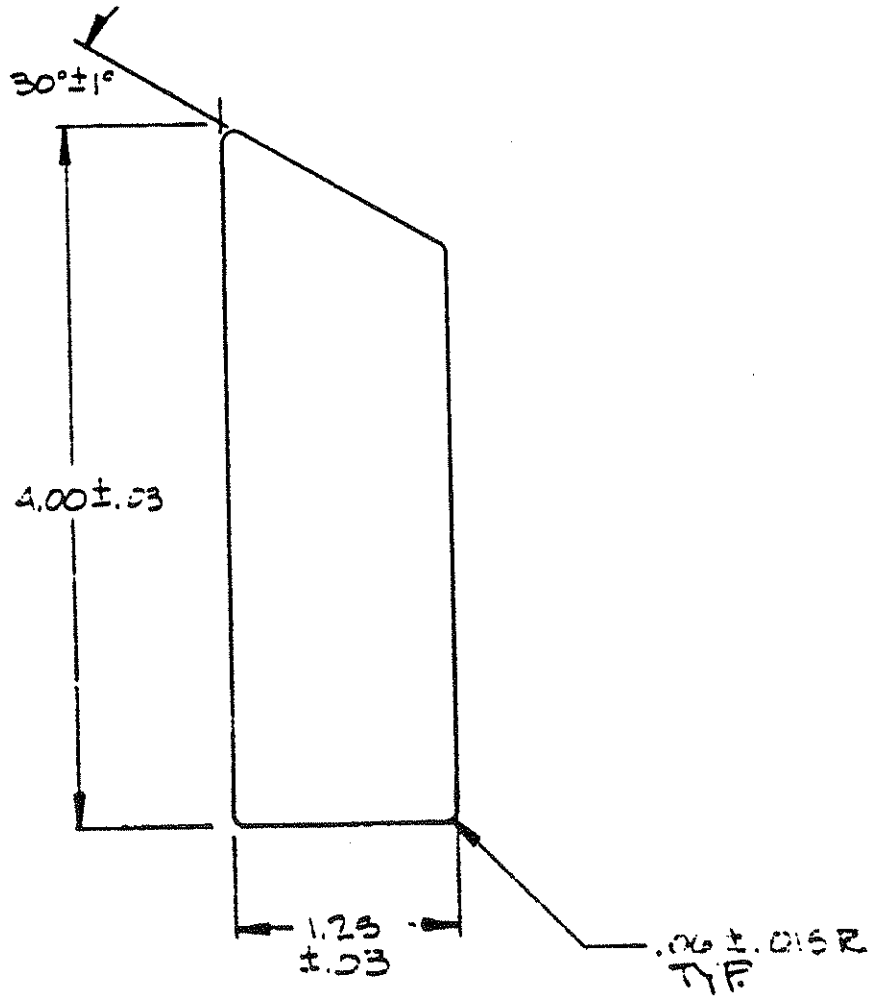
LTR	JOB NO.	BY	DATE	CHANGE INFORMATION
A	B1500	SR	4-16-81	.156 → .188

ORIGINAL JOB NO.	TITLE	PART NO.
CT330D	EXTRUSION - AIR/OIL JUNCTION BLOCK	48-02333
LAST CHG LTR A		SHEET 1 OF 1

NU

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION
A	D3968	CMH	9-2-82	FROM FT TO LB



	EXTRUSION DIE NO.	MATERIAL	WEIGHT LB/FT	FREIGHTLINER SPECIFICATION NUMBER
		(1)	5.46	000

SPECIFICATION

(1) MATERIAL: Extruded Alum. 6061-T6

4, 5, 6

0

COMPILED	MDJS	DATE DRAWN		MATERIAL	UNIT OF MEASURE
APPROVED	PW	6/24/30		(1)	LB (A)

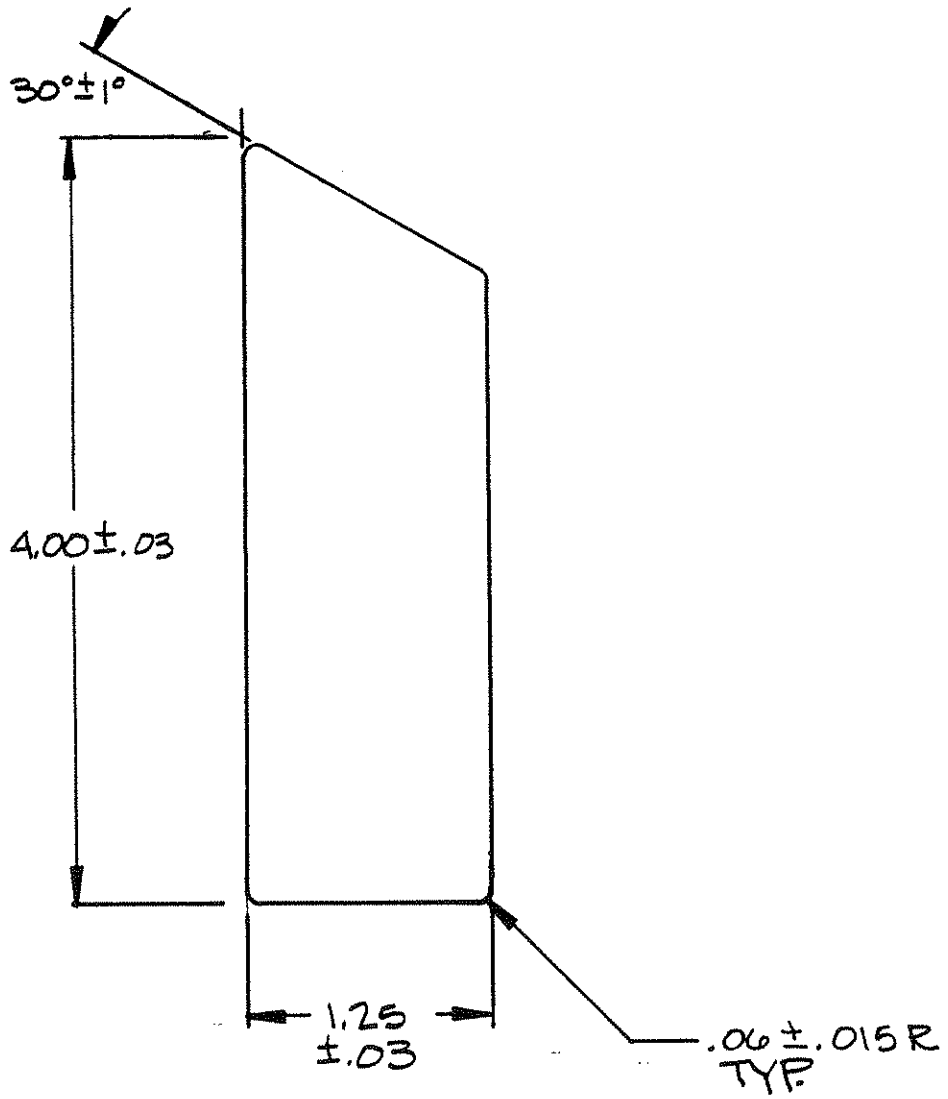
EAC-830 Portland FREIGHTLINER CORPORATION Oregon 97208

M/F

ORIGINAL JOB NO.	TITLE	PART NO.
C1530D	EXTRUSION - AIR/OIL JUNCTION BLOCK	48-02333
LAST CHG LTR A		SHEET 1 OF 1

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION
A	03968	CMH	9-2-82	FROM FT TO LB



	EXTRUSION DIE NO.	MATERIAL	WEIGHT LB/FT	FREIGHTLINER SPECIFICATION NUMBER
		⟨1⟩	5.46	

SPECIFICATION

⟨1⟩ MATERIAL: Extruded Alum. 6061-T6

COMPILED	MDJS	DATE DRAWN		MATERIAL	UNIT OF MEASURE
APPROVED	RW	6/24/80		⟨1⟩	LB (A)

A M/F

ORIGINAL JOB NO.	TITLE	PART NO.
C1500 B	EXTRUSION, CLIP, RETENTION, MANIFEST BOX DOOR	48-02334
LAST CHG LTR		SHEET 1 OF 2

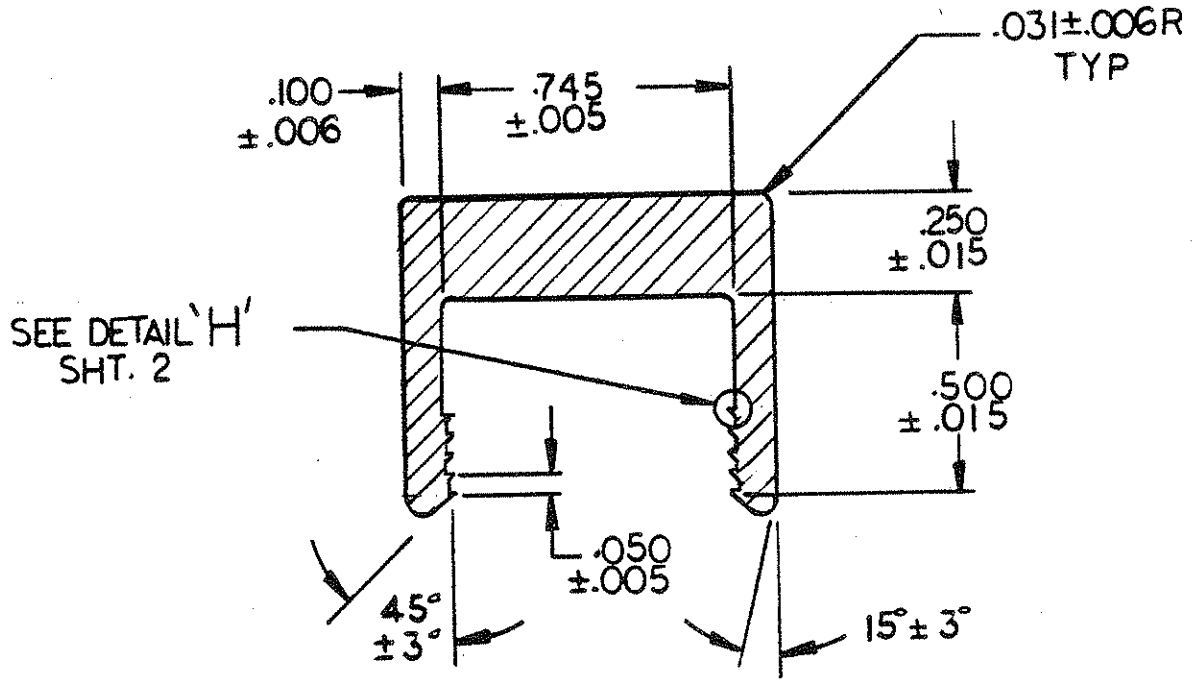
CHANGE INFORMATION	DATE	BY	JOB NO.	LTR

CHANGE INFORMATION	DATE	BY	JOB NO.	LTR

SCOPE: This specification identifies a specific light metal channel extrusion.

APPLICATION: A general use structural section used to retain Manifest Box Door in RH Accessory Dash.

SKETCH:



DOUBLE SCALE

	MATERIAL	WT. LB/FT	EXTRUSION DIE NUMBER		FREIGHTLINER SPECIFICATION NUMBERS
	①	.416			48-02334-000

SPECIFICATIONS:

① MATERIAL: 6063-T6, per Aluminum Association Standards.

2. FINISH: As extruded.

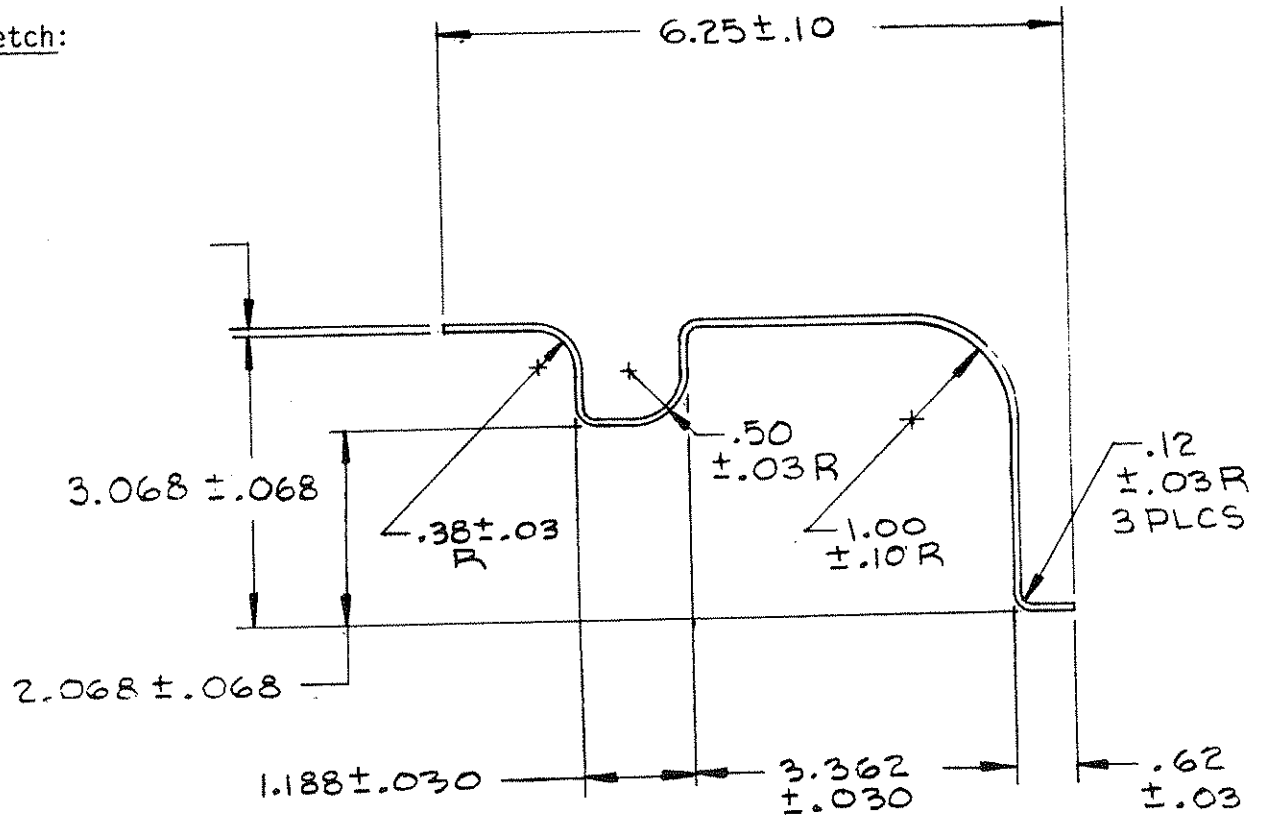
COMPILED	TDT 8-5-80	DATE DRAWN			UNIT OF MEASURE
APPROVED		6/30/80			FT.

ORIGINAL JOB NO.	TITLE	PART NO.
C1850J	DUCT EXTRUSION	48-02335
LAST CHG LTR D		SHEET 1 OF 1

Scope: This application identifies an aluminum extrusion.

Application: Duct, Htr-A/C combo, conv. R.H. deck

Sketch:



Specification Numbers

	WT LB/FT	Material	Die Numbers		Freightliner Specification Number
		⟨1⟩			48-02335-000

Specification:

⟨1⟩ Material: Aluminum 6063-T5

2. Finish as extruded.

COMPILED	JRP	DATE DRAWN		Material	Unit of Measure
APPROVED	HRS	9/25/80		⟨1⟩	Inches

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D

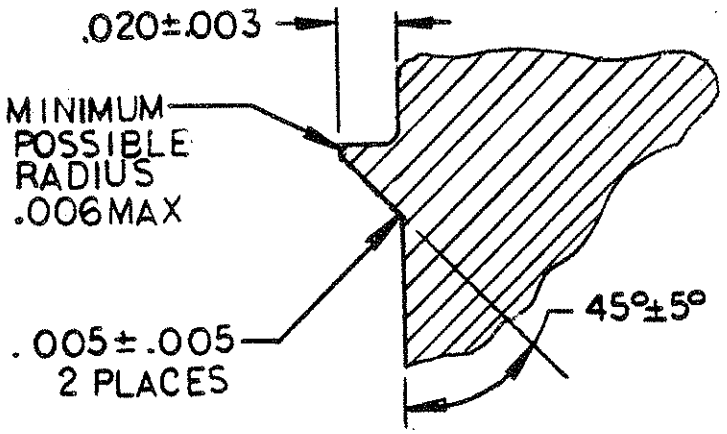
CHANGE INFORMATION

LTR	JOB NO.	BY	DATE	
D	C1850J	JRP	7-1-81	REVISED & REDRAWN

ORIGINAL JOB NO.	TITLE	PART NO.
C1500 B	EXTRUSION, CLIP, RETENTION, MANIFEST BOX DOOR	48-02334
LAST CHG LTR		SHEET 2 OF 2

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION



DETAIL 'H'
SCALE: 16X

COMPILED	TDT	DATE DRAWN			
APPROVED		6-30-80			

48-02335

ORIGINAL JOB NO.	TITLE	PART NO.
C1850J	DUCT EXTRUSION	48-02335
LAST CHG LTR C		SHEET 1 OF 1

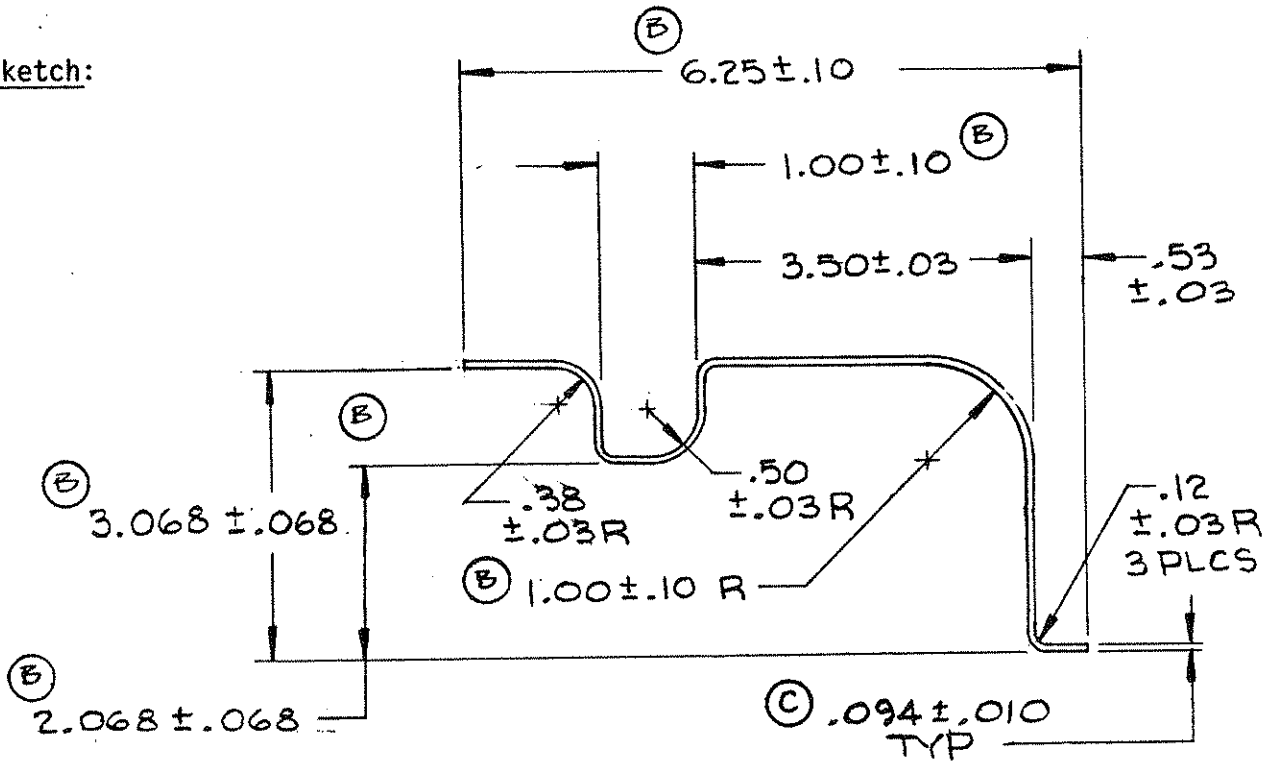
LTR	JOB NO.	BY	DATE	CHANGE INFORMATION
B	C1850J	JRP	12-12-80	3.00±.03 TO 3.068
B	C1850J	JRP	12-12-80	±.068, REMOVED
B	C1850J	JRP	12-12-80	1.00±.03, ADDED
B	C1850J	JRP	12-12-80	2.168 ±.068
C	C1850J	JRP	3-3-81	.03 TO .094

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION
A	C1850J	JRP	10-6-80	FROM "CORE" TO "DUCT"
B	C1850J	JRP	12-12-80	(2) 1.00 DIMS FROM ±.03
B	C1850J	JRP	12-12-80	TO ±.10, 6.25 ±.06
B	C1850J	JRP	12-12-80	TO 6.25 ±.10,

Scope: This application identifies an aluminum extrusion.

Application: Duct, Htr-A/C combo, conv. R.H. deck

Sketch:



Specification Numbers

	WT LB/FT	Material	Die Numbers		Freightliner Specification Number
		⟨1⟩			48-02335-000

Specification:

⟨1⟩ Material: Aluminum 6063-T5

2. Finish as extruded.

COMPILED	JRP	DATE DRAWN		Material	Unit of Measure
APPROVED		9/25/80		⟨1⟩	Inches

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C B

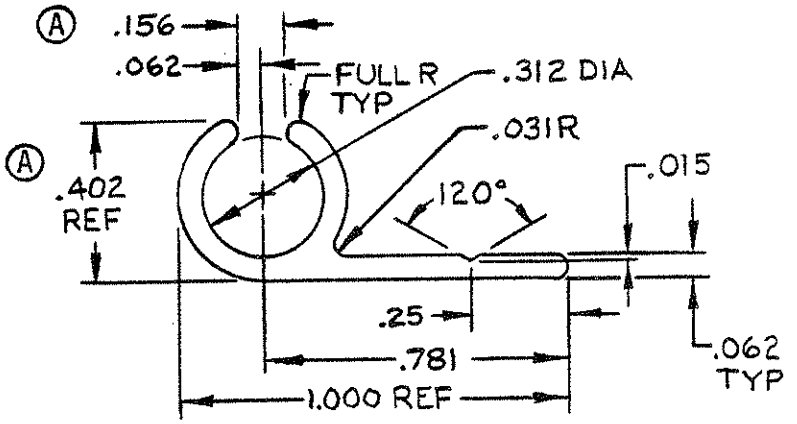
ORIGINAL JOB NO.	TITLE	PART NO.
C1500T	EXTRUSION, WELTING RETAINER, Alum.	48-02336
LAST CHG LTR A		SHEET 1 OF 1

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION

SCOPE: This specification identifies a light metal extrusion.

APPLICATION: Retaining bead of 1/4" dia. welting.

SKETCH:



DOUBLE SCALE ③ Ⓐ

SPECIFICATION NUMBERS Ⓐ

	Material ①	Weight lb/ft	Extrusion Die Number		Freightliner Specification Number
			ALU		
	6063-T5	.154	265894		48-02336-000

SPECIFICATIONS

① Material: See Table.

2. Finish: As extruded.

③ Standard Extrusion Tolerances Ⓐ

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION
A	C1500T	MGP	12-9-80	.125 & .412 to .156 & .402 Delete ALL TOL; Added: 3 Added: ALU 265894

					Unit of Measure
COMPILED	MGP	DATE DRAWN			
APPROVED	BEL	10-10-80			FT.

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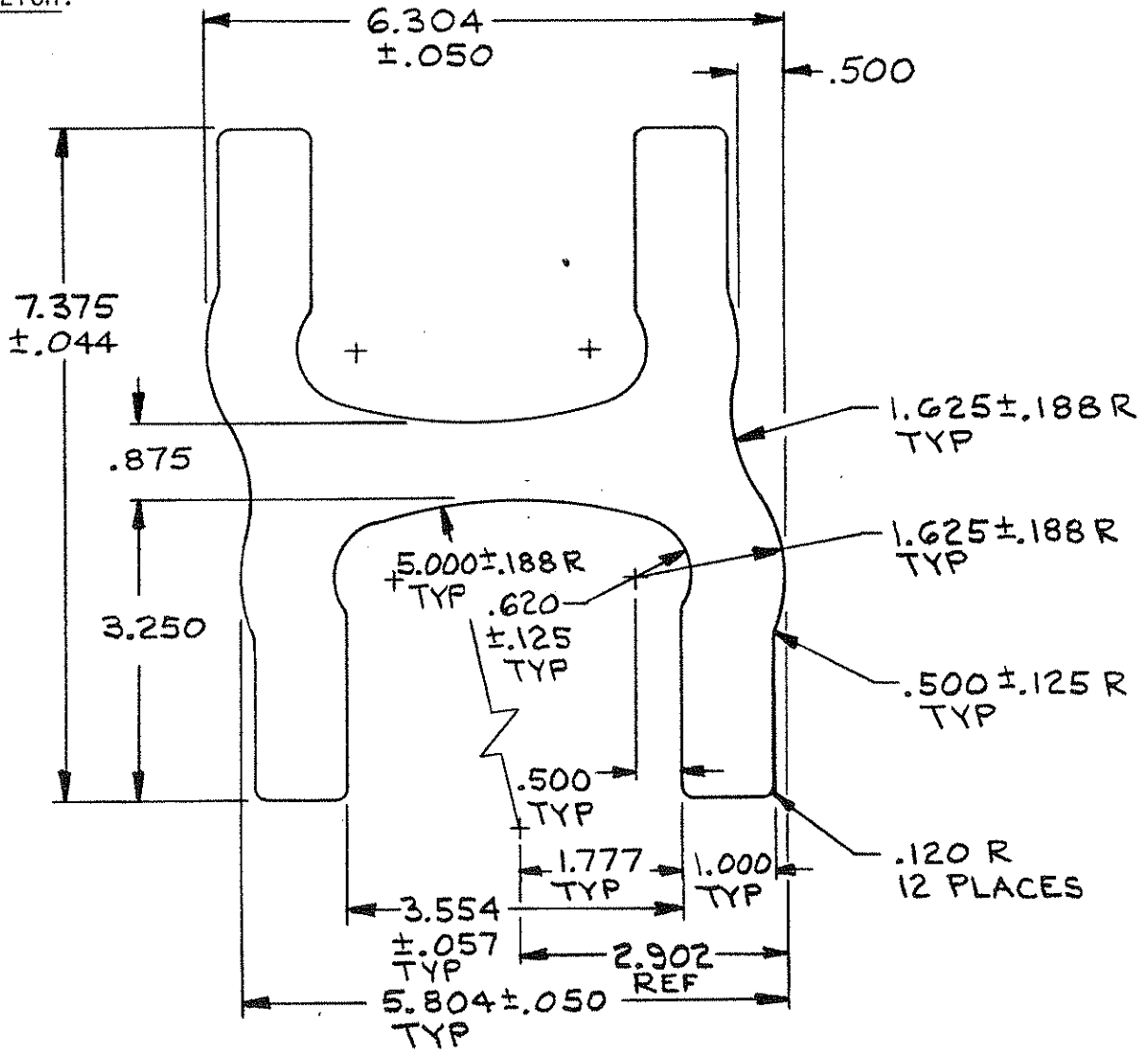
48-2337

ORIGINAL JOB NO.	TITLE	PART NO.
B1478	EXTRUSION, SPECIAL OFFSET "H" (SPRING SHACKLE, FRONT)	48-2337
LAST CHG LTR		SHEET 1 OF 1

SCOPE: This specification identifies a light metal special H-section extrusion.

APPLICATION: Front spring shackle.

SKETCH:



SPECIFICATION NUMBERS:

	TEMPER (1)	WT LB/FT	EXTRUSION DIE NUMBER	FREIGHTLINER SPECIFICATION NUMBER
	T6			48-2337-0

SPECIFICATIONS:

(1) MATERIAL: 6061 Aluminum Alloy (see table for temper).

2 FINISH: As Extruded.

3 TOLERANCE: ± .034 Unless Otherwise Specified.

		DATE DRAWN			
COMPILED	FF RN	10-9-80			
APPROVED	LARSON				

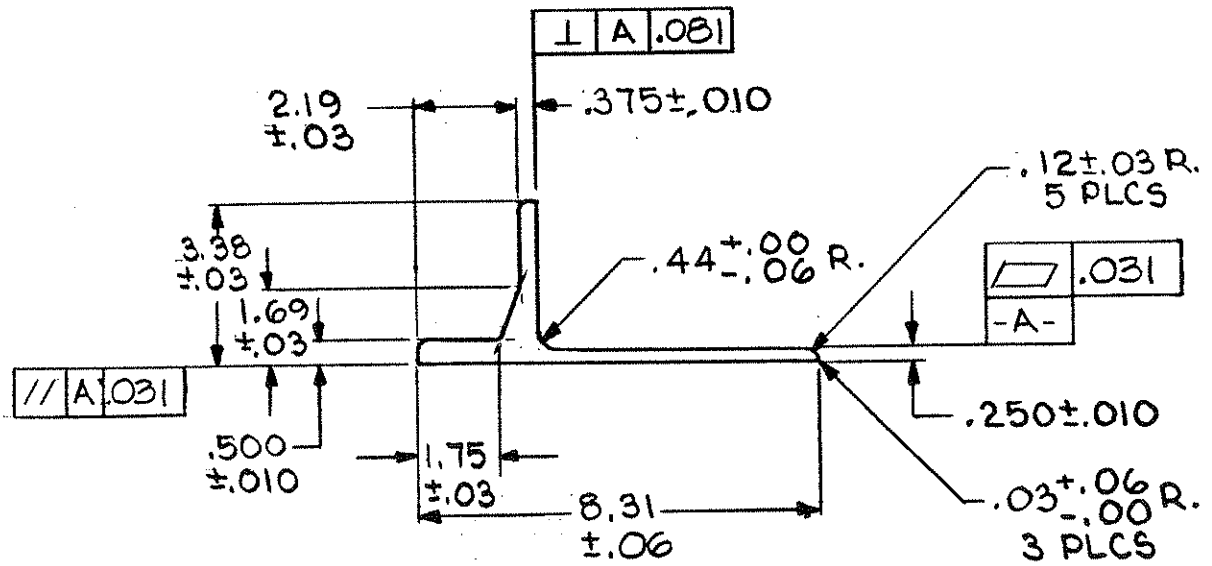
LTR	JOB NO.	BY	DATE	CHANGE INFORMATION

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION

M/F

48-2338

ORIGINAL JOB NO.	TITLE	PART NO.
B1419	EXTRUSION, BRKT, SUPT, AIR BAG FAS	48-2338
LAST CHG LTR A		SHEET 1 OF 1



	EXTRUSION DIE NO.	MATERIAL	WEIGHT LB/FT	FREIGHTLINER SPECIFICATION NO.
		①	4.77	48-2338-000

SPECIFICATION:

① MATERIAL: Aluminum. 6061-T6 Alloy.

2. SURFACE FINISH: 125

COMPILED	DE	DATE DRAWN		MATERIAL	UNIT OF MEASURE
APPROVED	D. Welter	10/22/80		①	FT.

CHANGE INFORMATION	DATE	BY	JOB NO.	LTR

CHANGE INFORMATION	DATE	BY	JOB NO.	LTR
REVISED TOLERANCES	5-13-83	DAW	65699D	A

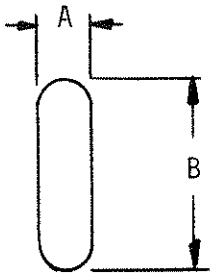
A M/F

ORIGINAL JOB NO.	TITLE	PART NO.
E0558	CABLE, MULTI-CONDUCTOR PARALLEL JACKETED, FLAT	48-2339
LAST CHG LTR		SHEET 1 OF 2

SCOPE: THIS SPECIFICATION IDENTIFIES A 2, 3 OR 4 CONDUCTOR ELECTRICAL CABLE.

APPLICATION: GENERAL USE

SKETCH:



CROSS-SECTION

SPECIFICATION NUMBERS:

CONDUCTORS	GAUGE AWG STRANDED	A	B	MANUFACTURER'S NOS. PRS 1	FREIGHTLINER SPECIFICATION NUMBER 2
2	12	.200	.345	107898	48-2339-22X
2	14	.180	.300	107897	-24X
2	16	.160	.260	107896	-26X
2	18	.150	.240	108713	-28X
3	12	.200	.490	117919	-32X
3	14	.180	.410	117854	-34X
3	16	.160	.360	117853	-36X
3	18	.150	.330	117852	-38X
4	12	.200	.625	117918	-42X
4	14	.180	.530	117857	-44X
4	16	.160	.470	117856	-46X
4	18	.150	.425	117855	-48X

ENGINEERING NOTES:

1 CABLE MUST MEET SAE STANDARD J878, TYPE SXL, STANDARD DUTY, THERMOSETTING CROSSLINKED POLYETHYLENE INSULATION, BRAIDLESS. CABLE MUST PASS FEDERAL MOTOR VEHICLE SAFETY STANDARD #302, FLAMMABILITY OF INTERIOR MATERIALS

COMPILED	DANG	DATE DRAWN			UNIT OF MEASURE
APPROVED	[signature]	12/2/80			FT.

CHANGE INFORMATION

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION

CHANGE INFORMATION

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION

ORIGINAL JOB NO.	TITLE	PART NO.
E0558	CABLE, MULTI-CONDUCTOR PARALLEL JACKETED, FLAT	48-2339
LAST CHG LTR		SHEET 2 OF 2

2 * FIRST DIGIT OF THE DASH NUMBER DENOTES THE NUMBER OF CONDUCTORS.

* SECOND DIGIT OF THE DASH NUMBER DENOTES THE GAUGE OF THE CABLE. EXAMPLE: 2 MEANS 12 GAUGE, 4 MEANS 14 GAUGE, ETC.

* THIRD DIGIT OF THE DASH NUMBER DENOTES THE COLOR CODE. THE AVAILABLE STANDARD COLORS ARE BLACK, WHITE, RED, YELLOW, BROWN, BLUE AND GREEN.

* COMPLETE THE DASH NUMBER BY CHOOSING THE DESIRED COLOR CODE FROM THE CHART BELOW.

3RD. DIGIT / CONDUCTOR	0	1	2	3	4	5	6	7	8	9
2	RED YELLOW									
3	BROWN GREEN YELLOW									
4										

CHANGE INFORMATION	DATE	BY	JOB NO.	LTR

CHANGE INFORMATION	DATE	BY	JOB NO.	LTR

COMPILED	DANG	DATE DRAWN			
APPROVED		12/2/80			

ORIGINAL JOB NO.	TITLE	PART NO.
C1500 D	EXTRUSION, FRESH AIR DUCT	48-02340
LAST CHG LTR		SHEET 1 OF 1

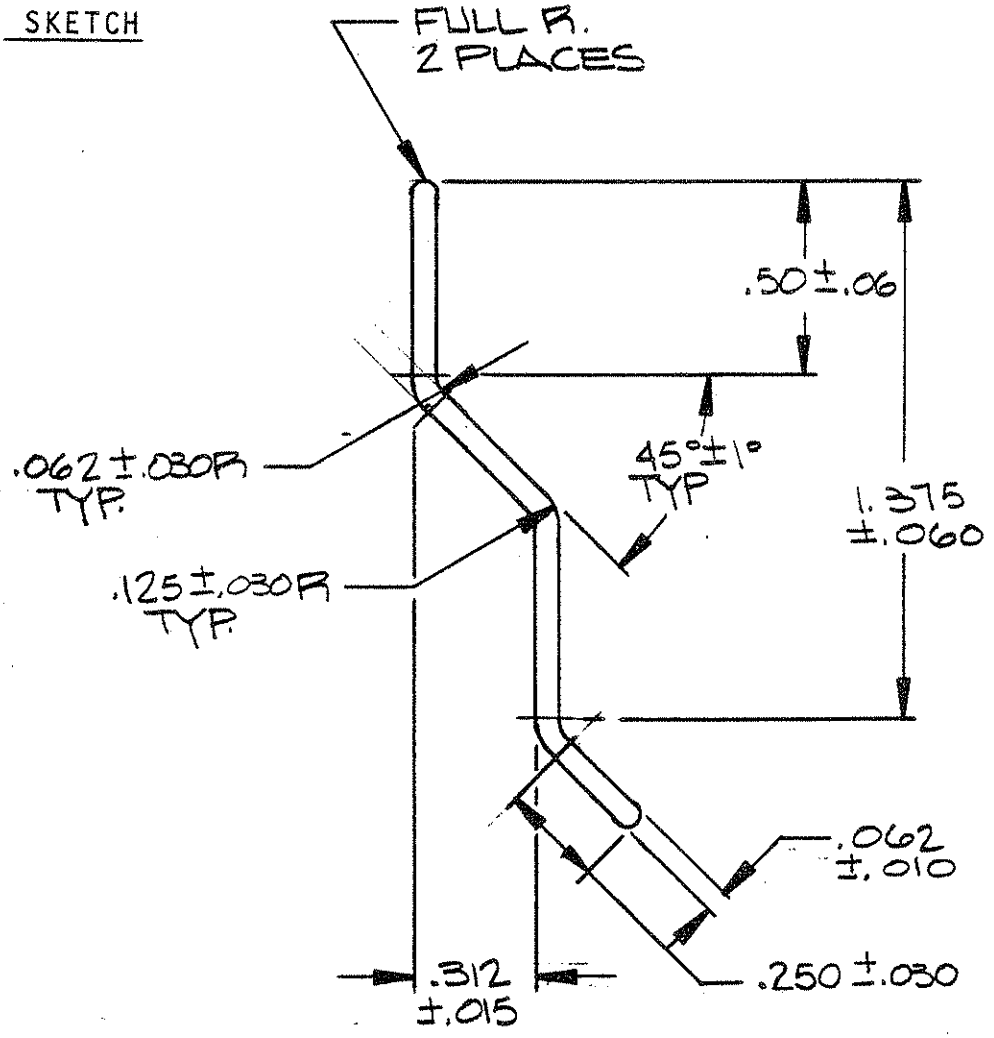
LTR	JOB NO.	BY	DATE	CHANGE INFORMATION

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION

SCOPE This specification identifies a specific light metal extrusion.

APPLICATION Specifically for attaching the fresh air duct to the cab deck.

SKETCH



SPECIFICATION NUMBER

	MAT'L (1)	WT LB/FT	EXTRUSION DIE NUMBER	FREIGHTLINER SPECIFICATION NUMBER
	ALUM. 6063-T5			48-02340-000

SPECIFICATIONS 1. Finish: As extruded.

COMPILED	MDJS	DATE DRAWN		MATERIAL	UNIT OF MEASURE
APPROVED	FF DL	12-18-80		(1)	Ft.

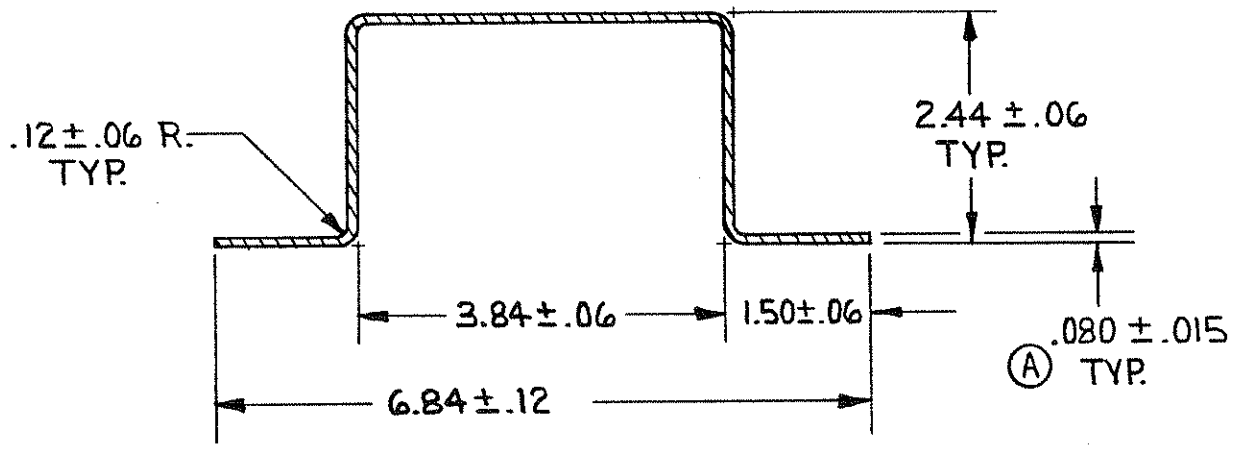
48-02343

ORIGINAL JOB NO.	TITLE	PART NO.
C1500D	EXTRUSION, ALUM., HAT SECTION	48-02343
LAST CHG LTR: A		SHEET 1 OF 1

SCOPE: This specification identifies a specific light metal hat section extrusion.

APPLICATION: A general use structural alum. hat section.

SKETCH:



HALF SCALE

	MATERIAL	WT. LB/FT	EXTRUSION DIE NUMBER		FREIGHTLINER SPECIFICATION NUMBERS
	1	1.053			48-02343-000

SPECIFICATIONS:

1 MATERIAL: 6063-T6, per Aluminum Association Standards.

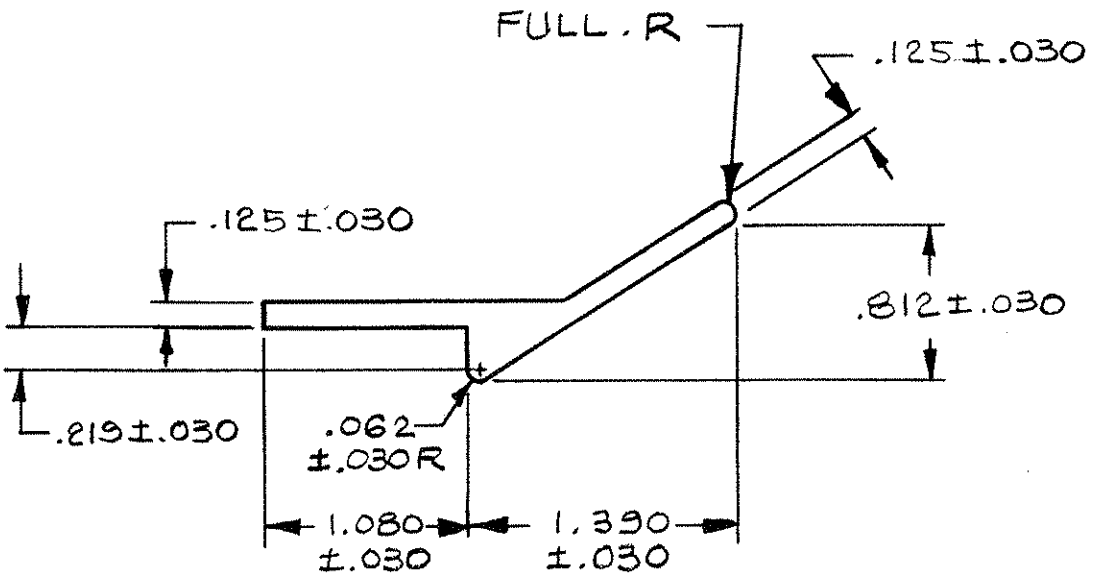
2. FINISH: As extruded.

COMPILED	PD	DATE DRAWN			UNIT OF MEASURE
APPROVED	BEL	1/16/81			FT.

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION
A	C1500D	PD	4-7-81	ADD .080 ± .015 TYP.

ORIGINAL JOB NO.	TITLE	PART NO.
C1751	HOOD GUIDE EXTRUSION	48-02345
LAST CHG LTR		SHEET 1 OF 1



	Material (1)	Extrusion Die Number	Freightliner Spec Number
	6063-T5		48-02345-000

(1) Material: Aluminum

2 Finish: As Extruded

CHANGE INFORMATION				
LTR	JOB NO.	BY	DATE	

CHANGE INFORMATION				
LTR	JOB NO.	BY	DATE	

COMPILED	ORC	DATE DRAWN			
APPROVED	GEH	2-16-81			

M/F

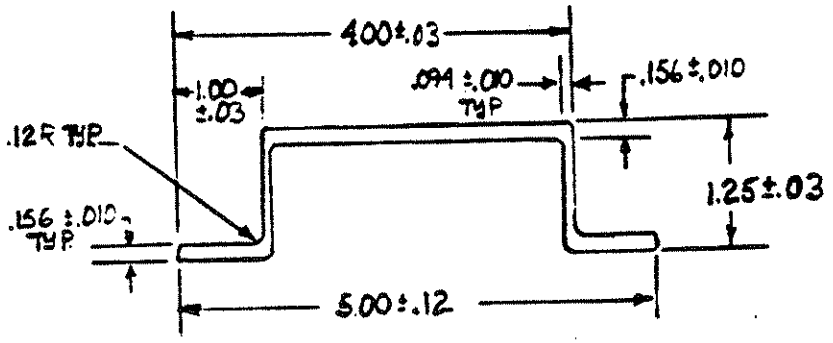
6/13

ORIGINAL JOB NO.	TITLE	PART NO.
C1753	EXTRUSION, WINGED CHANNEL	48-2347
LAST CHG LTR A		SHEET 1 OF 1

SCOPE: This specification identifies a particular light metal extrusion.

APPLICATION: General use hat section channel. Used especially for deck reinforcement.

SKETCH:



SPECIFICATION NUMBERS:

	MATERIAL 1	WT. LB./FT.	EXTRUSION DIE NUMBER	FREIGHTLINER SPECIFICATION NUMBER
	Alum 6063-T6			48-2347-000

4,5,6,7

1 ALTERNATE:

SPECIFICATIONS:

FINISH: As Extruded

CHANGE INFORMATION	DATE	BY	JOB NO.	LTR
.125-.187 to .156-.094	4-8-91	TC	C1753	A

COMPILED	TC	DATE DRAWN			UNIT OF MEASURE
APPROVED	DRS	2/5/81			IN.

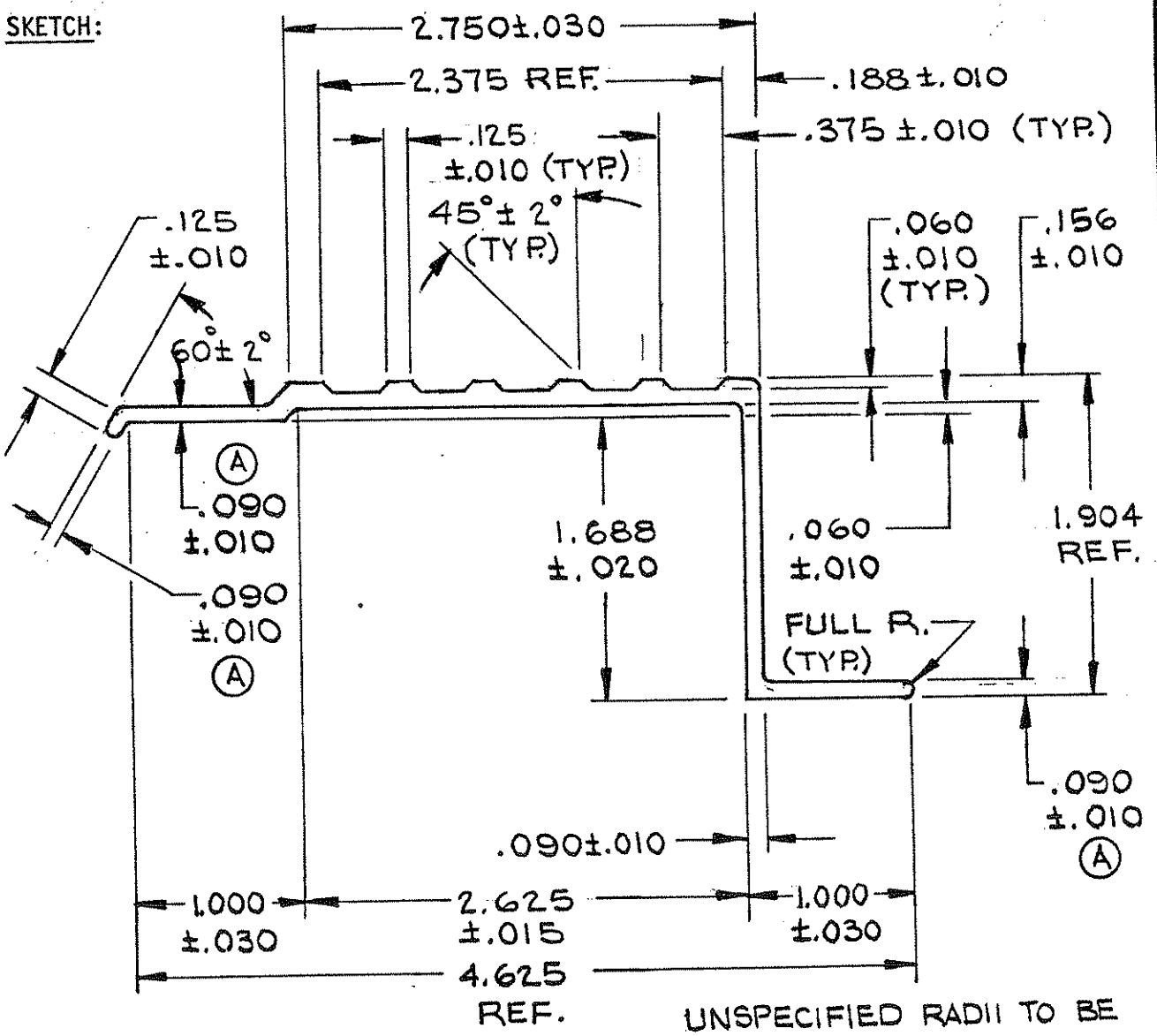
E-383A Litho in USA Portland FREIGHTLINER CORPORATION Oregon 97208

ORIGINAL JOB NO.	TITLE	PART NO.
C1850J	EXTRUSION, WALK IN SLEEPER BOX	48-02348
LAST CHG LTR A		SHEET 1 OF 1

SCOPE: This specification identifies a particular aluminum extrusion.

APPLICATION: Especially used for the walk-in sleeper box door sill.

SKETCH:



SPECIFICATION NUMBERS

	Material & H.T. (1)	WT LB/FT	Extrusion Die Number	Freightliner Specification Number
	6061-T6			48-02348-000

SPECIFICATIONS:

(1) Material: Aluminum, see table
2. Finish: As extruded

COMPILED	D.Le L.	DATE DRAWN			Unit of Measure
APPROVED	RWS	5-4-81			FT.

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION
A	C1850J	DL	5-9-81	.060 TO .090

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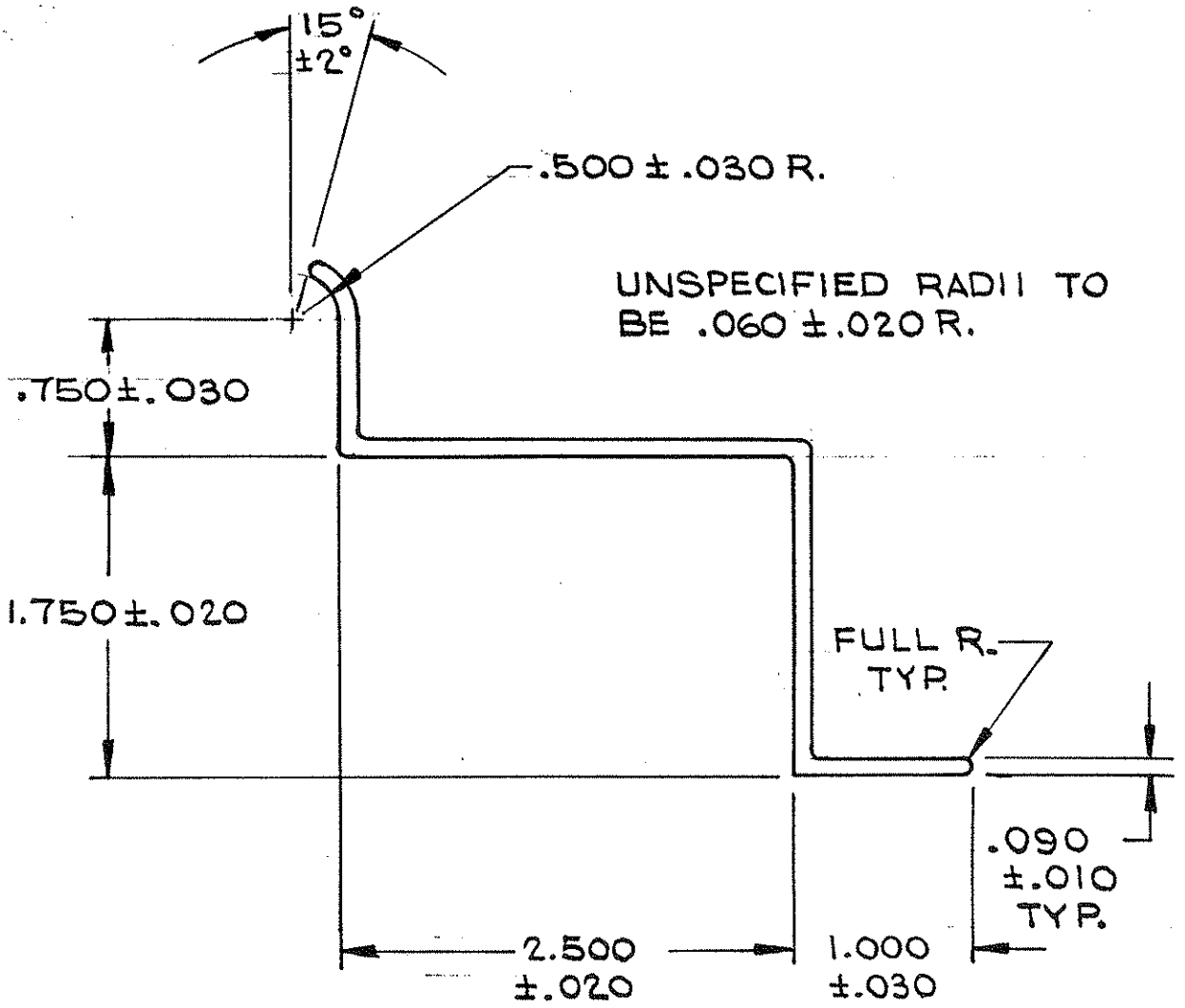
ORIGINAL JOB NO.	TITLE	PART NO.
C1850J	EXTRUSION, DUCT COVER	48-02349
LAST CHG LTR		SHEET 1 OF 1

CHANGE INFORMATION	DATE	BY	JOB NO.	LTR

SCOPE: This specification identifies a particular aluminum extrusion.

APPLICATION: Especially used to cover the rear duct in the Conventional.

SKETCH:



SPECIFICATION NUMBERS

	Material & H.T. (1)	WT LB/FT	Extrusion Die Number	Freightliner Specification Number
	6061-T6			48-02349-000

SPECIFICATIONS:

(1) Material: Aluminum, see table

2. Finish: As extruded

COMPILED	D. Le L.	DATE DRAWN			Unit of Measure
APPROVED	TRS	5-11-81			FT

EAC-830

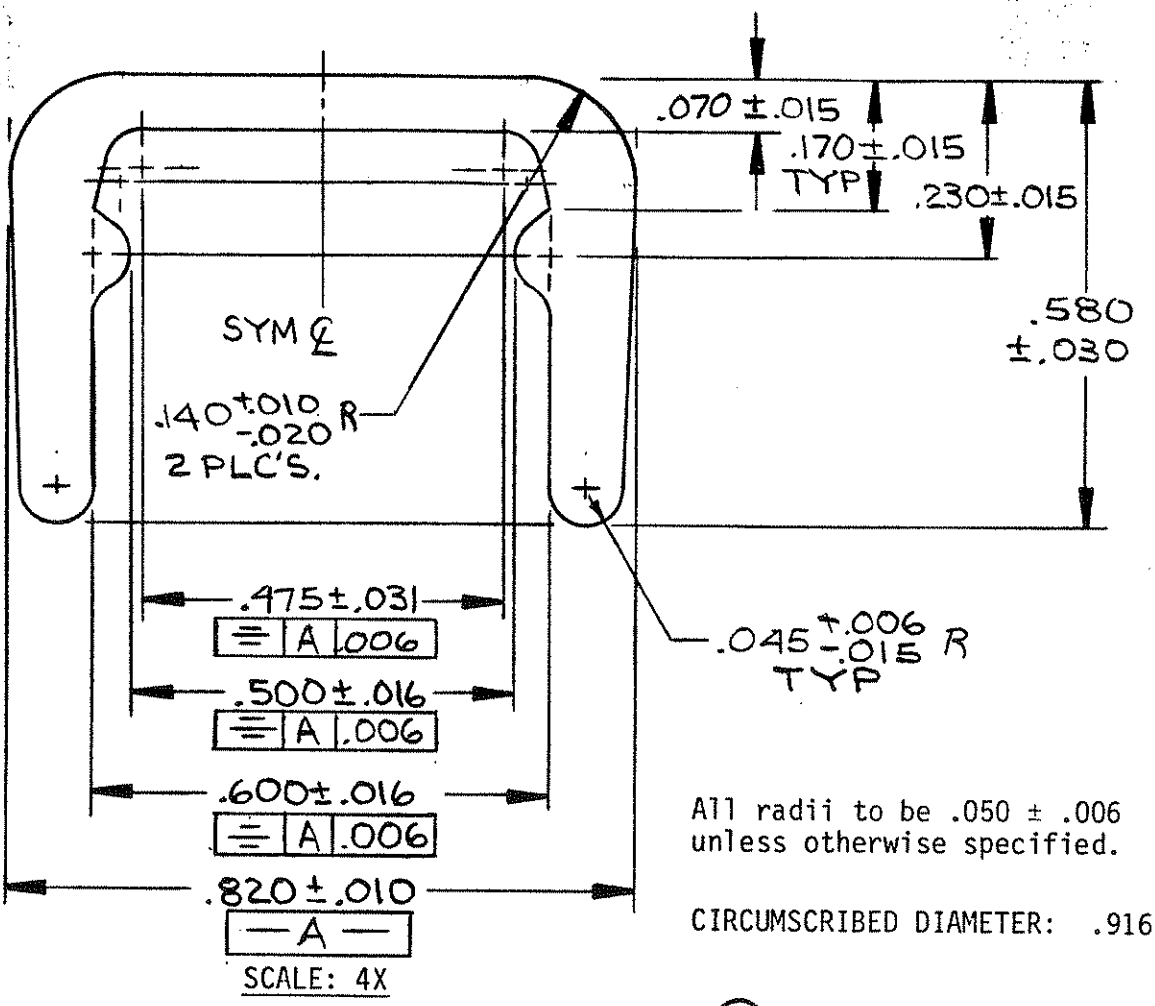
Portland FREIGHTLINER CORPORATION M/F Oregon 97208

ORIGINAL JOB NO.	TITLE	PART NO.
C1786	GUIDE CHANNEL SECTION	48-2351
LAST CHG LTR A		SHEET 1 OF 1

Scope: This specification identifies an aluminum extrusion.

Application: Lower window guide

Sketch:



All radii to be .050 ± .006 unless otherwise specified.

CIRCUMSCRIBED DIAMETER: .916

Ⓐ

	EXTRUSION DIE NO.	MATERIAL 1	WEIGHT LB/FT	FREIGHTLINER SPECIFICATION NUMBER
		6061-T4	.1893	48-2351-000

SPECIFICATION

1 Material: Aluminum (See Table)

2 Finish: As extruded

COMPILED	D.S.	DATE DRAWN			UNIT OF MEASURE
APPROVED	FF KE	7/20/81			LB Ⓐ

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION
A	03963	CA	9-2-82	ADDED WT. DATA; FT 1018

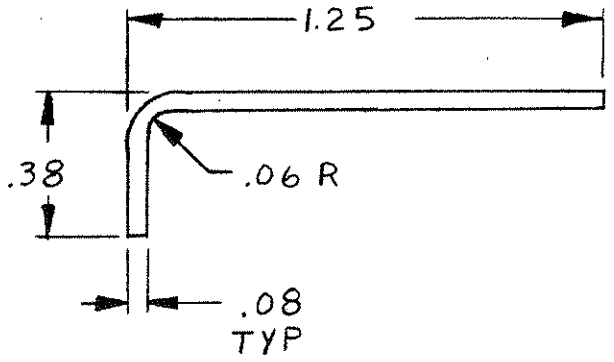
48-02355

ORIGINAL JOB NO.	TITLE	PART NO.
C1813	EXTRUSION, ANGLE SEALING BOOT, SLPR BOX	48-02355
LAST CHG LTR A		SHEET 1 OF 1

SCOPE: This specification identifies a metal extrusion.

APPLICATION: Sealing boot angle Conventional sleeper box.

SKETCH:



SPECIFICATION NUMBERS:

	EXTRUSION DIE NO.	MATERIAL	WEIGHT LB/FT (A)	FREIGHTLINER SPECIFICATION NUMBER
		6061-T4 Aluminum	.142	48-02355-000

SPECIFICATIONS:

1. Commercial extrusion tolerances unless otherwise noted.
2. Finish: As extruded.

COMPILED	JS	DATE DRAWN			UNIT OF MEASURE
APPROVED		11/5/81			LB (A)

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION
A	039683	[illegible]	9-2-82	ADDED WT DATA & UNIT MEAS

EAC-826

Portland FREIGHTLINER CORPORATION Oregon 97208

M/E

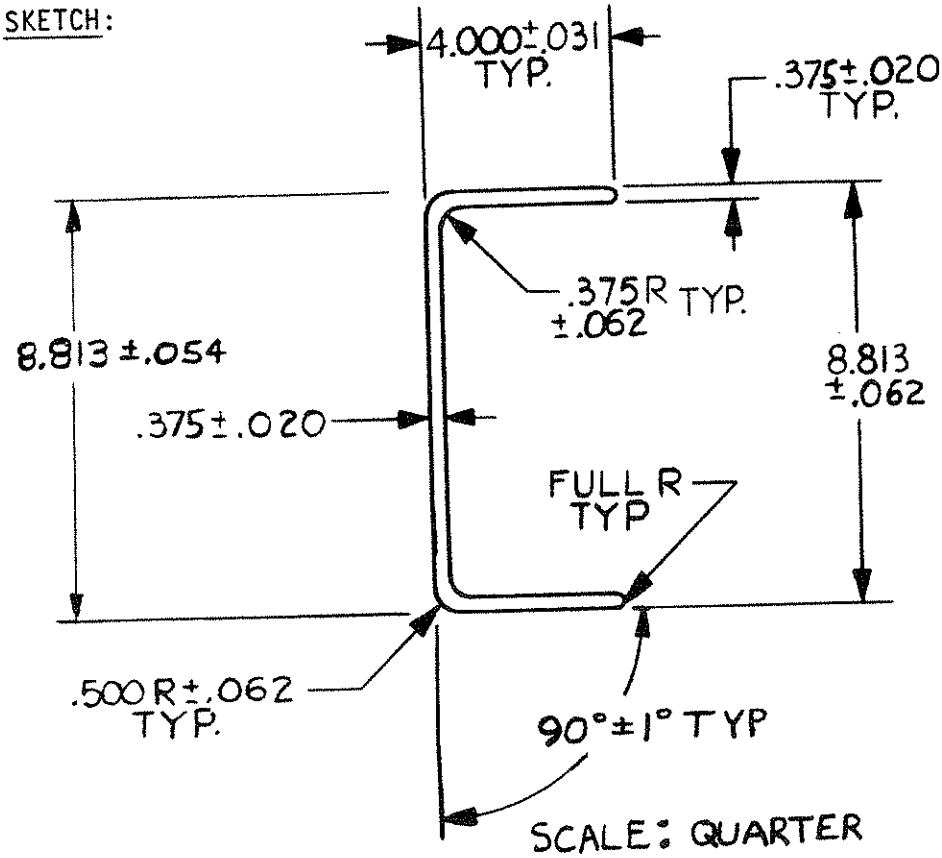
48-02356

ORIGINAL JOB NO.	TITLE	PART NO.
B1662	CROSSMEMBER ALUMINUM EXTRUSION	48-02356
LAST CHG LTR: B		SHEET 1 OF 1

SCOPE: This specification identifies an aluminum extrusion.

APPLICATION: Specifically used for crossmembers.

SKETCH:



SPECIFICATION NUMBERS:

DESCRIPTION	EXTRUSION DIE NUMBER	WT. LBS/FT.	FREIGHTLINER SPECIFICATION NUMBER
Channel		6.910 REF.	48-02356-000

SPECIFICATIONS:

(1) Material: Alum. 6061-T6

2. Minimum properties: Tensile ultimate, 38 k.s.i.
Yield, 35 k.s.i.
Elongation, 10% in 2 inches.

3. Finish: As extruded.

CHANGE INFORMATION	BY	DATE	JOB NO.	LTR

CHANGE INFORMATION	BY	DATE	JOB NO.	LTR
REV. TOL.; ADD 90°	JWL	1/4/83	B1662	A
REV. UNIT OF MEAS; ADD 6.910	JWL	1/25/83	B1662	B

COMPILED	TTR	DATE DRAWN		MATERIAL	UNIT OF MEASURE
APPROVED		02-22-82		(1)	LB.

E-183A Litho in USA Portland FREIGHTLINER CORPORATION B A M/F Oregon 97208

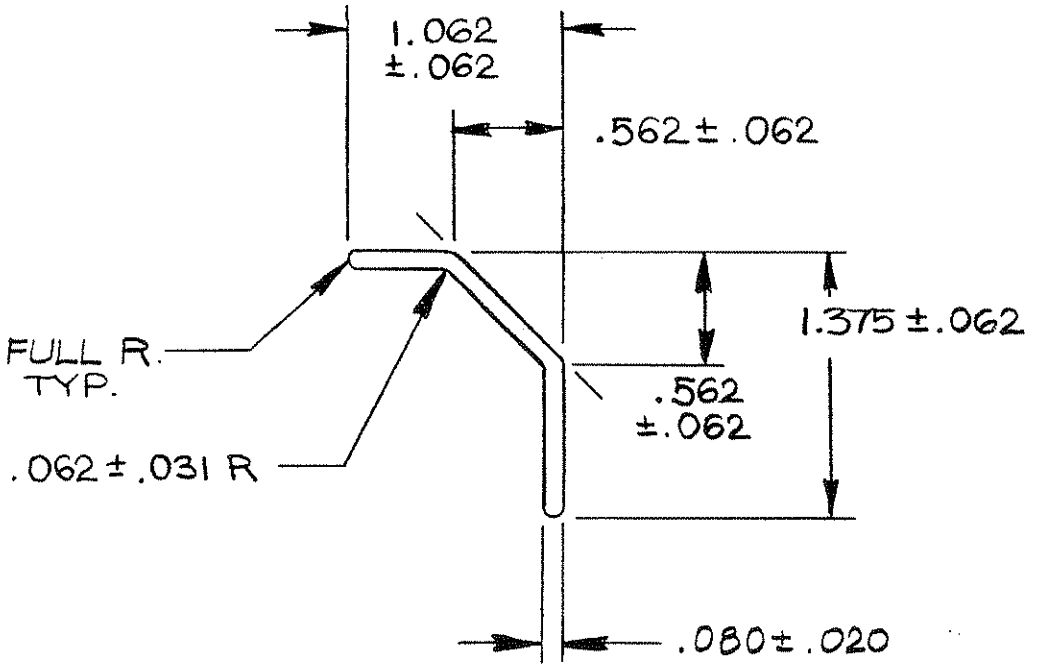
ORIGINAL JOB NO.	TITLE	PART NO.
1048 B	EXTRUSION, CONV. FRESH AIR DUCT	48- 02357
LAST CHG LTR		SHEET 1 OF 1

CHANGE INFORMATION	DATE	BY	JOB NO.	LTR

SCOPE: This specification identifies a specific aluminum extrusion.

APPLICATION: Used for attachment angle for conv. fresh air duct to cowl.

SKETCH:



SPECIFICATION NUMBER

	MAT'L (1)	WT. LB/FT	EXTRUSION DIE NUMBER	FREIGHTLINER SPECIFICATION NUMBER
	ALUM 6063-T5	.20		48-2357-000

1. Finish: As extruded.

COMPILED	NR	DATE DRAWN			
APPROVED	FF	5-27-82		(1)	FT.

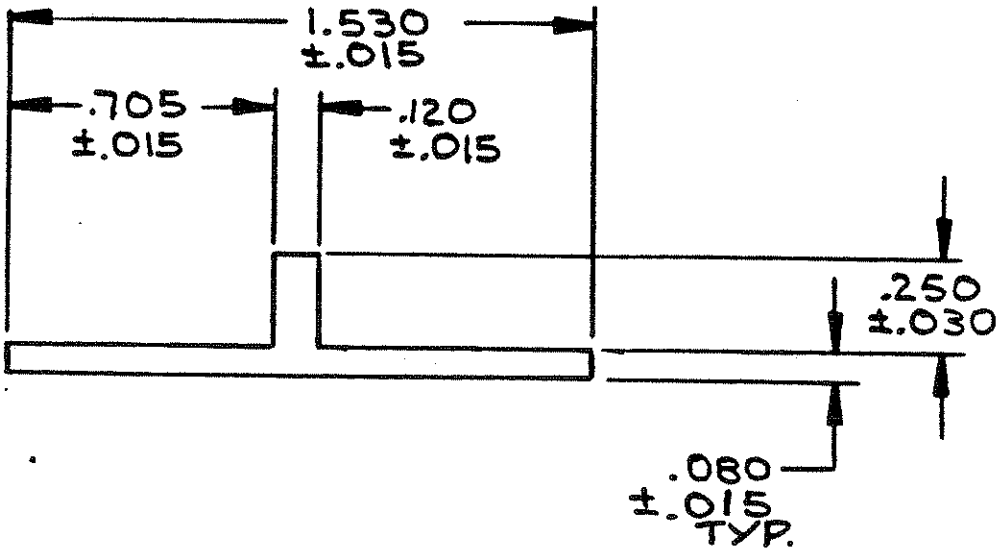
ORIGINAL JOB NO.	TITLE	PART NO.
L0110	EXTRUSION, ALUMINUM, GRILLE	48-02378
LAST CHG LTR C		SHEET 1 OF 1

SCOPE: This specification identifies a metal extrusion.

APPLICATION: Used as a grille corner brace.

SKETCH:

"E"



SPECIFICATION NUMBERS:

EXTRUSION DIE NO.	MATERIAL ⬡1	WEIGHT LB/FT	FREIGHTLINER SPECIFICATION NUMBER
ALUM			
	6463 T6		48-02378-000

SPECIFICATIONS:

4,5,6,7

⬡1 MATERIAL: Aluminum (see table).

2. FINISH: As extruded.

COMPILED	DS	DATE DRAWN		MATERIAL	UNIT OF MEASURE
APPROVED	JJN	8/15/83		⬡1	LBS.

Portland FREIGHTLINER CORPORATION Oregon 97208

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION
B	L0110	RM	11/16/83	REVISED & REDRAWN
C	L0110	RM	11/16/83	DWG TO X4

AC-828

DRAWN	TFH	TITLE	DRAWING NUMBER
APPRV	EAM	EXTRUSION, ALUMINUM	48-02383
DATE	04/19/89	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1 / CHG. LTR. A
CADAM ORIGINAL			
UNLESS OTHERWISE NOTED, DIMENSIONS ARE IN INCHES			

FREIGHTLINER SPECIFICATION NUMBER: 48-02383-000

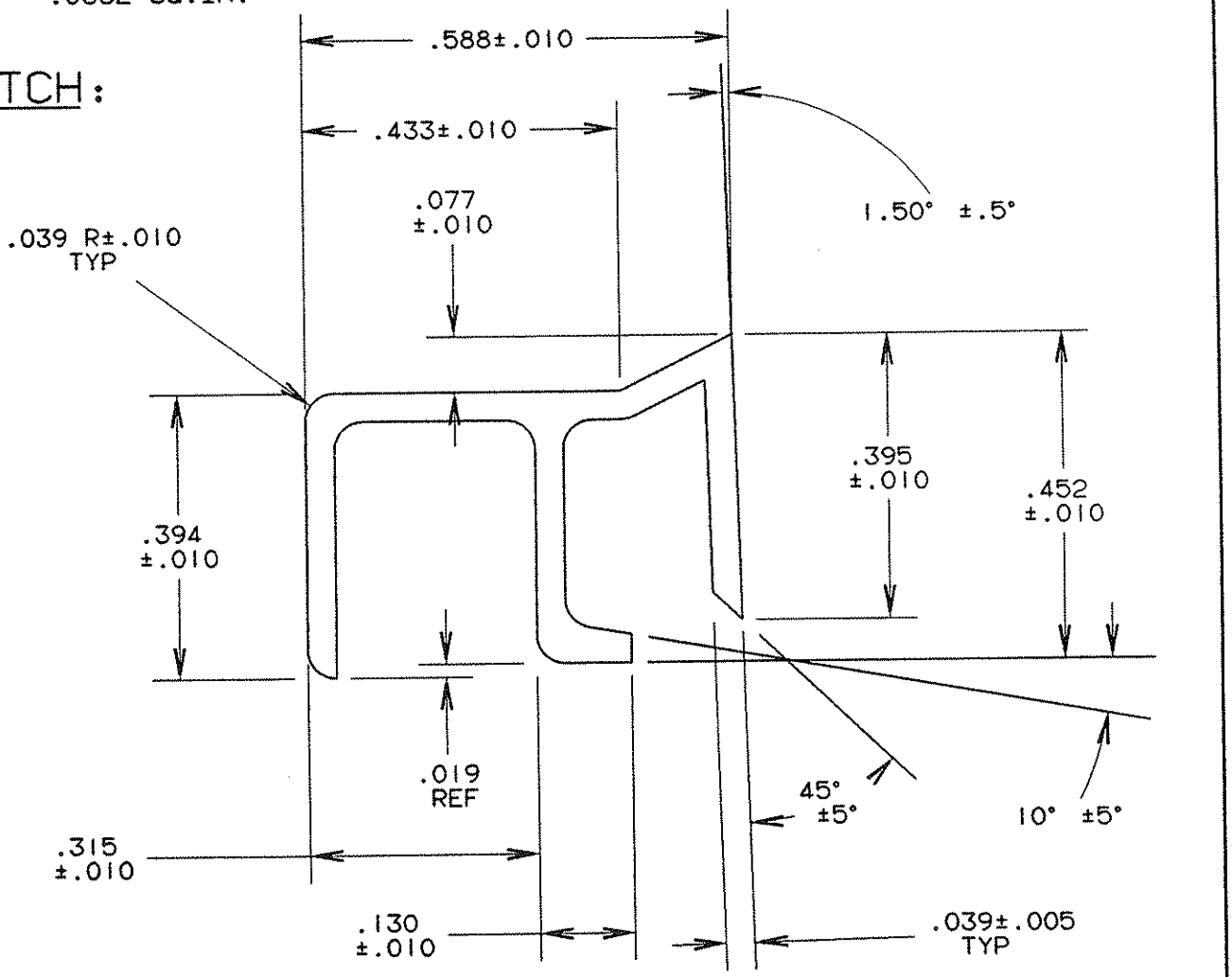
APPLICATION: USED AS CENTER HORIZONTAL GRILLE BAR.

MATERIAL: 6463-T6

WEIGHT: .0802 LB/FOOT

AREA: .0682 SQ.IN.

SKETCH:



1. .039±.005 WALL THICKNESS UNLESS OTHERWISE SPECIFIED.
2. BREAK ALL UNSPECIFIED RADII .010 R.
3. FINSH AS EXTRUDED.

CHG	JOB NO	DATE	BY	REVISION
A	P1106E	04/19/89	TFH	REVISED PICTORIALLY

ORIGINAL JOB NO.	TITLE	PART NO.
1943C	EXTRUSION, ALUMINUM	48-02387
LAST CHG LTR		SHEET 1 OF 1

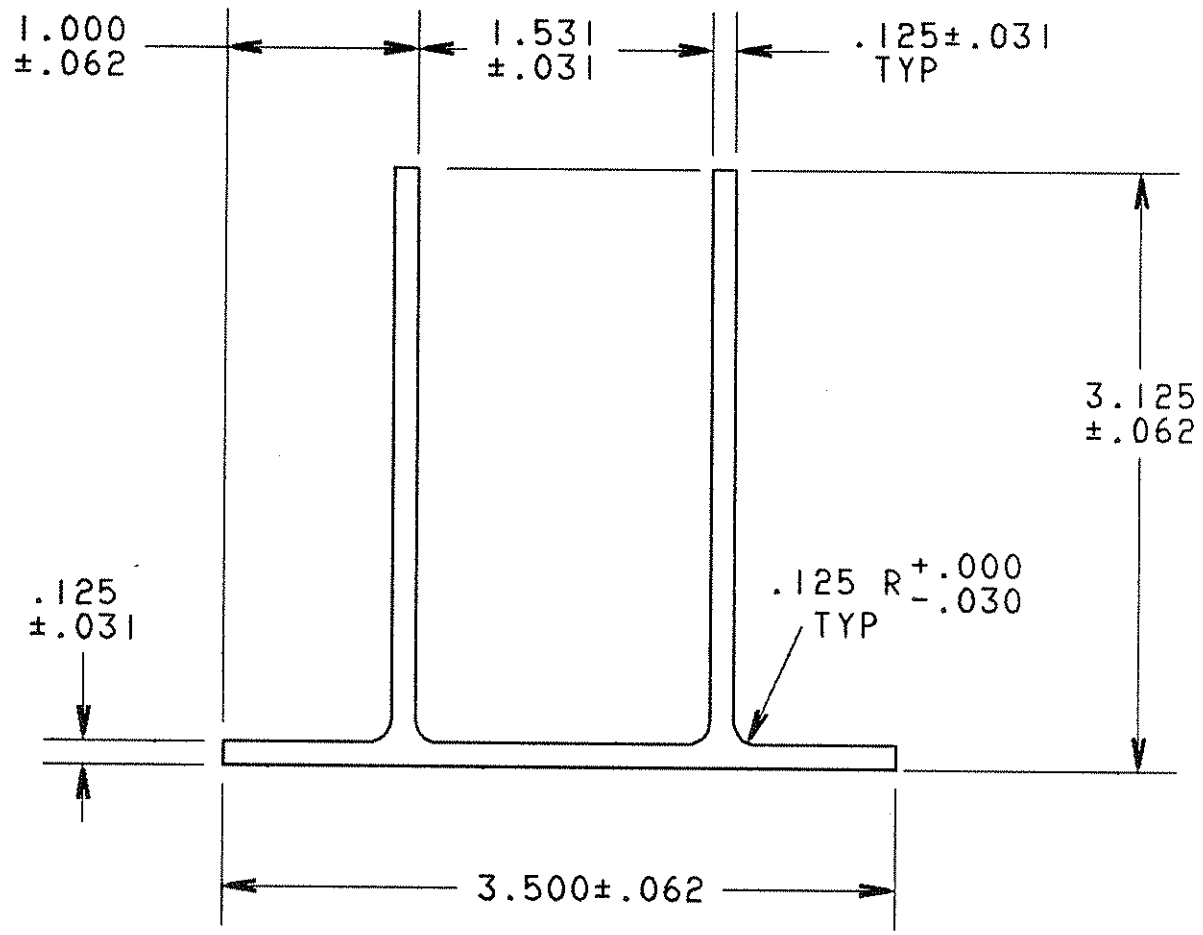
CHANGE INFORMATION	DATE	BY	JOB NO.	LTR

CHANGE INFORMATION	DATE	BY	JOB NO.	LTR

SCOPE: THIS SPECIFICATION IDENTIFIES AN ALUMINUM EXTRUSION.

APPLICATION: USED AS A CONVENTIONAL SIDE EXTENDER BRACKET.

SKETCH:



AREA: 1.201 SQ IN

SPECIFICATION NUMBERS:

	EXTRUSION DIE NO	MATERIAL △1	WEIGHT LBS/FT	FREIGHTLINER SPECIFICATION NO
		6061-T6	1.412	48-02387-000

SPECIFICATIONS:

△1 MATERIAL: ALUMINUM (SEE TABLE)

2. FINISH: AS EXTRUDED.

COMPILED	TDT	DATE DRAWN	CADAM ORIGINAL	MATERIAL	MASTER NUMBER	
APPROVED	BAM	04-24-84		△1	00001	000D1

PORTLAND FREIGHTLINER CORPORATION OREGON 97208

M/F

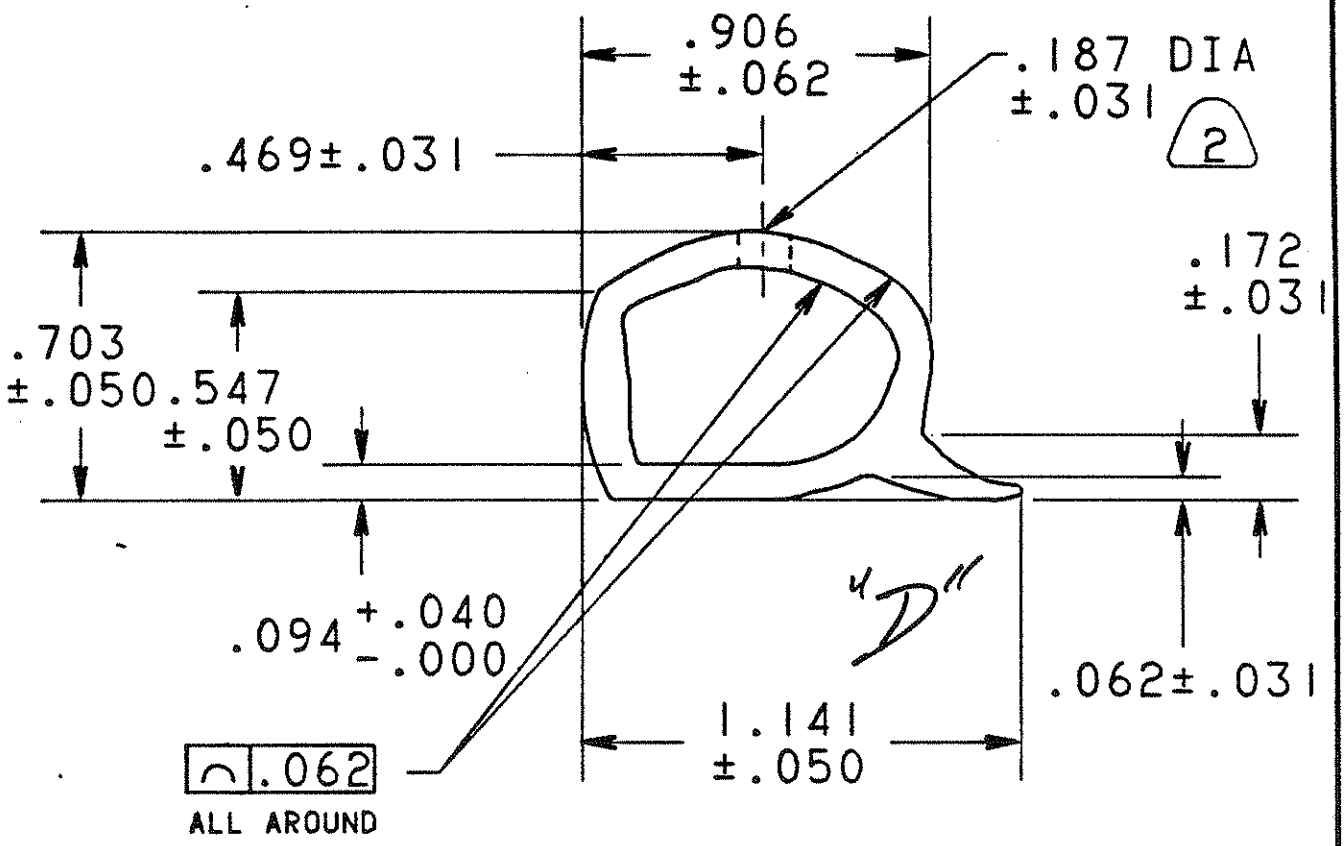
MATERIAL SPECIFICATION

ORIGINAL JOB NO.	TITLE	PART NO.
K0217	WEATHERSTRIP DOOR	48-02388
LAST CHG LTR		SHEET 1 OF 1

CHANGE INFORMATION

LTR	JOB NO.	BY	DATE

SKETCH:



SPECIFICATION NUMBERS:

APPROVED VENDOR	MATERIAL	EXTRUSION DIE NO	FREIGHTLINER SPECIFICATION NO.
KIRKHILL RUBBER CO	1		48-02388-000

SPECIFICATIONS:

1. MATERIAL TO BE CELLULAR RUBBER (NEOPRENE RUBBER) PER SAE SPEC J 18B MATERIAL DESIGNATION SCE-42

2. .187 DIA ±.031 HOLES EQUALLY SPACED AT 2.500±.250 CENTERS ON FULL LENGTH OF THE PART.
ALT METHOD: .219 DIA±.031 EQUALLY SPACED AT 3.250±.250 CENTERS

3. FINISH: AS EXTRUDED

4, 5, 6

COMPILED	TDT	DATE DRAWN	CADAM ORIGINAL	UNIT OF MEASURE	MASTER NUMBER	
APPROVED	MDE	06-04-84		INCH	65308	000D1

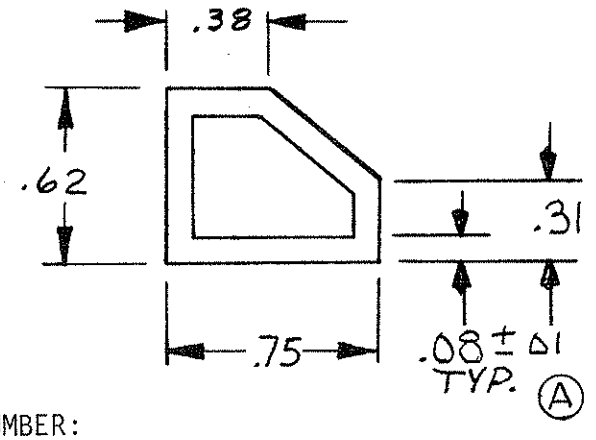
48-2401

ORIGINAL JOB NO.	TITLE	PART NO.
C1444	SEAL, DOOR, SLEEPER BOX	48-2401
LAST CHG LTR A		SHEET 1 OF 1

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION
A	C1444	GEH	6-1-82	ELIM .31 DIA

SKETCH:



SPECIFICATION NUMBER:

	MATERIAL	Sheller-Globe	FREIGHTLINER SPECIFICATION NUMBERS
	①	SC-553	48-2401-000

ENGINEERING NOTES:

1. MATERIAL: Medium Density SC41 Closed Cell Neoprene Foam.
2. FINISH: As Extruded.
3. TOLERANCE: ± .03

Nu - X4-C1444 CANCELLED

COMPILED	JS	DATE DRAWN			
APPROVED		2/6/81			

EAC - 832 Portland FREIGHTLINER CORPORATION Oregon 97208

A

ADRIENNE CHILBERG

DRAWN	DAJ	TITLE	DRAWING NUMBER	
APPRV	DAJ	FOAM-URETHANE OPEN CELL, PSA	48-02402	
DATE	10/27/97			
CATIA ORIGINAL		FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1	CHG. LTR. H

SCOPE: THIS SPECIFICATION IDENTIFIES AN OPEN CELL URETHANE WITH PRESSURE SENSITIVE ADHESIVE BACKING.

APPLICATION: DUST SEALS, GASKETS, VIBRATION CUSHIONS.

WIDTH (INCHES)	THICKNESS (INCHES)	DENSITY (LBS/CU-FT)	COLOR	MANUFACTURER PRODUCT NO. BOYD	FREIGHTLINER SPECIFICATION NUMBER
.500	.062	20	BLACK	4701-01-20062-1604	48-02402-062
.375	.188	30	BLACK	4701-01-30188-1604	48-02402-188
2.000	.188	15	BLACK	4701-01-15188-1604	48-02402-189
1.000	.250	15	GRAY	4701-50-15250-1637	48-02402-250
4.125	.250	15	BLACK	4701-40-15250-1604	48-02402-251
.375	.375	30	BLACK	4701-01-30375-1604	48-02402-375
1.000	.500	15	BLACK	4701-01-15500-1604	48-02402-500

H

SPECIFICATIONS:

1. DENSITY (LBS/CU-FT): PER ASTM D3574 — AS NOTED
2. ELONGATION (% MIN AT POINT OF BREAK): — 100
3. SERVICE TEMPERATURES: — -40° TO 70°C(-40° TO 158°F) INTERMITTENT TO 120°C(248°F)
4. COMPRESSION DEFLECTION (25% DEF)(PSI): PER ASTM D3574 — 4 - 8
5. TENSILE STRENGTH (PSI MIN): — 40
6. K FACTOR: PER ASTM C518 — .5
7. THIS MATERIAL MUST COMPLY WITH FMVSS NO.302, FLAMMABILITY OF INTERIOR MATERIALS.

CHG	JOB NO	DATE	BY	REVISION
H	PA2042-78	10/27/97	DAJ	RDRWN IN CATIA & REVISED VEND P/N ON -250/251.

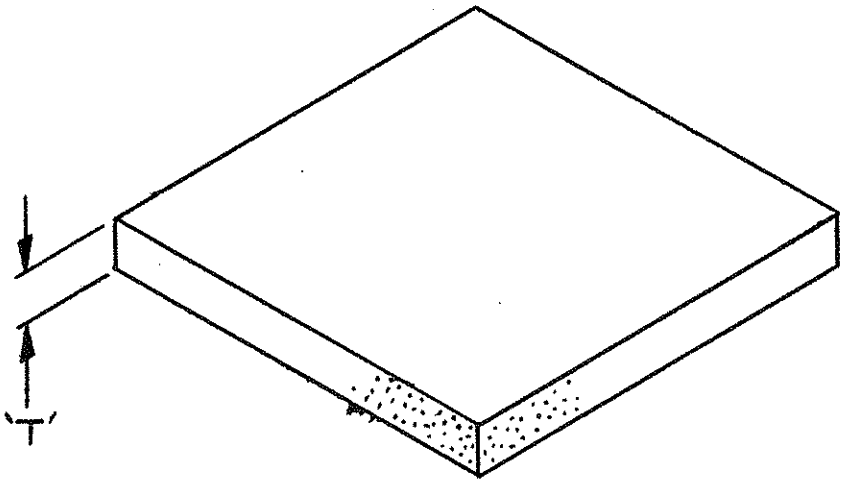
48-2405

ORIGINAL JOB NO.	TITLE	PART NO.
C1850J	FOAM, EPDM	48-2405
LAST CHG LTR	CLOSED CELL	SHEET 1 OF 1

SCOPE: This specificaiton describes closed cell EPDM foam sheet.

APPLICATION: General use, insulation, air barrier, etc. Is tough and resilient, does not crumble. Excellent weather and ozone resistance.

SKETCH:



Thickness 'T' in inches		Manufacturer's Numbers	Freightliner Spec. Numbers *
3/32 1/8 3/16 1/4 3/8 1/2		Order by Description	48-2405 -009 -012 -019 -025 -038 -050

* Dash No. = Thickness in 1/100's inch. Dash no, as shown has pressure sensitive adhesive backing. If non-adhesive back is desired use '5' as first digit of dash number, (Ex: -12 is adhesive back, 1/8 in. thick, -525 is non-adhesive back 1/4 in. thick)

SPECIFICATIONS:

1. Material: EPDM (Ethylene Propylene Diene Methylene) foam. Temp. range -90^{0}F to $+257^{0}$F. Density 9-14 Lbs/Ft^3. Must pass FMVSS 302, Flammability of Interior Materials.
2. Color: Gray

COMPILED	GRH	DATE DRAWN			Unit of Measure
APPROVED	[illegible]	4-29-81			SQ. FT.

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION

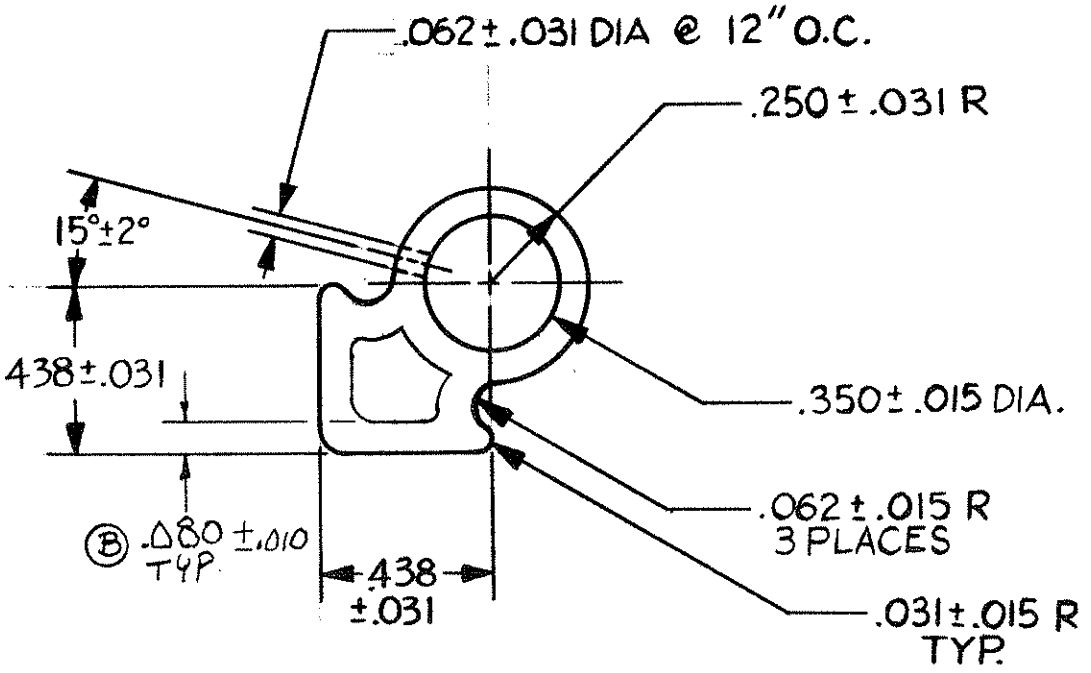
LTR	JOB NO.	BY	DATE	CHANGE INFORMATION

ORIGINAL JOB NO.	TITLE	PART NO.
C1444	SEAL, RUBBER, CONV. SLEEPER BOX	48-2407
LAST CHG LTR B		SHEET 1 OF 1

SCOPE: This specification identifies a specific closed cell rubber seal with perforated holes.

APPLICATION: Especially for the conv. sleeper box doors.

SKETCH:



SCALE: DOUBLE

SPECIFICATION NUMBER:

Sheller-Globe	FREIGHTLINER SPECIFICATION NUMBERS
SC-552	48-2407-000

SPECIFICATIONS:

(1) Material: Medium Density SC41 Closed Cell Neoprene Foam.

2. Finish: As extruded.

N.U. X4 - C1444 (CANCELLED) 6/25/82

COMPILED	TTR	DATE DRAWN		MATERIAL	UNIT OF MEASURE
APPROVED	ff	11-09-81		(1)	FT.

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION
A	C1444	JS	12/16/81	Revised Note 1
B	C1444	GEH	6-1-82	REVISE SHAPE

EAC-826 Portland FREIGHTLINER CORPORATION Oregon 97208

DRAWN	DAJ	TITLE	DRAWING NUMBER	
APPRV	DAJ	SHEET-RUBBER RECYCLED	48-02408	
DATE	11/24/98			
CATIA ORIGINAL		FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1	CHG. LTR. E
UNLESS OTHERWISE NOTED, DIMENSIONS ARE IN INCHES				

SCOPE: THIS SPECIFICATION IDENTIFIES RECYCLED RUBBER SHEET STOCK.

APPLICATION: GENERAL NON-CRITICAL APPLICATIONS.

THICKNESS (INCHES)	TOLERANCE (INCHES)	FREIGHTLINER PART NUMBER
7/64	±.020	48-02408-010
1/8	±.020	48-02408-012
3/16	±.025	48-02408-019
1/4	±.030	48-02408-025

E

ENGINEERING NOTES:

1. MATERIAL: FIBER REINFORCED MASTICATED RUBBER

2. PHYSICAL PROPERTIES: (TYPICAL)

COLOR/FINISH	BLACK/SMOOTH
TENSILE STRENGTH (psi) (ASTM D412, DIE C)	750 MIN (PARALLEL TO GRAIN) 350 MIN (PERPENDICULAR TO GRAIN)
ELONGATION (%) (ASTM D412, DIE C)	15 MIN (PARALLEL TO GRAIN) 40 MIN (PERPENDICULAR TO GRAIN)
HARDNESS, SHORE A: (ASTM D2240)	80 ±5
HEAT AGING, 70 HRS @ 158°F	
% CHANGE IN TENSILE STRENGTH	±25 MAX
% CHANGE IN ELONGATION	±25 MAX
CHANGE IN HARDNESS, SHORE A	±10 PTS. MAX

3. QUALITY: GOOD COMMERCIAL QUALITY SUITABLE FOR INTENDED USE.

CHG	JOB NO	DATE	BY	REVISION
E	P07074-01	11/24/98	DAJ	REVISED AND REDRAWN IN CATIA. ADDED -010.

RELEASE NO.	DESCRIPTION	DOCUMENT NO.
P6977E-01	OIL, REFRIGERANT	48-02411
LAST REV LTR: A		SHEET 1 OF 1

LTR	RLSE NO.	BY	DATE	REVISION DESCRIPTION

LTR	RLSE NO.	BY	DATE	REVISION DESCRIPTION
A	P6977E-01	ERK	06/24/88	REDRAWN; ADD-001

SCOPE: THIS SPECIFICATION IDENTIFIES A HIGHLY REFINED OIL USED AS A LUBRICATING AGENT IN AIR CONDITIONING SYSTEMS.

APPLICATION: LUBRICATION FOR AIR CONDITIONING COMPRESSOR, FREON HOSE O-RINGS AND HOSE BUILD-UP.

SPECIFICATION NUMBERS:

MFR IDENTIFICATION MFR & PRODUCT	FREIGHTLINER SPECIFICATION NUMBER
SUNISO NO. 5 TEXACO CAPELLA WF100 (NAPHTHENIC)	48-02411-000
FREOL DS83P (PARAFFIN BASE)	48-02411-001

SPECIFICATIONS:

	48-02411-000	48-02411-001
SPECIFIC GRAVITY	.931/.959	.887
FLASH POINT (°C)	196	238
VISCOSITY (cST)		
40°C	96	81.5
100°C	7.9/8.3	9.7
VISCOSITY INDEX	5/20	96
FLOC POINT (°C)	-35/-55	-42

01000

DRAWN BY	DATE DRAWN			MASTER NO.
ERK	06/24/88			00001
APVD BY				

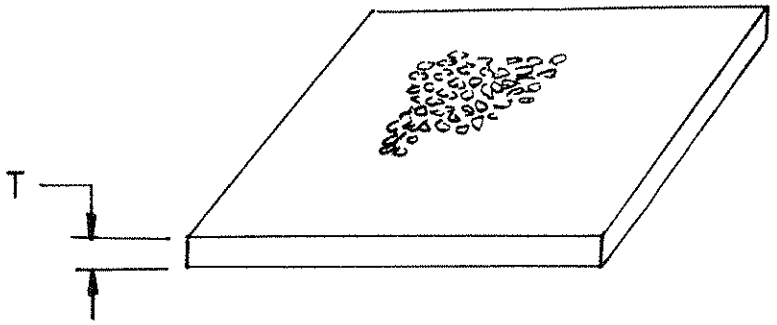
48-02412

ORIGINAL JOB NO.	TITLE	PART NO.
M0192	FOAM, CLOSED CELL	48-02412
LAST CHG LTR A		SHEET 1 OF 1

SCOPE: This specification identifies a general use closed cell, foam.

APPLICATION: General cab insulation.

SKETCH:



SPECIFICATION NUMBERS:

Thickness T Inches	Manufacturer's Identification			Freightliner Specification Number*
	BOD	UNR		
.125 .250 .375 .500 .625 .750	①	⑦		48-02412-012 -025 -038 -050 -062 -075

* Dash number equals thickness in 1/100's of an inch

① Material: Ethylene-vinyl acetate copolymer (Bevalite)

2. Density: 1.5 to 5.0 lb/ft^3
3. Color: Charcoal gray or black
4. Thermal Conductivity Range: .20-.30 K factor.
5. Temp. Range: -110^{0}F to 180^{0}F
6. This material must pass FMVSS No. 302, Flammability of Interior Materials.

⑦ Material: PVC-Nitrile rubber (Vinyl-Nitrile, LPC)

CHANGE INFORMATION	DATE	BY	JOB NO.

CHANGE INFORMATION	DATE	BY	JOB NO.
Added: Note 7; Rev: Specs.	5-4-84	MGP	M0282
			A

COMPILED	D.LeL.	DATE DRAWN	Master Number		UNIT OF MEASURE
APPROVED	BJL	6-21-83	00001	000D1	Square Foot

Portland FREIGHTLINER CORPORATION Oregon 97208

ADRIENNE CHILBERG

DRAWN	DJL	TITLE	DRAWING NUMBER	
APPRV	BBK	FIBERBOARD-LAMINATED	48-02413	
DATE	06/21/83	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1	CHG. LTR. B
CATIA ORIGINAL				
UNLESS OTHERWISE NOTED, DIMENSIONS ARE IN INCHES				

SCOPE: THIS SPECIFICATION IDENTIFIES A SEMI-RIGID LAMINATED FIBERBOARD.

APPLICATION: UPHOLSTERY BACKING.

SPECIFICATION NUMBER:

THICKNESS (INCHES)	FREIGHTLINER SPECIFICATION NUMBER
.080	48-02413-080
.100	-100

SPECIFICATIONS:

1. MATERIAL:
   CORE: LAMINATED CORE OF KRAFT AND OTHER FIBERS.
   SURFACE: EACH SIDE IS TO BE COVERED WITH A KRAFT LINER WITH A .001 INCH THICK FILM POLYETHYLENE MOISTURE BARRIER.

2. THIS MATERIAL MUST PASS FMVSS 302, FLAMABILITY OF INTERIOR MATERIALS.

B 3. COLOR: NATURAL

CHG	JOB NO	DATE	BY	REVISION
B	P00772-01	02/21/97	JCT	REVISED AND REDRAWN IN CATIA. ADDED NOTE 3.

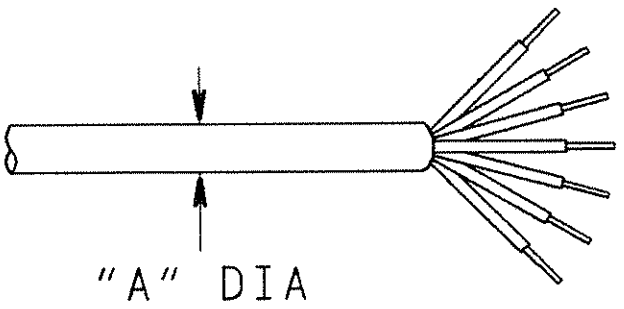
ORIGINAL JOB NO.	TITLE	PART NO.
9131B	CABLE 7 CONDUCTOR, JACKETED	48-02422
LAST CHG LTR		SHEET 1 OF 1

CHANGE INFORMATION	DATE	BY	JOB NO.	LTR

SCOPE: THIS SPECIFICATION IDENTIFIES A 7 CONDUCTOR ELECTRICAL CABLE.

APPLICATION: POWER CABLE FOR TRUCK AND TRAILER CONNECTIONS.

SKETCH:



SPECIFICATION NUMBERS:

GAUGE AWG	CONDUCTORS	COLOR CODE	"A" DIA		FREIGHTLINER SPECIFICATION NUMBER
8	1	WHITE	0.690 ±.020		48-02422-000
10	1	RED			
12	5	BLUE BLACK YELLOW GREEN BROWN			

ENGINEERING NOTES:

1. CABLE MUST MEET SAE J1067, RECOMMENDED PRACTICE FOR 7-CONDUCTOR JACKETED CABLE FOR TRUCK & TRAILER CONNECTIONS (8 GA GROUND WIRE & 10 GA STOP LAMP WIRE).
2. ALL CONDUCTORS, INCLUDING 8 GA WHITE, MUST BE INSULATED PER SAE J1067 2.2.2.
3. INSULATION OF WIRE AND JACKET SHALL NOT CRACK WHEN SUBJECTED TO -40° FOR A PERIOD OF 4 HOURS, THEN WRAPPED 360° AROUND A 3 INCH MANDREL WHILE STILL AT -40°.
4. INSULATION MUST MEET SAE J1128 PAR 5.6.

CHANGE INFORMATION	DATE	BY	JOB NO.	LTR

COMPILED	FEF	DATE DRAWN	CADAM ORIGINAL		UNIT OF MEASURE
APPROVED	DJL	10-03-83			FT

48-02430

ORIGINAL JOB NO.	TITLE	PART NO.
5331B	ULTRAVIOLET CURING ADHESIVE	48-02430
LAST CHG LTR –		SHEET 1 OF 1

SCOPE: THIS SPECIFICATION IDENTIFIES AN ULTERVIOLET CURING ADHESIVE.

APPLICATION: USED FOR ADHESIVE BONDING OF GLASS TO METAL.

SPECIFICATION NUMBERS:

PRODUCT	MANUFACTURER	FREIGHTLINER SPECIFICATION NUMBER
LOCTITE ULTRAVIOLET CURING ADHESIVE NO. 350	LOC	48-02430-001

TYPICAL PRODUCT PROPERTIES:

UNCURED (LIQUID) PROPERTIES	LOCTITE 350
BASE RESIN	MODIFIED ACRYLIC
COLOR	CLEAR AMBER
SPECIFIC GRAVITY	1.01
VISCOSITY	4,000 TO 6,000 CP
TOXICITY	LOW, EYE IRRITANT MILD SKIN IRRITANT
FLASHPOINT (COC)	>200° F
SHELF LIFE @ 72° F	6 MONTHS
CURED RESIN PROPERTIES	LOCTITE 350
HARDNESS SHORE D	60
TENSILE STRENGTH (ASTM D412)	3600 PSI
ELONGATION @ BREAK	200%
TEAR STRENGTH	65 LB/IN

STRENGTH AND AGING PROPERTIES:

A. STRENGTH

GLASS-135° PEEL	50 - 70 POUNDS/INCH WIDTH
SHEAR TORQUE ALUMINUM HEXAGON - GLASS	70 FT/LB
TENSILE SHEAR - GLASS - GLASS	800 PSI (GLASS FAILURE)

B. ENVIRONMENTAL RESISTANCE

1. PEEL STRENGTH

EXPOSED 1 WEEK 100° F - 95% RH	50 PIW
1 WEEK 120° F - 100% RH	45 PIW
2 HOURS BOILING WATER	50 PIW

2. TENSILE SHEAR PLASTIC/GLASS - AGED 30 DAYS, 95° F, 95% RH

SUBSTRATE	STRENGTH BEFORE AGING	STRENGTH AFTER AGING
ABS/GLASS	720 PSI	650 PSI
PVC/GLASS	775 PSI	720 PSI
POLYCARBONATE/GLASS	780 PSI	740 PSI
STYRENE/GLASS	200 PSI	220 PSI
ACRYLIC/GLASS	735 PSI	360 PSI
POLYESTER/GLASS	765 PSI	620 PSI
EPOXY/GLASS	700 PSI	627 PSI

CHANGE INFORMATION	DATE	BY	NO.	LTR

CHANGE INFORMATION	DATE	BY	NO.	LTR

COMPILED	FEF	DATE DRAWN	CADAM ORIGINAL	UNIT OF MEASURE	MASTER NUMBER	
APPROVED	DJL	03-13-84		GL	07070	00001

DRIENNE CHILBERG

DRAWN	DAJ	TITLE	DRAWING NUMBER	
APPRV	GGJ	FIBERGLASS REINFORCED POLYESTER MATERIALS	48-02435	
DATE	05/19/98			
CATIA ORIGINAL		FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 5	CHG. LTR. C

SCOPE: THIS SPECIFICATION COVERS THE REQUIREMENTS FOR MOLDED PLASTICS BASED ON GLASS FIBER REINFORCED POLYESTER (UP & GF) MATERIALS FORMED BY EITHER MATCH DIE MOLDING, VACUUM BAG/LAMINATE RESIN INFUSION, SPRAY-UP, OR HAND LAY-UP.

APPLICATION: COVERS THREE TYPES OF FIBERGLASS AS FOLLOWS:

USAGES	FREIGHTLINER SPECIFICATION NUMBERS
SHALL APPLY TO ALL MAJOR BODY PANELS SUCH AS DOORS, HOODS, FENDERS, HEADLAMP PANELS, DOGHOUSES, ETC.	48-02435-001 48-02435-004
SHALL APPLY TO ALL LOW STRESSED PARTS SUCH AS GLOVE BOXES, HEADLINERS, TYPES OF TRIM, ETC.	48-02435-002
SHALL APPLY TO PANELS WHERE A SMOOTH SURFACES IS NOT REQUIRED SUCH AS SPLASH SHIELDS, HOOD REINFORCEMENTS, ETC.	48-02435-003 48-02435-005

SPECIFICATIONS:

1. MATERIAL:

RESIN - SHALL BE EITHER CLEAR OR A FREIGHTLINER ENGINEERING SPECIFIED COLOR AND SHALL BE FORMULATED TO MEET SPECIFIED MINIMUM PERFORMANCE VALUES AFTER A 240°F BAKE CYCLE.

GEL COAT - SHALL BE TINTED TO A DARK GRAY OR BLACK COLOR AND FORMULATED WITH A FILLER SYSTEM TO PROVIDE EASE OF SANDING PRIOR TO PRIMING OR TOPCOAT APPLICATION. THE GEL COAT SHALL BE .016 TO .020 INCHES THICK (DFT) AND FORMULATED TO MEET FREIGHTLINER MINIMUM PERFORMANCE VALUES AFTER A 240°F BAKE CYCLE.

PAINT - THE FRP MUST BE COMPATIBLE WITH THE PAINT SYSTEMS AND MATERIALS USED BY FREIGHTLINER.

CHG	JOB NO	DATE	BY	REVISION
B	P02986-01	07/29/97	DAJ	REVISED AND REDRAWN IN CATIA, REVISED MATERIAL NOTE.
C	PA2152-13	05/19/98	DAJ	ADDED -004 AND -005.

DRAWN	DAJ	TITLE	DRAWING NUMBER	
APPRV	GGJ	FIBERGLASS REINFORCED POLYESTER MATERIALS	48-02435	
DATE	05/19/98	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 2 OF 5	CHG. LTR. C
CATIA ORIGINAL				

SPECIFICATIONS:

48-02435-001 - SHALL CONSIST OF AT LEAST 25% BY WEIGHT REINFORCING GLASS FIBERS IN THE FORM OF MAT, CLOTH, OR CHOPPED STANDS.

48-02435-002 - SHALL CONSIST OF AT LEAST 15% BY WEIGHT REINFORCING GLASS FIBERS IN THE FORM OF MAT, CLOTH, OR CHOPPED STANDS.

48-02435-003 - SHALL CONSIST OF AT LEAST 25% BY WEIGHT REINFORCING GLASS FIBERS IN THE FORM OF MAT, CLOTH, OR CHOPPED STANDS.

48-02435-004 - SHALL CONSIST OF AT LEAST 35% BY WEIGHT REINFORCING GLASS FIBERS IN THE FORM OF MAT, CLOTH, OR CHOPPED STANDS.

48-02435-005 - SHALL CONSIST OF AT LEAST 35% BY WEIGHT REINFORCING GLASS FIBERS IN THE FORM OF MAT, CLOTH, OR CHOPPED STANDS.

GEL COAT AND PAINT SPECIFICATIONS NOT A REQUIREMENT OF 48-02435-003 AND 48-02435-005.

2. MECHANICAL PROPERTIES:
TESTS SHALL BE CONDUCTED AT LEAST SEVEN DAYS AFTER MOLDING. ALL MATERIALS, UNLESS OTHERWISE NOTED, SHALL BE CONDITIONED 48 HOURS AT 23 ±2°C (72 ±4°F) AND 50 ±2% RELATIVE HUMIDITY PRIOR TO TESTING. SEE TABLE 1 FOR PROPERTY REQUIREMENTS.

TEST PROCEDURES:

* UNLESS OTHERWISE SPECIFIED ON THE ENGINEERING DRAWING. THE FOLLOWING SAMPLING PROCEDURE IS TO BE USED WHEN TESTING THESE PROPERTIES.

** FIVE TEST SPECIMENS SHALL BE SELECTED AT RANDOM AND ARE TO BE ORIENTED IN ANY DIRECTION. FIVE ADDITIONAL SPECIMENS ARE TO BE PREPARED PERPENDICULAR TO THE FIRST SET. THE NUMERICAL AVERAGE OF THE 10 SPECIMENS SHALL NOT BE LESS THAN THE SPECIFIED VALUE AND THE MINIMUM SINGLE VALUE OF THE 10 SPECIMENS SHALL NOT BE LESS THAN 70% OF THE SPECIFIED VALUE SHOWN.

CHG	JOB NO	DATE	BY	REVISION
B	P02986-01	07/29/97	DAJ	REVISED AND REDRAWN IN CATIA, REVISED MATERIAL NOTE.
C	PA2152-13	05/19/98	DAJ	ADDED -004 AND -005.

DRAWN	DAJ	TITLE	DRAWING NUMBER	
APPRV	GGJ	FIBERGLASS REINFORCED POLYESTER MATERIALS	48-02435	
DATE	05/19/98			
CATIA ORIGINAL		FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 3 OF 5	CHG. LTR. C

PROPERTY REQUIREMENTS

TABLE 1

PROPERTY		TEST PROCEDURE		REQUIREMENTS		
				-001/-003	-002	-004/-005
WATER ABSORPTION, % MAX, AVERAGE		ASTM D570 (22 HRS)		0.5	0.5	0.5
TENSILE STRENGTH, MINIMUM	AVERAGE PSI	ASTM D638		10,000	7,000	12,600
	SINGLE VALUE PSI			7,000	4,900	11,250
FLEXURAL STRENGTH, MINIMUM	AVERAGE PSI	ASTM D790		18,000	12,000	24,000
	SINGLE VALUE PSI			12,600	8,400	19,000
FLEXURAL MODULUS MIN, AVERAGE, PSI		ASTM D790		0.8×10^6	0.6×10^6	1.1×10^6
FLEXURAL STRENGTH RETENTION, MIN, AVERAGE, PSI		ASTM D790*		12,600	8,400	19,100
FLEXURAL MODULUS RETENTION, MIN, AVERAGE, PSI		ASTM D790*		5.6×10^5	4.2×10^5	8.8×10^5
HARDNESS, BARCOL, MIN, AVERAGE		ASTM D2583		40	40	45
REVERSE IMPACT CRACKING HEIGHT, MIN. **	TEST AS RECEIVED	ROOM TEMP	INCHES	8	7	9
	CONDITIONED	-29°C (20°F)	INCHES	6	5	7
	TESTED AFTER AGING	ROOM TEMP	INCHES	8	7	9

* SEE TEST PROCEDURES, PARAGRAPH 1.

** SEE TEST PROCEDURES, PARAGRAPH 2.

CHG	JOB NO	DATE	BY	REVISION
B	P02986-01	07/29/97	DAJ	REVISED AND REDRAWN IN CATIA, REVISED MATERIAL NOTE.
C	PA2152-13	05/19/98	DAJ	ADDED -004 AND -005.

DRAWN	DAJ	TITLE	DRAWING NUMBER	
APPRV	GGJ	FIBERGLASS REINFORCED POLYESTER MATERIALS	48-02435	
DATE	05/19/98	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 4 OF 5	CHG. LTR. C
CATIA ORIGINAL				

1. RETENTION OF FLEXURAL STRENGTH AND MODULUS

THESE TEST SHALL BE PERFORMED IN ACCORDANCE WITH ASTM D790 EXCEPT THE AS RECEIVED SPECIMENS SHALL BE IMMERSED IN BOILING WATER FOR TWO HOURS. COOLED IN WATER TO ROOM TEMPERATURE AND TESTED WET.

2. REVERSE IMPACT CRACKING

A CONDITIONED SPECIMEN SUPPORTED AND CLAMPED SECURELY IN A 5" DIA. FRAME MUST NOT CRACK ON REVERSE SIDE WHEN SUBJECTED TO AN IMPACT PRODUCED BY THE DROP ON THE UNFINISHD SIDE FROM THE SPECIFIED HEIGHT OF A 1 1/2 INCH DIA. BALL WEIGHING 1/2 POUND APPLIED AT THE CENTER OF THE PANEL.

PARTS SHALL NOT FRACTURE WHEN IMPACT TESTED AT A POINT, OR POINTS, INDICATED ON THE DRAWING. SINCE THIS TEST IS INTENDED FOR THE DETECTION OF IMPROPERLY MOLDED PARTS WITH A HEAVY IMPACT, FAILURE IS DEFINED AS A VISIBLE CRACK MORE THAN 12.7MM (.5") IN LENGTH. VISIBLE CRACKS ≤12.7MM (.5") OR CRAZING WILL NOT BE CAUSE FOR REJECTION.

3. GLASS FIBER AND FILLER CONTENT

1. WEIGH EACH OF THREE ONE INCH SQUARE TEST SPECIMENS SELECTED AT RANDOM FROM DIFFERENT LOCATIONS ON THE PART OR TEST PLAQUE.

2. PLACE SPECIMEN IN TARED CRUCIBLE AND IGNITE IN A MUFFLE FURNACE MAINTAINED AT 427° ±6°C (800° ±10°F) FOR 30 MINUTES.

3. INCREASE TEMPERATURE TO 649° ±28°C (1200° ±50°F) FOR 60 MINUTES.

4. COOL TO ROOM TEMPERATURE, 2° ±3°C 72° ±5°F).

5. WEIGH THE RESIDUE OF GLASS FIBERS AND FILLER MATERIAL.

CHG	JOB NO	DATE	BY	REVISION
B	P02986-01	07/29/97	DAJ	REVISED AND REDRAWN IN CATIA, REVISED MATERIAL NOTE.
C	PA2152-13	05/19/98	DAJ	ADDED -004 AND -005.

DRAWN	DAJ	TITLE	DRAWING NUMBER	
APPRV	GGJ	FIBERGLASS REINFORCED POLYESTER MATERIALS	48-02435	
DATE	05/19/98			
CATIA ORIGINAL		FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 5 OF 5	CHG. LTR. C

3. GLASS FIBER AND FILLER CONTENT

6. BOIL THE RESIDUE IN A 5% BY VOLUME HYROCHLORIC ACID SOLUTION FOR 15 MINUTES. IF THE ACID SOLUTION DOES NOT COMPLETELY DISSOLVE THE FILLER RESIDUE, ALTERNATIVE REAGENTS SHALL BE USED UNTIL ALL FILLERS ARE REMOVED.

7. RINSE THE GLASS FIBERS SEVERAL TIMES WITH DISTILLED WATER.

8. DRY IN AN OVEN AT 121° ±3°C (250° ±5°F) FOR TWO HOURS.

9. COOL TO ROOM TEMPERATURE, 22° ±3°C (72° ±5°F).

10. WEIGH GLASS FIBERS.

11. CALCULATE % BY WEIGHT GLASS FIBERS AS FOLLOWS:.

$$\text{WT. \% GLASS FIBERS} = \frac{\text{WT. OF WASHED GLASS FIBERS (10) X 100}}{\text{ORIGINAL WT. OF SPECIMEN (1)}}$$

12. CALCULATE % BY WEIGHT FILLER CONTENT AS FOLLOWS:

$$\text{WT. \% FILLERS} = \frac{\text{WT. OF RESIDUES (5) - WT. OF GLASS FIBERS, (10)}}{\text{ORIGINAL WT. OF SPECIMEN (1)}}$$

SUPPLIERS RESPONSIBILITY:

1. MATERIAL SUBMITTED FOR QUALIFICATION SHALL BE ACCOMPANIED BY DETAILED TEST INFORMATION AND ALSO BY VERIFICATION THAT THE MATERIAL MEETS ALL REQUIREMENTS OF THIS SPECIFICATION.

2. PRODUCTION MATERIAL SUPPLIED TO THIS SPECIFICATION SHALL BE EQUIVALENT IN ALL RESPECTS TO THAT WHICH WAS APPROVED. THERE SHALL BE NO CHANGES MADE IN THE FORMULATION OR PROCESSING WITHOUT PRIOR APPROVAL OF THE MATERIALS ENGINEERING DEPARTMENT.

CHG	JOB NO	DATE	BY	REVISION
B	P02986-01	07/29/97	DAJ	REVISED AND REDRAWN IN CATIA, REVISED MATERIAL NOTE.
C	PA2152-13	05/19/98	DAJ	ADDED -004 AND -005.

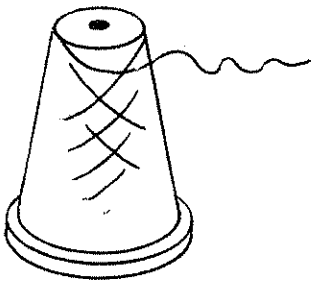
ORIGINAL JOB NO.	TITLE	PART NO.
0271C	THREAD, NYLON	48-02436
LAST CHG LTR		SHEET 1 OF 1

CHANGE INFORMATION	DATE	BY	JOB NO.	LTR

SCOPE: This specification identifies nylon thread.

APPLICATION: Upholstery sewing, etc.

SKETCH:



SPECIFICATION NUMBERS:

COLOR		FREIGHTLINER SPECIFICATION NUMBER
Black		48-02436-001
Light Blue		-002
Tan		-003
Light Red		-004

SPECIFICATIONS:

1. Material: NO. 69 thread 100% nylon.

CHANGE INFORMATION	DATE	BY	JOB NO.	LTR

COMPILED	KCB	DATE DRAWN		UNIT OF MEASURE	MASTER NO.	
APPROVED	DJL	5-31-84		YD	00001	000D1

40-UC44C

ORIGINAL JOB NO.	TITLE	PART NO.
2845B	PRIMER COATING WELD THROUGH, ZINC RICH	48-02442
LAST CHG LTR		SHEET 1 OF 1

CHANGE INFORMATION	DATE	BY	JOB NO.	LTR

SCOPE: THIS SPECIFICATION IDENTIFIES A SPOT WELDABLE, CORROSION RESISTANT, ZINC RICH PRIMER FOR USE ON FERROUS METAL SURFACES. IT MUST BE COMPATIBLE WITH THE PRODUCTION CATHODIC ELECTRODEPOSITION PRIMER.

APPLICATION: THIS MATERIAL IS INTENDED FOR USE MAINLY IN THE PRE-PAINT AREA FOR SUCH APPLICATIONS AS ADD-ON-PARTS, OVERLAPPING AREAS AND OTHER AREAS WHICH HAVE TO BE SPOT WELDED.

SPECIFICATION NUMBERS:

MANUFACTURER'S NUMBER		FREIGHTLINER SPECIFICATION NUMBER
PPG		
97-676		48-02442-100

CHANGE INFORMATION	DATE	BY	JOB NO.	LTR

COMPILED	FEF	DATE DRAWN	CADAM ORIGINAL	UNIT OF MEASURE	MASTER NUMBER	
APPROVED		05-17-84		GL	07090	000D1

M/F

HURTENNE CHILBERG

DRAWN	DAJ	TITLE	DRAWING NUMBER	
APPRV	DAJ	COMPOUND-CORROSION PREVENTATIVE SPRAYABLE	48-02444	
DATE	08/21/97			
CATIA ORIGINAL		FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1	CHG. LTR. D

SCOPE: THIS SPECIFICATION IDENTIFIES A PETROLEUM BASED SPRAYABLE NON-SAGGING CORROSION PREVENTATIVE COMPOUND.

APPLICATION: TO PROVIDE CORROSION PROTECTION TO BOXED, ENCLOSED OR CONCEALED SURFACES.

MANUFACTURER'S NUMBER		FREIGHTLINER SPECIFICATION NUMBER
WRG	ZIC	
TEROTEX 3987 (2)		48-02444-100
TEROTEX 3987M		48-02444-101

ENGINEERING NOTES:

1. MATERIAL: PFINDER VA 18/65-4

(2) APPROVED ALTERNATE: FIN 000 986 37 70

CHG	JOB NO	DATE	BY	REVISION
D	P02409-01	08/21/97	DAJ	REVISED AND REDRAWN ON CATIA. ADDED -101.

MATERIAL SPECIFICATION

ORIGINAL JOB NO.		TITLE	PART NO.
2865C		SPRAYABLE CORROSION PREVENTATIVE COMPOUND	48-02444
LAST CHG LTR	C		SHEET 1 OF 1

SCOPE: THIS SPECIFICATION IDENTIFIES A SPRAYABLE NON-SAGGING CORROSION PREVENTATIVE COMPOUND.

APPLICATION: MATERIAL SUPPLIED TO THIS SPECIFICATION IS INTENDED TO PROVIDE CORROSION PROTECTION TO BOXED, ENCLOSED OR CONCEALED SURFACES.

SPECIFICATION NUMBERS:

TYPE	MANUFACTURER'S NUMBER		FREIGHTLINER SPECIFICATION NUMBER
	WRG	ZIC	
PETROLEUM BASED	TEROTEX 3987		48-02444-100

(C)

ENGINEERING NOTES:

(C) (1) APPROVED ALTERNATE:

TYPE	MANUFACTURER'S NUMBER	
	FIN (1)	ZIC
PETROLEUM BASED	FIN 000 986 37 70	

MATERIAL: PFINDER VA 18/65-4

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION
A	2865C	FEF	06-26-84	REVISED & REDRAWN
B	8141C	DJL	12-05-84	REV-100 MFG #, DEL-200
C	4816D	BT	02-27-86	ADD NOTE 1; REVISE NOTE

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION

COMPILED	FEF	DATE DRAWN	CADAM ORIGINAL	UNIT OF MEASURE	MASTER NUMBER	
APPROVED	DJL	06-26-84		GL	07080	000D1

PORTLAND FREIGHTLINER CORPORATION OREGON 97208

EAC-826

HORTENNE CHILBERG

DRAWN	DAJ	TITLE	DRAWING NUMBER	
APPRV	DAJ	SEALER WELD THROUGH	48-02445	
DATE	08/21/97			
CATIA ORIGINAL		FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1	CHG. LTR. D

SCOPE: THIS SPECIFICATION IDENTIFIES A WELDABLE SEALING MATERIAL THAT CAN BE WELDED THROUGH USING CONVENTIONAL PRODUCTION RESISTANCE SPOT WELDING EQUIPMENT AND CURES UNDER THE HEAT OF PRODUCTION PAINT OVENS. THIS MATERIAL MUST BE COMPATIBLE WITH CATHODIC ELECTRO-DEPOSITION PRIMER.

APPLICATION: FOR SEALING JOINTS (WELDED, RIVETED) AGAINST THE PASSAGE OF WATER AND DUST, ADHERING TO METAL AND PROVIDING CORROSION PROTECTION.

MANUFACTURER'S NUMBER		FREIGHTLINER SPECIFICATION NUMBER
HBF		
WC 2425 (1)		48-02445-100
WC 2510 (2)		48-02445-101

ENGINEERING NOTES:

(1) APPROVED ALTERNATE: 000 989 21 20

(2) NON-EXPANDABLE WELD THROUGH.

CHG	JOB NO	DATE	BY	REVISION
D	P02409-01	08/21/97	DAJ	REVISED AND REDRAWN ON CATIA. ADDED -101.

MATERIAL SPEC

ORIGINAL JOB NO.	TITLE	PART NO.
7589C	SEALER-FLEXIBLE, EXT JOINTS ELECTROCOATED SURFACES	48-02447
LAST CHG LTR: A		SHEET 1 OF 1

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION
A	7589C	DJL	09-07-84	REVISED & REDRAWN

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION

SCOPE:

THIS SPECIFICATION IDENTIFIES A PUMPABLE, HEAT CURED, NON-FLOW, FLEXIBLE SEALING MATERIAL FOR APPLICATION OVER CATHODIC ELECTROCOATED (E-COATED) METAL SURFACES. THIS SEALER IS INTENDED TO BE APPLIED AFTER E-COAT BAKE AND PRIOR TO COLOR COAT.

APPLICATION:

MATERIAL SUPPLIED TO THIS SPECIFICATION IS INTENDED FOR SEALING AGAINST THE PASSAGE OF WATER OR DUST IN JOINTS OF CABS WHICH HAVE BEEN PRIMED.

SPECIFICATION NUMBERS:

MANUFACTURER'S NUMBER			FREIGHTLINER SPECIFICATION NUMBER
CSC			48-02447-100
SM 707 MDM			

COMPILED	DJL	DATE DRAWN	CADAM ORIGINAL	UNIT OF MEASURE	MASTER NUMBER	
APPROVED	DJL	09-07-84		GL	07070	000D1

RELEASE NO.	DESCRIPTION	DOCUMENT NO.
2852C	TAPE, CLOTH/RUBBER, PLASTIC-TREATED	48-02449
LAST REV LTR		SHEET 1 OF 1

LTR	RLSE NO.	BY	DATE	REVISION DESCRIPTION

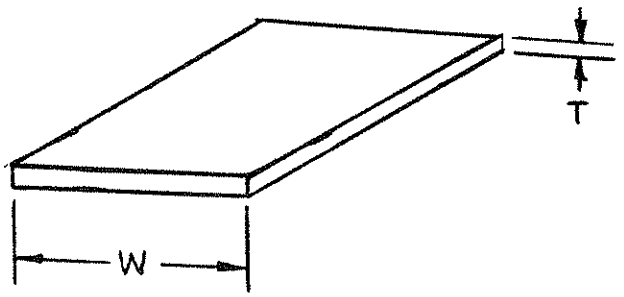
SCOPE:

This specification describes a plastic-treated (vinyl) cloth/rubber sealing tape.

APPLICATION:

For covering and weather-sealing holes in the floor prior to application of PVC sealer.

SKETCH:



SPECIFICATION NUMBERS:

THICKNESS (MILS) T	WIDTH (INCHES) W	MANUFACTURER'S NUMBER MMM	FREIGHTLINER SPECIFICATION NUMBER *
12	1.5	No. 390	48-02449-150

* Dash Number = Width in 1/100th of an inch.

LTR	RLSE NO.	BY	DATE	REVISION DESCRIPTION

DRAWN BY	KCB	DATE DRAWN		UNIT OF MEASURE	MASTER NO.	
APVD BY	DJL	4/19/84		FT	02220	000D1

FREIGHTLINER CORPORATION

M/F

MATERIAL SPEC

ORIGINAL JOB NO.	TITLE	PART NO.
2853C	UNDERCOAT - PVC	48-02450
LAST CHG LTR: A		SHEET 1 OF 1

SCOPE:

THIS SPECIFICATION IDENTIFIES A SPRAYABLE, HEAT CURING PVC UNDERCOATING MATERIAL.

APPLICATION:

FOR USE AS AN INSULATING AND CORROSION PROTECTIVE COATING OF THE CAB UNDERBODY EXPOSED TO WHEEL WASH.

SPECIFICATION NUMBERS:

MANUFACTURER'S NUMBER		FREIGHTLINER SPECIFICATION
CSC		
SM 712 MDM		48-02450-100

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION
A	7589C	DJL	09-07-84	REVISED & REDRAWN

COMPILED	DJL	DATE DRAWN	CADAM ORIGINAL	UNIT OF MEASURE	MASTER NUMBER	
APPROVED	DJL	09-06-84		GL	07080	000D1

ORIGINAL JOB NO.	TITLE	PART NO.
3087 B	WIRE, ROUND STEEL	48-02451
LAST CHG LTR —		SHEET 1 OF 1

SCOPE: THIS SPECIFICATION DESCRIBES LOW CARBON GALVANIZED STEEL EXTRUDED ROUND WIRE.

APPLICATION: GENERAL USE STRUCTURAL, FUNCTIONAL AND DECORATIVE USES.

SKETCH:



SPECIFICATION NUMBERS

AWG GA (DIA)		F/L SPEC NO
3/8	(.3750)	-038
000	(.3625)	-036
00	(.3310)	-033
1/4	(.2500)	-025
4	(.2253)	-022
5	(.2070)	-021
6	(.1920)	-019
7	(.1770)	-018
8	(.1620)	-016
9	(.1483)	-015
10	(.1350)	-014
11	(.1205)	-012
12	(.1055)	-010
13	(.0915)	-009
14	(.0800)	-008
15	(.0720)	-007
16	(.0625)	-006
17	(.0540)	-005
18	(.0475)	-004

SPECIFICATIONS:

(1) CARBON STEEL WIRE, PER ASTM A641. GALVANIZED PER ASTM A90 TYPE 1, HARD TEMPER.

COMPILED	WTM	DATE DRAWN		MATERIAL	MASTER NUMBER
APPROVED	for	5-15-84		(1)	00001/000D1

CHANGE INFORMATION | LTR | JOB NO. | BY | DATE

CHANGE INFORMATION | JR | JOB NO. | BY | DATE

48-02452

MATERIAL SPECIFICATION

ORIGINAL JOB NO.	TITLE	PART NO.
9215B	LUBRICANT, SPEEDO CABLE	48-02452
LAST CHG LTR		SHEET 1 OF 1

SCOPE: THIS SPECIFICATION IDENTIFIES A SPEEDO CABLE LUBRICANT.

APPLICATION: SPEEDO CABLE.

SPECIFICATION NUMBERS:

MANUFACTURER'S NUMBER		FREIGHTLINER SPECIFICATION NUMBER
FLP		
102206		48-02452-000

CHANGE INFORMATION	DATE	BY	JOB NO.

CHANGE INFORMATION	DATE	BY	JOB NO.

COMPILED	FEF	DATE DRAWN	CADAM ORIGINAL	UNIT OF MEASURE	MASTER NUMBER	
APPROVED		05-22-84		LB	07040	0001

RELEASE NO.	DESCRIPTION	DOCUMENT NO.
2856C	ADHESIVE, CLEAR EPOXY	48-02453
LAST REV LTR		SHEET 1 OF 1

LTR	RLSE NO.	BY	DATE	REVISION DESCRIPTION

LTR	RLSE NO.	BY	DATE	REVISION DESCRIPTION

SCOPE:

This specification identifies a two component clear epoxy adhesive.

APPLICATION:

Used for adhesive bonding wood, glass, ceramic, etc.

SPECIFICATION NUMBERS:

MANUFACTURING NUMBER	FREIGHTLINER SPECIFICATION NUMBER
LOC	
EPOXY 446 ITEM #44681	48-02453-100

DRAWN BY	KCB	DATE DRAWN		Unit of Measure	MASTER NO.	
APVD BY		5/22/84		gm	07070	000D1

M/F

FREIGHTLINER CORPORATION

MATERIAL SPEC

ORIGINAL JOB NO.	TITLE	PART NO.
8285C	FLUID, WINDSHIELD WASHER	48-02458
LAST CHG LTR: A		SHEET 1 OF 1

SCOPE: THIS SPECIFICATION IDENTIFIES A METHANOL-WATER BLEND OF CLEANING AGENT THAT REMAINS LIQUID AT SUB-FREEZING TEMPERATURES.

APPLICATION: WINDSHIELD CLEANING SOLUTION.

SPECIFICATION NUMBERS:

SOURCE	BRAND NAME	UNIT OF MEASURE (1)	FREIGHTLINER SPECIFICATION NUMBER
RECORD CHEMICAL CO., LTD.	RECOCHEM PREMIX	LITER	48-02458-000
PRIESTLY OIL CO.	DUREX PREMIXED	GALLON	48-02458-100

SPECIFICATIONS:

-000	-100
MUST MEET CANADIAN C.G.S.B. SPEC CAN 3-GP-532M FREEZING POINT: -40° F MAX. NONVOLATILE RESIDUE: 280 MG/DL MIN. NITROGEN (% BY WEIGHT): 0.025 MAX. CAN INCLUDE THE FOLLOWING ADDITIVES: MONOETHANOLAMINE PRIMARY ALIPHATIC OXYLATED ALCOHOL BLEND OF ETHOXYLATED AMINES E.D.T.A. REVERSE ETHOXYLATED PROPOXYLATED ETHYLENE GLYCOL MASKING AGENTS. ANTI-FOAM AGENTS.	30 TO 50% BY WEIGHT METHANOL. WATER TO NOT EXCEED 205 PPM HARDNESS.

CHANGE INFORMATION	DATE	BY	JOB NO.
REVISED & REDRAWN	01-08-85	DJL	8285C
ADDED -100	01-08-85	DJL	8285C

CHANGE INFORMATION	DATE	BY	JOB NO.

COMPILED	DJL	DATE DRAWN	CADAM ORIGINAL	UNIT OF MEASURE	MASTER NUMBER	
APPROVED	DJL	01-08-85		(1)	07062	000D1

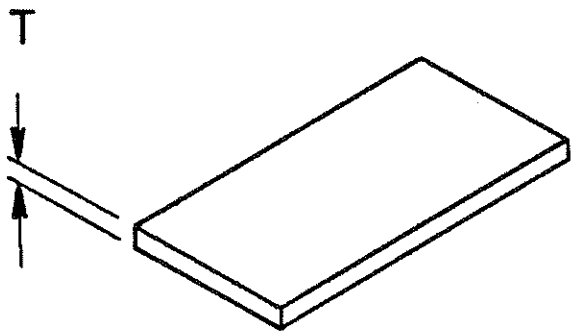
48-02466

ORIGINAL BAR NO.	TITLE	PART NO.
F0438	NYLON PLATE	48-02466
LAST CHG LTR -		SHEET 1 OF 1

SCOPE: THIS SPECIFICATION DESCRIBES NYLON PLATE

APPLICATION: USED FOR FRICTION SURFACES.

SKETCH:



FREIGHTLINER SPECIFICATION NUMBER:

48-02466-*

*COMPLETE PART NUMBER BY ADDING A 3 DIGIT DASH NUMBER INDICATING THICKNESS IN HUNDRETHS OF AN INCH.
EXAMPLE: 48-02466-038 SPECIFIES A PLATE .375 IN. THICK.

08510 -038- 6,5,4

MATERIAL SPECIFICATION:
NEUTRAL PIGMENT NYLON, TYPE 6/6

CHANGE INFORMATION	DATE	BY	JOB NO.
TR			

CHANGE INFORMATION	DATE	BY	JOB NO.

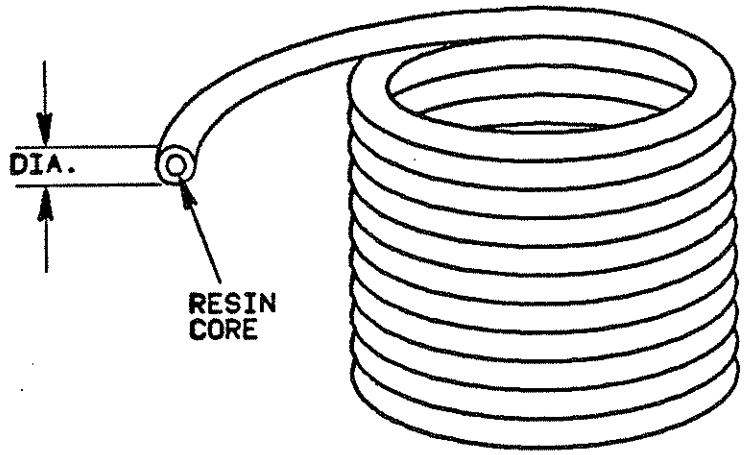
COMPILED	BT	DATE DRAWN	CADAM ORIGINAL	UNIT OF MEASURE	MASTER NUMBER
APPROVED	LAD	04-30-85		SQ FT	00001 000D1

ORIGINAL JOB NO.	TITLE	PART NO.
1867D	SOLDER, ELECTRICAL RESIN CORE	48-02467
LAST CHG LTR: A		SHEET 1 OF 1

SCOPE: THIS SPECIFICATION IDENTIFIES AN ELECTRONIC GRADE TIN/LEAD RESIN CORE SOLDER.

APPLICATION: SOLDERING TERMINALS TO ELECTRICAL WIRING.

SKETCH:



SPECIFICATION NUMBERS:

DIA. (INCHES)	RESIN CORE SIZE	% FLUX BY WT.	MANUFACTURER'S NUMBER		FREIGHTLINER SPECIFICATION NUMBER
			KSR		
.050	#66	3.3	KESTER #44		48-02467-000
.093	#66	3.3	KESTER #44		48-02467-001
.025	#66	3.3	KESTER #44		48-02467-002

NOTE: WHEN ORDERING THE DIAMETER AND CORE SIZE MUST BE INCLUDED WITH THE BASIC SOLDER NUMBER.

SPECIFICATIONS:

1. SOLDER TO BE ELECTRONIC GRADE WITH TIN/LEAD RATIOS OF 60/40 OR 63/37.
2. CORE FLUX SHALL CONSIST OF ACTIVATED PURE GUM WW ROSIN.
3. THE FLUX RESIDUE SHALL BE NON-CORROSIVE, NON-CONDUCTIVE, MOISTURE AND FUNGUS RESISTANT.

4/1

CHANGE INFORMATION				
LTR	JOB NO.	BY	DATE	
A	2485C	BT	10-15-85	ADDED -002

COMPILED	DJL	DATE DRAWN	CADAM ORIGINAL	UNIT OF MEASURE	MASTER NUMBER	
APPROVED	DJL	05-14-85		LB	00001	000D1

MATERIAL SPECIFICATION

ORIGINAL JOB NO.	TITLE	PART NO.
1867D	FLUX, SOLDERING	48-02468
LAST CHG LTR		SHEET 1 OF 1

SCOPE: THIS SPECIFICATION IDENTIFIES A FULLY ACTIVATED EXTERNAL RESIN FLUX.

APPLICATION: TO REMOVE NON-METALLIC OXIDE FILMS FROM THE SURFACE OF METALS AND KEEP IT REMOVED DURING SOLDERING OPERATIONS.

SPECIFICATION NUMBERS:

	MANUFACTURER'S NUMBER		FREIGHTLINER SPECIFICATION NUMBER
	KSR		
	KESTER #1544		48-02468-000

SPECIFICATIONS:

1. ROSIN FLUX TO BE: 49% ISOPROPYL ALCOHOL
   50% PURIFIED GRADE WW ROSIN
2. THE RESIDUE SHALL BE NON-CORROSIVE, NON-CONDUCTIVE, MOISTURE AND FUNGUS RESISTANT.
3. SHALL MEET ALL REQUIREMENTS OF MIL-F-14256 (TYPE RA).

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION

COMPILED	DJL	DATE DRAWN	CADAM ORIGINAL	UNIT OF MEASURE	MASTER NUMBER	
APPROVED	DJL	05-14-85		GAL	00001	00001

PORTLAND FREIGHTLINER CORPORATION 6-23-87 OREGON 97208

EAC-886

48-02469

MATERIAL SPECIFICATION

ORIGINAL JOB NO.	TITLE	PART NO.
1867D	SOLDER, ELECTRICAL BAR OR INGOT	48-02469
LAST CHG LTR		SHEET 1 OF 1

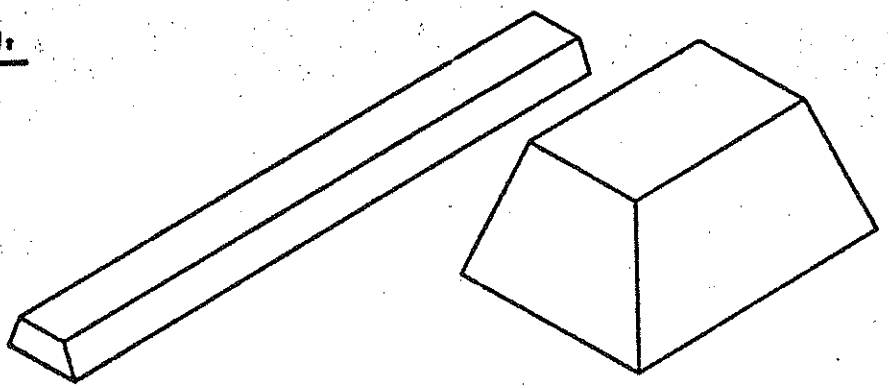
CHANGE INFORMATION

LTR	JOB NO.	BY	DATE

SCOPE: THIS SPECIFICATION IDENTIFIES AN ELECTRONIC GRADE TIN/LEAD SOLDER.

APPLICATION: SOLDERING TERMINALS TO ELECTRICAL WIRING.

SKETCH:



BAR INGOT

SPECIFICATION NUMBERS:

	MANUFACTURER'S NUMBER		FREIGHTLINER SPECIFICATION NUMBER
			48-02469-000

6,5,4

CHANGE INFORMATION

LTR	JOB NO.	BY	DATE

SPECIFICATIONS:

1. SOLDER TO MEET ASTM B32 ALLOY GRADE 63A OR 60A (TIN/LEAD RATIOS OF 63/37 OR 60/40 RESPECTIVELY).
2. CAN BE PROVIDED IN EITHER BAR OR INGOT FORM.

OD000

COMPILED	DJL	DATE DRAWN	CADAM ORIGINAL	UNIT OF MEASURE	MASTER NUMBER	
APPROVED	DJL	05-15-85		LB	00001	00001

PORTLAND FREIGHTLINER CORPORATION OREGON 97208

EAG-886

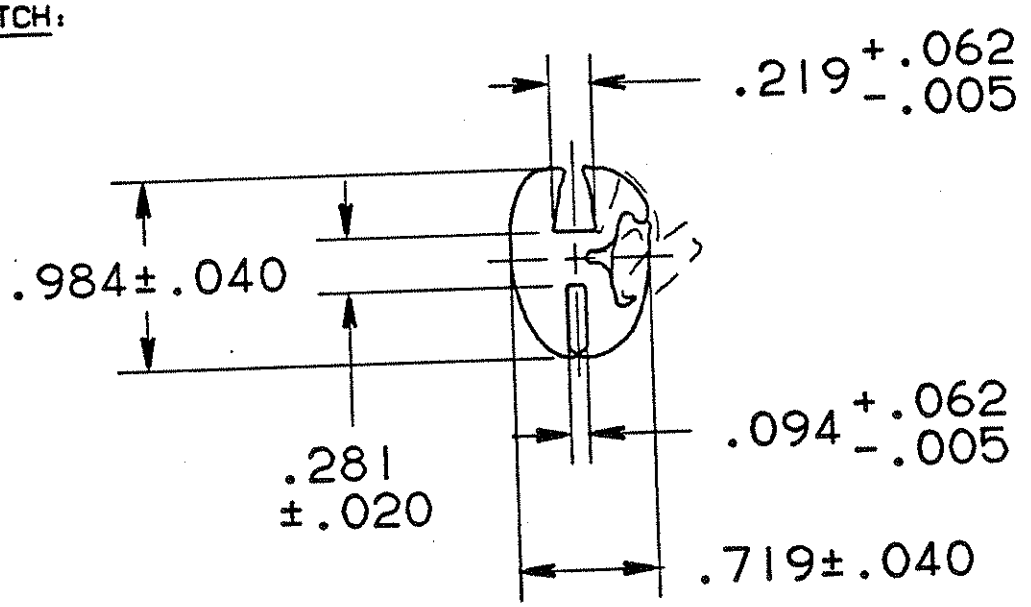
11/13/86

Z0128	EXTRUSION, RUBBER	48-02470	
LAST CHG LTR: A		SHEET 1 OF 1	

SCOPE: THIS SPECIFICATION IDENTIFIES A RUBBER EXTRUSION

APPLICATION: REAR AND SIDE CAB WINDOWS

SKETCH:



	EXTRUSION DIE NO.	MATERIAL	WEIGHT	FREIGHTLINER SPECIFICATION NUMBER
	(IRG) I02-352	(1)		48-02470-000

SPECIFICATIONS:

(1) SBR BLACK RUBBER, 70 DUROMETOR EPDM.

2. FINISH: AS EXTRUDED

LTR	JOB NO.	BY	DATE	
A	Z0128	RDS	10-28-85	REVISED & REDRAWN

COMPILED	RDS	DATE DRAWN	CADAM ORIGINAL	MATERIAL	MASTER NUMBER
APPROVED	BAM	05-17-85		(1)	00000 00001

48-02471

CHANGE INFORMATION				
LTR	JOB NO.	BY	DATE	

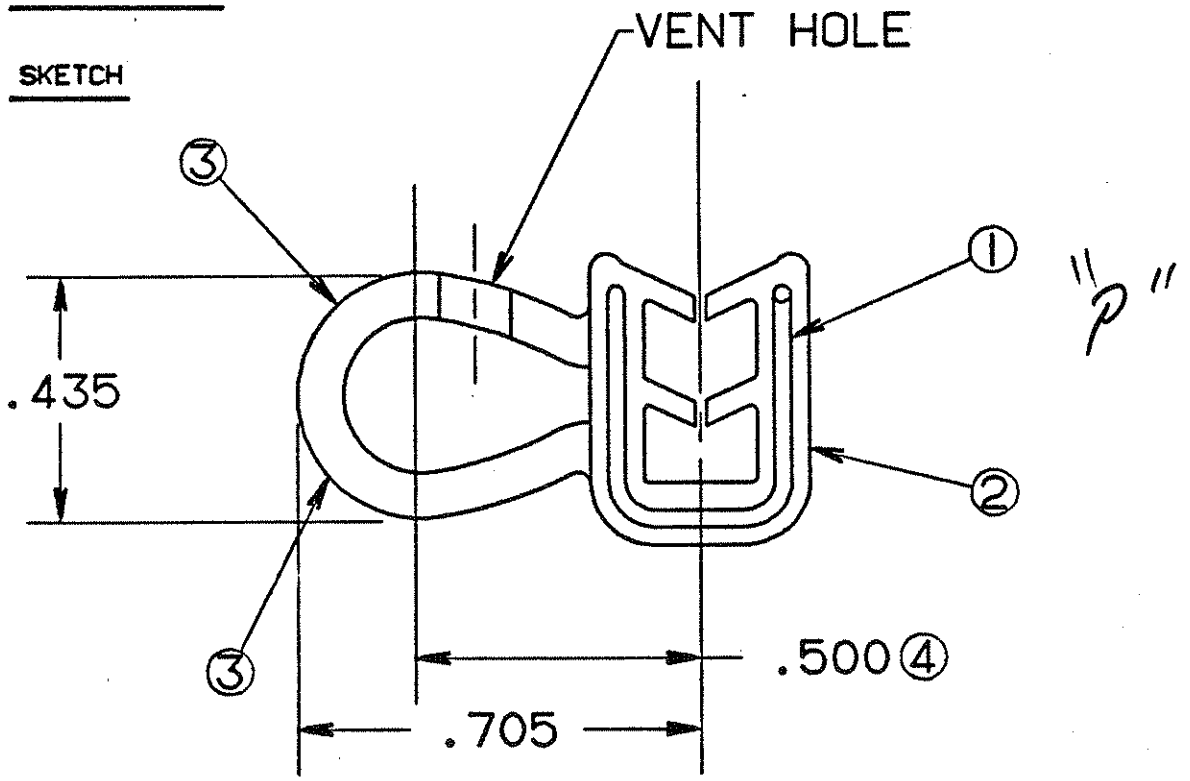
CHANGE INFORMATION				
LTR	JOB NO.	BY	DATE	

ORIGINAL JOB NO.	TITLE	PART NO.
K0237	SEAL, FLANGE MOUNTED	48-02471
LAST CHG LTR: A		SHEET 1 OF 1

SCOPE: THIS SPECIFICATION DESCRIBES A FLANGE MOUNTED SEAL.

APPLICATION: COE & CONV CAB DOOR.

SKETCH



SPECIFICATION

UNIT OF MEASURE = FT

VENT HOLES		APPROVED VENDORS		FREIGHTLINER SPECIFICATION NUMBER
A DIA	CENTERS	SCG		
.125 ±.020	6.000 ±1.000	1426		48-02471-000

SPECIFICATIONS

4, 5, 6, 7, 9

MATERIAL:

(1) WIRE CARRIER; .030 DIA
(2) DENSE EPDM RUBBER
(3) EXPENDED EPDM RUBBER
(4) DESIGN COMPRESSION LINE

COMPILED	WTM	DATE DRAWN	CADAM ORIGINAL	MATERIAL	MASTER NUMBER	
APPROVED	CAJ	7-18-85		(1) (2) (3)	65308	00001

48-0247

ORIGINAL JOB NO.	TITLE	PART NO.
3802D	ETHYLENE VINYL ACETATE FOAM SINGLE FACE ADHESIVE	48-02479
LAST CHG LTR: D		SHEET 1 OF 1

(B) (C)

SCOPE: THIS SPECIFICATION IDENTIFIES ETHYLENE VINYL ACETATE 3 LB/CU FT SOFT, DENSITY PRESSURE SENSITIVE HIGH TACK ADHESIVE ON ONE SIDE WITH LINER.

APPLICATION: MOISTURE AND AIR SEALANT FOR OVERLAPPING SURFACES, GASKETS INSULATION.

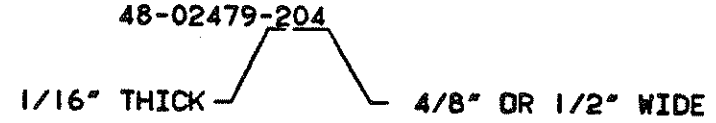
SPECIFICATION NUMBERS:

THICKNESS (INCHES)	WIDTH (INCHES) 9XX SERIES ONLY	MANUFACTURER'S NUMBERS		FREIGHTLINER SPECIFICATION NUMBER
		BOD		
1/32	—	—		48-02479-1XX
1/16	—	—		-2XX
3/32	—	—		-3XX
1/8	—	—		-4XX
3/16	—	EVA 10307	(A)	-5XX
1/4	—	—		-6XX
3/8	—	EVA 10307	(A)	-7XX
1/2	—	—		-8XX
3/8	32.5	EVA 10307		-900
3/8	18.5	EVA 10307		-901

NOTE:

FOR 1XX THRU 8XX SERIES THE LAST TWO DIGITS INDICATE WIDTH IN 1/8" INCREMENTS. FOR 9XX SERIES WIDTH IS AS INDICATED ABOVE. STANDARD ROLL SIZES ARE AVAILABLE

EXAMPLE:



SPECIFICATIONS:

DENSITY (LB/CU FT) ASTM D 1667:	3
ELONGATION (% AT POINT OF BREAK)	200
(A) ACID, ALKALI, AND OXIDATION RESISTANCE:	EXCELLENT
SERVICE TEMPERATURES: -15°F TO 160°F (INTERMITTENT UP TO 400°F)	
COMPRESSION-DEFLECTION (25% DEF) (PSI) ASTM D 1667	2-5
ULTIMATE STRENGTH (PSI)	80
K FACTOR (THERMAL CONDUCTIVITY) $\frac{(BTU)(IN)}{(SQ\ FT)(HR)(°F)}$ = (ASTM C-518)	.27

COLOR: OPTIONAL; GRAY PREFERED. (D)

THIS MATERIAL MUST PASS FMVSS NO. 302, FLAMMABILITY OF INTERIOR MATERIALS.

(A) PSA (PRESSURE SENSITIVE ADHESIVE) BOD 02-256M

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION
C	7048D	BT	04-30-86	REVISED SCOPE
D	1764E	RDS	03-03-87	REVISED COLOR NOTE

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION
A1	5067D	RJN	01-02-86	ADDED EVA 10307 2 PL
A2	5067D	RJN	01-02-86	REVISED SERVICE TEMPS
A3	5067D	RJN	01-08-86	ADDED PSA SPEC
B	5067D	RJN	03-11-86	REVISED SCOPE

COMPILED	RJN	DATE DRAWN	CADAM ORIGINAL	UNIT OF MEASURE	
APPROVED	KRH	12-16-85		FT	

AC-826

PORTLAND FREIGHTLINER CORPORATION OREGON 97208

6/22/87

48-02483

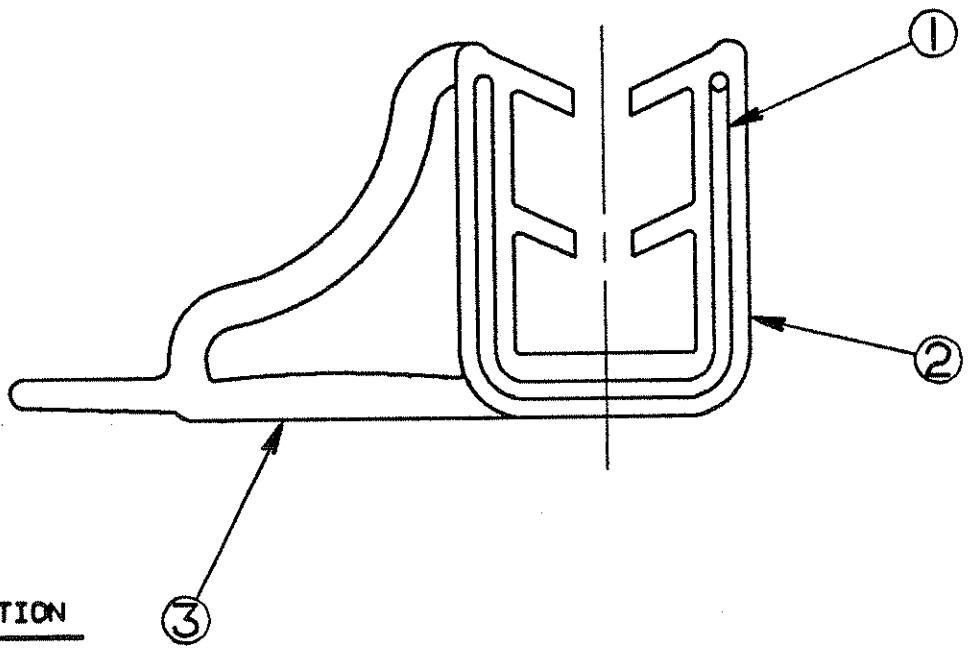
CHANGE INFORMATION				
LTR	JOB NO.	BY	DATE	

ORIGINAL JOB NO.	TITLE	PART NO.
K0267	SEAL, FLANGE MOUNTED	48-02483
LAST CHG LTR		SHEET 1 OF 1

SCOPE: THIS SPECIFICATION DESCRIBES A FLANGE MOUNTED SEAL.

APPLICATION: CONV SLEEPER BOX BAGGAGE DOOR

SKETCH



SPECIFICATION

VENT HOLES		APPROVED VENDORS		FREIGHTLINER SPECIFICATION NUMBER
A DIA	CENTERS	SCG		
NONE	———	1357		48-02483-000 *

INSERTION / EXTRACTION (4" SAMPLE)

FLANGE THICKNESS	.060	.140
MAX INSERTION	7.0#	--
MIN EXTRACTION	11.0#	11.0#

6.7

UNIT OF MEASURE = FT

SPECIFICATIONS

MATERIAL:

(1) WIRE CARRIER; .030 DIA
(2) DENSE EPDM RUBBER
(3) EXPENDED EPDM RUBBER

COMPILED	CAJ	DATE DRAWN	CADAM ORIGINAL	MATERIAL	MASTER NUMBER
APPROVED	CAJ	1-31-86		(1) (2) (3)	65308 000D1

ADRIENNE CHILBERG

DRAWN	KCB	TITLE	DRAWING NUMBER	
APPRV	TJW	SHEET-POLYETHYLENE LOW DENSITY	48-02484	
DATE	05/01/86	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1	CHG. LTR. A
CATIA ORIGINAL				
UNLESS OTHERWISE NOTED, DIMENSIONS ARE IN INCHES				

SCOPE: THIS SPECIFICATION IDENTIFIES A LOW DENSITY POLYETHYLENE SHEET.

APPLICATION: FOR USE AS VAPOR BARRIER OR PROTECTIVE SHIELD FOR INTERIOR PANELS.

T THICKNESS INCHES NOM.	COLOR	FREIGHTLINER PART NUMBER
3/16	BLACK	48-02484-000
.006	CLEAR	48-02484-001

ENGINEERING NOTES:

1. MATERIAL: LOW DENSITY POLYETHYLENE SHEET. PER ASTM D1248 TYPE 1, CLASS B, CATEGORY 3

CHG	JOB NO	DATE	BY	REVISION
A	P00207-01	06/04/97	DAJ	REVISED AND REDRAWN IN CATIA, ADDED -001.

MATERIAL SPEC

48-02486

ORIGINAL JOB NO.	TITLE	PART NO.
5176C	TUBING, VINYL CLEAR FLEXIBLE	48-02486
LAST CHG LTR: B		SHEET 1 OF 1

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION
B1	5176C	DJL	10-18-84	REVISED & REDRAWN
B2	5176C	DJL	10-18-84	-012 WALL .12 TO .09

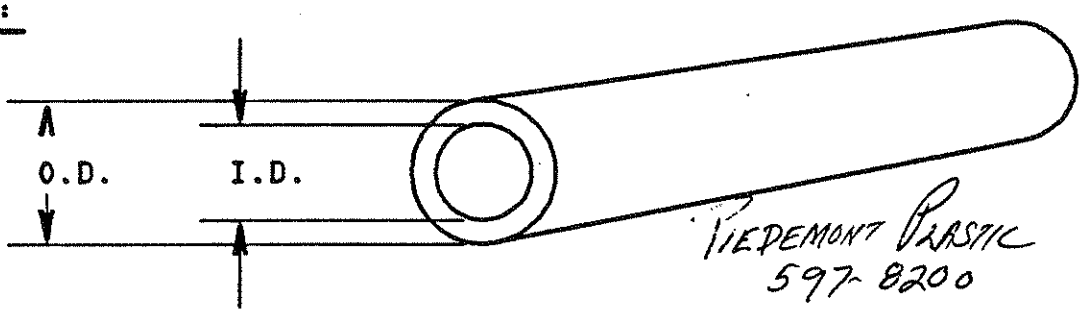
SCOPE:

THIS SPECIFICATION DESCRIBES A SOFT FLEXIBLE CLEAR VINYL TUBING.

APPLICATION:

FOR PARTS REQUIRING PLASTIC TUBING WITH SMALL RADIUS BEND CAPABILITY.

SKETCH:



PIEDEMONT PLASTIC
597-8200
ANDY CASSIDY
11/20/84

SPECIFICATION NUMBERS:

NOMINAL I.D. (INCH)	NOMINAL O.D. (INCH)	WALL THICK. (INCH)		FREIGHTLINER SPECIFICATION NUMBER
.25 .25	.38 .50	.06 .12		48-02486-001 48-02486-002
.31 .31	.44 .50	.06 .09	78 ℄	48-02486-011 48-02486-012
.38 .38	.50 .62	.06 .12		48-02486-003 48-02486-004
.44	.56	.06	78 ℄	48-02486-005
.50 .50	.62 .75	.06 .12	8	48-02486-006 48-02486-007
.62 .75	.88 1.00	.12 .12	78 ℄	48-02486-008 48-02486-009
1.00	1.25	.12	8	48-02486-010

SPECIFICATIONS:

1. MATERIAL: VINYL
2. COLOR: CLEAR

COMPILED	DJL	DATE DRAWN	CADAM ORIGINAL	UNIT OF MEASURE	MASTER NUMBER	
APPROVED	DJL	10-18-84		FT	05170	000D1

PORTLAND FREIGHTLINER CORPORATION OREGON 97208

EAC-826

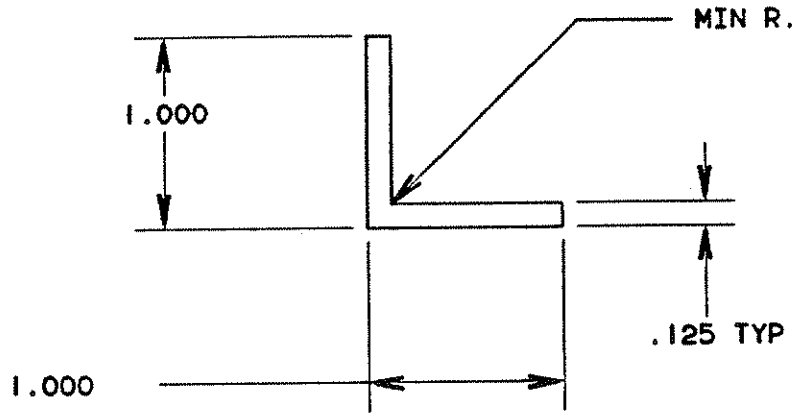
MATERIALS SPECIFICATION

ORIGINAL JOB NO.	TITLE	PART NO.
6978D	EXTRUSION, ANGLE PLASTIC	48-02487
LAST CHG LTR: -		SHEET 1 OF 1

SCOPE: THIS SPECIFICATION IDENTIFIES AN EXTRUDED PLASTIC ANGLE.

APPLICATION: CB AND RADIO POWER STUD ISOLATOR

SKETCH:



SPECIFICATION NUMBERS

MATERIAL	COLOR	FINISH	VENDOR REF.	F/L SPECIFICATION NO.
PLASTIC	BLACK	AS EXTRUDED	PORTLAND PLASTICS CO., PTD OR.	48-02487-000

SPECIFICATIONS:

1. FLAMMABILITY: MUST PASS MINIMUM REQUIREMENTS OF FMVSS #302

2. TEMPERATURE: MUST WITHSTAND A CONTINUOUS SERVICE TEMP OF 200 DEG F.

COMPILED	DDM	DATE DRAWN	CADAM ORIGINAL	UNIT OF MEASURE	MASTER NUMBER	
APPROVED	DJL	04-09-86		FT	00001	000D1

PORTLAND FREIGHTLINER CORPORATION 8/19/96 OREGON 97208

CHANGE INFORMATION | LTR | JOB NO. | BY | DATE

DRAWN	ERK	TITLE	ITEM NUMBER
APPRV	KCB	FOAM - URETHANE 1.0 PCF, OPEN CELL	48-02488
DATE	08/14/90	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1

SCOPE: THIS SPECIFICATION IDENTIFIES 1.0 PCF PREDOMINATELY OPEN CELL FLEXIBLE POLYETHER URETHANE FOAM MATERIAL.

APPLICATION: GENERAL CAB INSULATION.

SPECIFICATION NUMBERS:

THICKNESS			FREIGHTLINER SPECIFICATION NUMBER
.500			48-02488-050
.625			-062
1.000			-100

TYPICAL PROPERTIES:

1. MATERIAL TO CONFORM WITH APPLICABLE PROVISIONS OF ASTM D1564:

DENSITY	PCF	1.0
COMPRESSION SET @ 90% DEFLECTION	PSI	10% MAX
MINIMUM TENSILE STRENGTH	PSI	10
ELONGATION	% MIN	120
TEAR RESISTANCE	LB/IN./MIN.	1.0
COLOR		GRAY/CHARCOAL-BLACK

2. MUST MEET APPLICABLE PROVISIONS OF FMVSS #302, FLAMABILITY OF INTERIOR MATERIALS.

CHG	JOB/RLSE NO	DATE	BY	REVISION
B	PA2024-39	08/14/90	ERK	REVISED AND REDRAWN; REMOVED VENDOR REFERENCE

ADRIENNE CHILBERG

DRAWN	ERK	TITLE	DRAWING NUMBER
APPRV	KCB	CABLE-LOW TENSION, GXL THERMOSET INSULATION	48-02493
DATE	07/30/90	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 3 / CHG. LTR. G
CATIA ORIGINAL			

SCOPE: THIS SPECIFICATION IDENTIFIES A CHEMICALLY CROSSLINKED POLYETHYLENE INSULATED CABLE FOR USE IN LOW TENSION APPLICATIONS.

APPLICATION: AUTOMOTIVE ELECTRICAL WIRING, EXCEPT THE ENGINE STARTER POWER CIRCUIT, AND BATTERY INTERCONNECTION AND GROUNDING.

	WIRE SIZE		COLOR* ⚠1	STRANDS			MIN CONDCT AREA (MM^2)	NOM OD OF CONDCT (MM)	MIN WALL INSUL (MM)	OD MAX (MM)	FREIGHTLINER SPECIFICATION NUMBER
	MM^2	REPLCS		NO	NOM SIZE AWG	NOM SIZE MM					
	8.0	8 GA	**	19	21	0.71	7.23	3.50	0.66	5.80	48-02493-08X
	5.0	10 GA		19	23	0.57	4.65	2.81	0.55	4.67	-10X
	3.0	12 GA		19	25	0.45	2.91	2.23	0.46	3.81	-12X
	2.0	14 GA		19	27	0.36	1.85	1.78	0.41	3.18	-14X
	1.0	16 GA		19	29	0.28	1.12	1.38	0.41	2.84	-16X
	0.8	18 GA		16	30	0.26	0.76	1.18	0.41	2.50	-18X
E	0.5	20 GA		7	-	0.31	-	-	0.41	2.18	-20X

ENGINEERING NOTES:

* YELLOW IS FREIGHTLINER'S STANDARD COLOR FOR GXL CABLE. NON-STANDARD CABLE SPECIFICATIONS ARE FOR SPECIAL APPLICATIONS ONLY, AND REQUIRES ELECTRICAL ENGINEERING APPROVAL.

** FINAL DIGIT OF MATERIAL SPECIFICATION DASH NUMBER "X" INDICATES THE COLOR OF THE INSULATION AS FOLLOWS:
BLACK 0 BROWN 1 RED 2 ORANGE 3 YELLOW 4 DK GRN 5
LT BLUE 6 PINK 7 GREY 8 WHITE 9
EXAMPLE; 48-02493-104 SPECIFIES A 10 GA YELLOW CONDUCTOR.

F ⚠1 FOR ADDITIONAL COLORS:
USE 48-25244 TO SPECIFY THE FOLLOWING ADDITIONAL SOLID COLORS:
DK BLUE 0 LT GRN 1 PURPLE 2 TAN 3
EXAMPLE; 48-25244-202 SPECIFIES A 20 GA PURPLE CONDUCTOR.

G USE 48-25258 TO SPECIFY THE FOLLOWING COLOR WITH WHITE STRIPE:
BLACK 0 LT GRN 1 RED 2 TAN 3 PURPLE 4 DK GRN 5
LT BLUE 6 PINK 7
EXAMPLE; 48-25258-167 SPECIFIES A 16 GA PINK WITH WHITE STRIPE CONDUCTOR.

CHG	JOB NO	DATE	BY	REVISION
E	871561-01	03/21/97	DAJ	REVISED AND REDRAWN ON CATIA, ADDED 48-02493-20X
F	P02530-01	04/03/97	DAJ	ADDED 48-25244 TO ALLOW FOR ADDITIONAL COLORS
G	PA2042-79	06/05/97	DAJ	ADDED 48-25258 TO ALLOW FOR STRIPPED INSULATORS

ADRIENNE CHILBERG

DRAWN	ERK	TITLE	DRAWING NUMBER	
APPRV	KCB	CABLE-LOW TENSION, GXL THERMOSET INSULATION	48-02493	
DATE	07/30/90	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 2 OF 3	CHG. LTR. G
CATIA ORIGINAL				

SPECIFICATIONS:

1. CABLE MUST CONFORM TO ALL APPLICABLE PROVISIONS OF SAE J1128, TYPE GXL GENERAL PURPOSE, CROSSLINKED POLYETHYLENE, INSULATED EXCEPT THE FOLLOWING:

   OIL ABSORPTION - USE ASTM OIL #2.
   - 10% MAXIMUM CABLE DIAMETER INCREASE.

   HEAT AGE TEST - TEMPERATURE 165°C.

2. CONDUCTORS: THE CONDUCTORS SHALL BE BARE, ANNEALED, COPPER WIRE. BUNCHED STRANDED IN ACCORDANCE WITH SAE J1128. NO SPLICING OF STRANDED CONDUCTOR AS A WHOLE IS PERMITTED. HOWEVER, THERE MAY BE SPLICES IN THE INDIVIDUAL STRANDS PROVIDED THE BUNDLE SIZE IS NOT ALTERED.

3. PROPERTIES:

   3.1 PROPERTIES OF THE CONDUCTOR

   3.1.1 THE CONDUCTORS SHALL MEET ALL REQUIREMENTS OF SAE J1128 WITH WIRE SIZE AND STRANDING.

   3.1.2 BEFORE STRANDING-THE WIRE MUST MEET ALL REQUIREMENTS OF ASTM B 3 FOR TENSILE STRENGTH, ELONGATION, RESISTIVITY, DIMENSION AND FINISH.

   3.2 PROPERTIES OF THE INSULATION

   3.2.1 PHYSICAL PROPERTIES OF THE INSULATION AS REMOVED FROM THE CABLE.

3.2.1.1 TENSILE STRENGTH	TEST METHOD	VALUE
ORIGINAL MPA (psi)	ASTM D412	10.34 (1500) MIN
HEAT AGE(% OF ORIGINAL TESTED VALUE)		80 MIN

   3.2.2 TESTING

   3.2.2.1 TENSILE STRENGTH AND ELONGATION TESTS WILL BE CONDUCTED WITH A CROSS-HEAD SPEED OF 500mm (20") PER MINUTE.

   3.2.2.2 ALL TENSILE AND ELONGATION TEST SAMPLES WILL BE CONDITIONED AT 23°C FOR AT LEAST 16 HOURS PRIOR TO TESTING.

   3.2.2.3 HEAT AGING CONSISTS OF CONDITIONING TEST SPECIMENS IN AN OVEN FOR 7 DAYS (168 HRS) AT 165°C (CORE REMOVED).

   3.3 CABLE PERFORMANCE REQUIREMENTS

   THE FINISHED CABLE SHALL MEET THE PREFORMANCE REQUIREMENTS OF SAE J1128, TYPE GXL.

CHG	JOB NO	DATE	BY	REVISION
E	871561-01	03/21/97	DAJ	REVISED AND REDRAWN IN CATIA, ADDED -20X
F	P02530-01	04/03/97	DAJ	ADDED 48-25244 TO ALLOW FOR ADDITIONAL COLORS
G	PA2042-79	06/05/97	DAJ	ADDED 48-25258 FOR STRIPPED COLORS, SEE SHEET 1

ADRIENNE CHILBERG

3.4 NO SEPARATORS ARE PERMITTED.

3.5 STRIP FORCE

WIRE SIZE (MM^2)	STRIP FORCE (NEWTONS) MIN	MAX
0.8	20	75
1.0	20	85
2.0	20	95
3.0	20	105
5.0	20	120
8.0	20	135

3.6 SOLDERABILITY

THE CORE OF THE FINISHED CABLE MUST REMAIN FREE OF CONTAMINANTS AND OXIDATION FOR SOLDERABILITY REASONS. THE FOLLOWING TEST WILL BE USED TO EVALUATE SOLDERABILITY OF THE XLPE CABLE:

CABLE STRIPPED APPROXIMATELY 25MM (1 IN) WILL BE IMMERSED 12MM (1/2 IN) INTO AN ACTIVATED ROSIN FLUX (ALPHA METALS #711 OR EQUIVALENT) FOR 3 SECONDS AND THEN IMMERSED FOR 2 SECONDS IN MOLTEN SOLDER 260°C ±5°C (500°F ±10°F). AN ACCEPTABLE SOLDERABILITY TEST SPECIMEN WILL EXHIBIT EVIDENCE OF SOLDER WETTING AND COMPLETE SAMPLE COVERAGE FOR THE IMMERSED LENGTH.

3.7 DIMENSIONS

VARIATIONS IN INSULATION ALL THICKNESS ARE PERMISSIBLE IF DUE TO ECCENTRICITY. HOWEVER, THE MINIMUM WALL THICKNESS AT ANY CROSS-SECTION OF A TEST SPECIMEN SHALL NOT BE LESS THAN THE MINIMUM THICKNESS OF THE INSULATION SPECIFIED. THE MINIMUM WALL THICKNESS SHALL BE MEASURED WITH AN OPTICAL COMPARATOR.

CHG	JOB NO	DATE	BY	REVISION
E	871561-01	03/21/97	DAJ	REVISED AND REDRAWN IN CATIA, ADDED -20X.
F	P02530-01	04/03/97	DAJ	ADDED 48-25244 TO ALLOW FOR ADDITIONAL COLORS
G	PA2042-79	06/05/97	DAJ	ADDED 48-25258 FOR SPRIPPED COLORS, SEE SHEET 1

MATL SPEC

48-02454

ORIGINAL JOB NO.	TITLE	PART NO.
K0183	TAPE, URETHANE FOAM SINGLE FACE ADHESIVE	48-02454
LAST CHG LTR		SHEET 1 OF 1

CHANGE INFORMATION	DATE	BY	JOB NO.	LTR

SCOPE: THIS SPECIFICATION IDENTIFIES 35 LB/CU FT DENSITY PRESSURE SENSITIVE CLOSED-CELL POLYURETHANE FOAM TAPE; PRESSURE-SENSITIVE ADHESIVE ONE SIDE, WITH LINER; SMOOTH NON-CLING COATING ON TOP SURFACE.

APPLICATION: MOISTURE AND AIR SEALANT FOR OVERLAPPING SURFACES, COMPATIBLE WITH E-COAT.

SPECIFICATION NUMBERS:

THICKNESS (INCHES)	MANUFACTURER'S NUMBERS			FREIGHTLINER SPECIFICATION NUMBER
	NPT			
1/32				48-02454-1XX
1/16	V4062			-2XX
3/32	—			-3XX
1/8	—			-4XX
3/16	—			-5XX
1/4	—			-6XX
3/8	—			-7XX
1/2	—			-8XX

THE LAST DIGITS INDICATE WIDTH IN 1/8" INCREMENTS. STANDARD ROLL SIZES ARE AVAILABLE IN WIDTHS 1/4" TO 56".

EXAMPLE: 48-02454-204

1/16" THICK — 4/8" OR 1/2" WIDE

SPECIFICATIONS:

DENSITY (LB/CU FT) ASTM D 1667:		35
SHORE 00 HARDNESS ASTM D 2240:		24
ELONGATION (% AT POINT OF BREAK) ASTM D 412 DIE C:		250
OXIDATION RESISTANCE:		EXCELLENT
SERVICE TEMPERATURES:	A) MINIMUM	-30° F
	B) MAXIMUM	+200° F
	(INTERMITTENTLY UP TO 400° F AS WITH E COAT)	

COLOR: BLACK

CHANGE INFORMATION	DATE	BY	JOB NO.	LTR

					MASTER NUMBER	
COMPILED	CAJ	DATE DRAWN	CADAM ORIGINAL		02220	000D1
APPROVED	BEL	5-24-84				

PORTLAND FREIGHTLINER CORPORATION M/F OREGON 97208

EAC-826

MATL SPEC

48-02456

ORIGINAL JOB NO.	TITLE	PART NO.
K0183	TAPE, PVC FOAM SINGLE FACE ADHESIVE	48-02456
LAST CHG LTR A		SHEET 1 OF 1

CHANGE INFORMATION	DATE	BY	JOB NO.	LTR

CHANGE INFORMATION	DATE	BY	JOB NO.	LTR
ADDED -900 & -901	07-11-84	CAJ	K0183	A

SCOPE: THIS SPECIFICATION IDENTIFIES 10 LB/CU FT DENSITY PRESSURE SENSITIVE CLOSED-CELL PVC FOAM TAPE; PRESSURE-SENSITIVE ADHESIVE ONE SIDE, WITH LINER; SMOOTH NON-CLING COATING ON TOP SURFACE.

APPLICATION: MOISTURE AND AIR SEALANT FOR OVERLAPPING SURFACES, GASKETS INSULATION.

SPECIFICATION NUMBERS:

THICKNESS (INCHES)	WIDTH (INCHES) 9XX SERIES ONLY	MANUFACTURER'S NUMBERS		FREIGHTLINER SPECIFICATION NUMBER
		NPT		
1/32	—	—		48-02456-1XX
1/16	—	—		-2XX
3/32	—	—		-3XX
1/8	—	—		-4XX
3/16	—	V546		-5XX
1/4	—	—		-6XX
3/8	—	V5412		-7XX
1/2	—	—		-8XX
3/8	32.5	V5412		-900
3/8	18.5	V5412		-901

FOR 1XX THUR 2XX SERIES THE LAST TWO DIGITS INDICATE WIDTH IN 1/8" INCREMENTS. FOR 9XX SERIES WIDTH IS AS INDICATED ABOVE. STANDARD ROLL SIZES ARE AVAILABLE IN WIDTHS 1/4" TO 56".

EXAMPLE: 48-02456-204

1/16" THICK — 4/8" OR 1/2" WIDE

SPECIFICATIONS:

DENSITY (LB/CU FT) ASTM D 1667:		10
SHORE 00 HARDNESS ASTM D 2240:		25
ELONGATION (% AT POINT OF BREAK) ASTM D 412 DIE A:		225
OXIDATION RESISTANCE:		EXCELLENT
SERVICE TEMPERATURES:	A) MINIMUM	-15° F
	B) MAXIMUM	+160° F
	(INTERMITTENT UP TO 400° F AS WITH E COAT)	

FORCE TO COMPRESS (ASTM D 1667)

COMPRESSED 30% OF ORIGINAL HEIGHT: 3.5 PSI

COMPRESSION DEFLECTION (ASTM D 1667)

COMPRESSED 30% OF ORIGINAL HEIGHT: 2.5 PSI

K FACTOR (THERMAL CONDUCTIVITY) (ASTM C-518) $\frac{(BTU)(IN)}{(SQ\ FT)(HR)(°F)}$ = .28

COLOR: BLACK

COMPILED	CAJ	DATE DRAWN	CADAM ORIGINAL	UNIT OF MEASURE	MASTER NUMBER	
APPROVED	BEL	5-24-84		FT	02220	000D1

ORIGINAL JOB NO.	TITLE	PART NO.
C1500D	TUBING, VINYL	48-02486
LAST CHG LTR		SHEET 1 OF 1

CHANGE INFORMATION | DATE | BY | JOB NO. | LTR

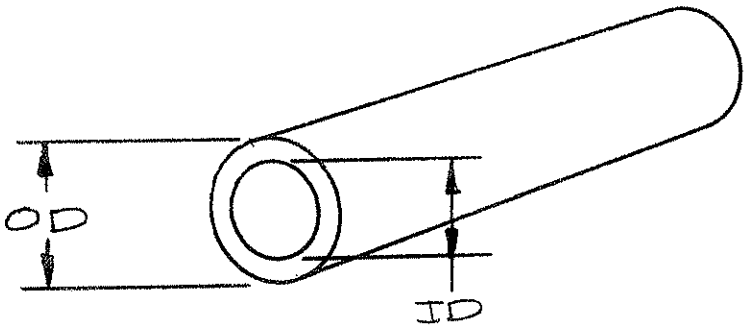
SCOPE

This specification describes a soft flexible clear vinyl tubing.

APPLICATION

For parts requiring plastic tubing with small radius bend capability.

SKETCH



SPECIFICATION NUMBERS

Nominal ID (inch)	Nominal OD	Wall THK		Freightliner Specification Number
.25	.38	.06		48-2486-001
.25	.50	.12		-002
.38	.50	.06		-003
.38	.62	.12		-004
.44	.56	.06		-005
.50	.62	.06		-006
.50	.75	.12		-007
.62	.88	.12		-008
.75	1.00	.12		-009
1.00	1.25	.12		-010

CHANGE INFORMATION | DATE | BY | JOB NO. | LTR

SPECIFICATIONS

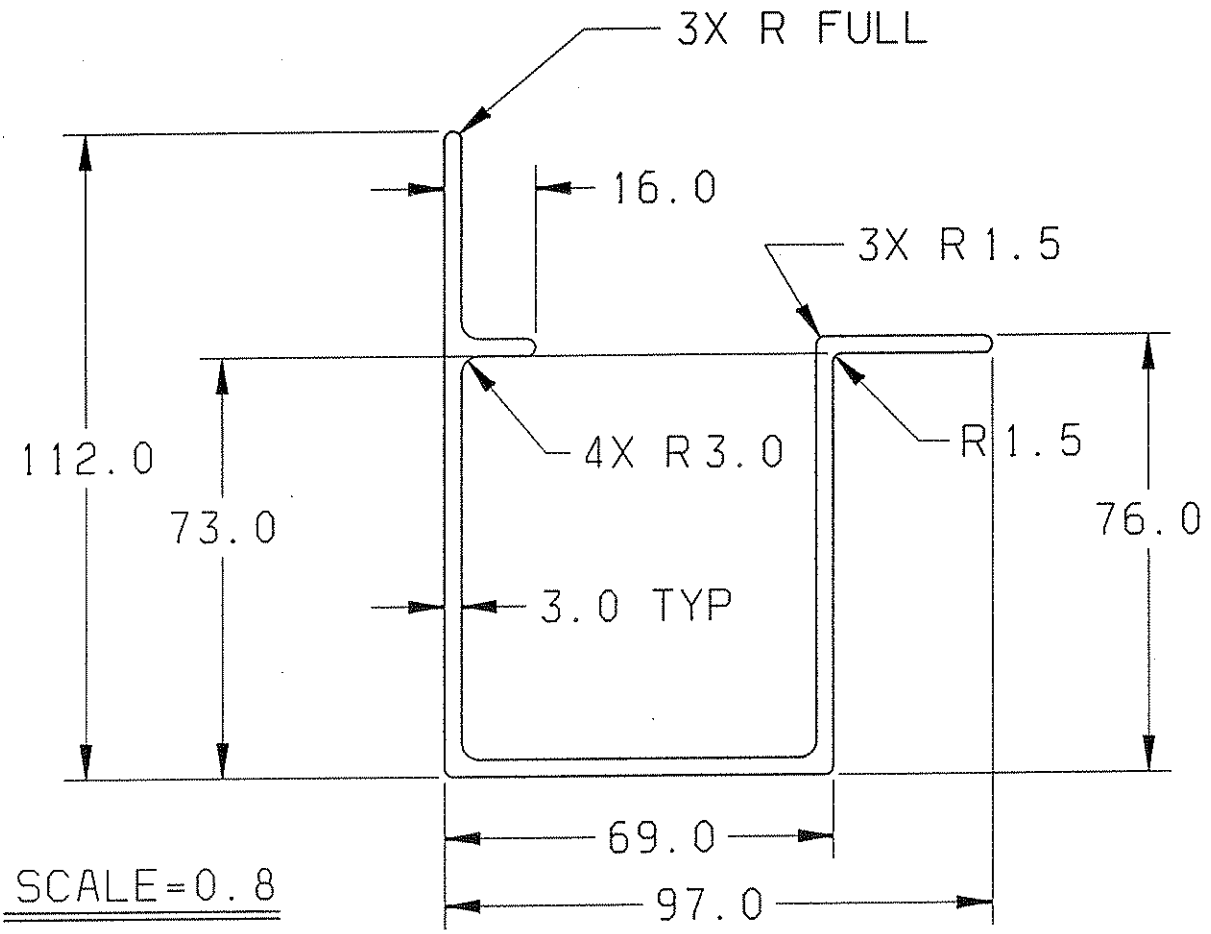
1. Material: Vinyl
2. Color: Clear

COMPILED	RNS	DATE DRAWN			
APPROVED	BEL	5-27-81			

Portland **FREIGHTLINER CORPORATION** M/F Oregon 97208

ADRIENNE CHILBERG

DRAWN	GPC	TITLE: EXTRUSION TUNNEL-LONGITUDINAL	DRAWING NUMBER 48-03217	
APPRV	HFW			
DATE	07/13/96	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1	CHG. LTR. A
CATIA ORIGINAL				



MATERIAL	AREA SQ.MM.	WEIGHT LB/MM.	F/L SPEC NO.
6005-T6 ALUMINIUM	876.965	.00517	48-03096-000

SPECIFICATIONS:

1. FINISH: AS EXTRUDED
2. F/L CAN SUPPLY OPTICAL TRACING TEMPLATES TO ANY DESIRED SCALE.
3. TOLERANCES OTHER THAN NOTED PER ALUMINUM ASSOC. STANDARDS AND ANSI H35.2.

CHG	JOB NO	DATE	BY	REVISION
-	P2D000	09/27/96	GPC	INITIAL RELEASE
A	P2D220-87	12/19/97	GPC	PRODUCTION RELEASE. 4X R3.0 WAS 2X R3.0

DRAWN	DAJ	TITLE	DRAWING NUMBER	
APPRV	DAJ	TAPE-ALUMINUM FOIL PSA	48-03221	
DATE	12/08/98	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1	CHG. LTR. -
CATIA ORIGINAL				

SCOPE: THIS SPECIFICATION IDENTIFIES A FOIL TAPE, COATED ON ONE SIDE WITH AN AGGRESSIVE ACRYLIC BASED ADHESIVE PROTECTED BY A KRAFT RELEASE LINER.

APPLICATION: FOR USE IN TRUCK BODY, RECREATIONAL VEHICLE AND BUS ASSEMBLY FOR SEALING ALUMINUM PANELS AGAINST WATER PENETRATION.

SPECIFICATION NUMBER:

WIDTH	MANUFACTURER/PART NUMBER	FREIGHTLINER SPECIFICATION NUMBER
1"	FasTape™ 0816	48-03221-100
2"	FasTape™ 0816	48-03221-200

ENGINERING NOTES:

1. PHYICAL PROPERTIES:

TENSILE, psi (FASSON TM-7A)	35
ELONGATION, %	5
ADHESION 180 deg PEEL (oz/in) (APPLIED ON SST SUBSTRATE) PER ASTM D3330	120
TACK, LOOP (FASSON TM-7A) oz/IN WIDTH	145

2. MATERIAL:

FASCESTOCK (5.0 mils THICK TYP.)	FOIL
ADHESIVE (4.5 mils THICK TYP.)	ACRYLIC BASED

CHG	JOB NO	DATE	BY	REVISION
-	P07285-01	12/08/98	DAJ	INITIAL LOAD

48-9209

Materials Specification

PRINT ISSUED	TITLE	PART NO.
	HOSE, RADIATOR SAE STD J20 R1	48-9209
LAST CHG. LTR. F		SHEET 1 OF 1

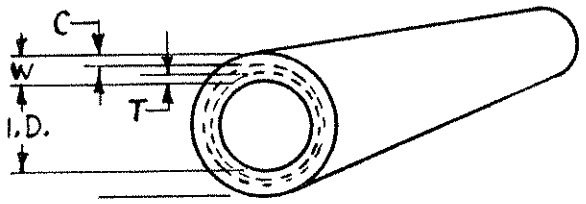
CHG	BY	DATE	WAS
E	YJY	3-30-81	CHG'D BURST PRESSURE
F	CN	11-29-82	SEE M/F HISTORY 60408

CHG	BY	DATE	WAS
B	HJR	4-10-72	Dash No. Series Revised & Redrawn, J #94420
C	JK	1-18-77	ADDED NOTE 2. #63111
D	DL	2-23-77	Remove Note 2 AQ853

SCOPE This specification identifies heavy duty type knitted or braided yarn reinforced neoprene hose. (F)

APPLICATION Radiator and heater hose.

SKETCH



SPECIFICATION NUMBERS (F)

INSIDE DIAMETER BASIC (INCHES)	INSIDE DIAMETER TOL. (INCHES)	TUBE THICKNESS (INCHES) MIN.	COVER THICKNESS (INCHES) MIN.	WALL THICKNESS INCHES MIN.	WALL THICKNESS INCHES MAX.	BURST PRESSURE (PSI) MIN.	FREIGHTLINER SPECIFICATION NUMBER *
3/8	±.03	0.062	0.032	.17	.22	475	48-9209-038
1/2						425	-050
5/8						375	-062
3/4						325	-075
1							-100
1-1/8						300	-112
1-1/4						275	-125
1-1/2						250	-150
1-5/8							-162
1-3/4						225	-175
2						200	-200
2-1/4						175	-225
2-1/2						150	-250
2-3/4						125	-275
3						100	-300
3-1/4							-325
3-1/2						75	-350

*Dash number is nominal I.D. of hose in hundredths of an inch.

SPECIFICATIONS

1. Material: Tube & Cover: Per latest provisions of current SAE Std J20R1, Class D-1 TUBE, Class C Cover.
(F) (F) Reinforcement: 1 or more plies of knitted or braided yarn.
2. Temperature Range: -40°F To +275°F.

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED	Rollins	4-13-72			FT.

Portland FREIGHTLINER CORPORATION Oregon 97208

E-183

MATERIALS SPECIFICATION

48-22880

ORIGINAL JOB NO.	TITLE	PART NO.
3180B	ANTIFREEZE ETHYLENE GLYCOL TYPE	48-22880
LAST CHG LTR: L		SHEET 1 OF 3

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION
L	3180B	FEF	04-30-84	REVISED & REDRAWN

SCOPE: THIS SPECIFICATION IDENTIFIES ETHYLENE GLYCOL ANTIFREEZE COMPATIBLE WITH FILTER ELEMENTS OF THE FOLLOWING TYPES:
A. CHROMATE B. BORATE C. DRY CHEMICAL ADDITIVE (DCA) TYPE

APPLICATION: ENGINE COOLANT AND ANTIFREEZE PROTECTION.

SPECIFICATIONS: SHALL BE PER DESIGNATION OF THE MANUFACTURER FOR HIS PRODUCT.

SOURCE	APPROVED BRAND NAME OR DESIGNATION (USA)	UOM (1)	FREIGHTLINER SPECIFICATION NUMBER
AMERICAN BETTER CHEMICALS	FORMULA #7120 ANTIFREEZE	QT	48-22880-000
AUTOLINE OIL COMPANY	AUTOLINE ANTIFREEZE		
CAPITOL SUPPLY COMPANY, INC.	CAPITOL SUPPLY ANTIFREEZE/ SUMMER COOLANT		
CATO OIL & GREASE COMPANY, INC.	WANDA PERMANENT ANTIFREEZE		
CITIES SERVICE OIL COMPANY	CITGO PREMIUM ANTIFREEZE/ COOLANT		
DOW CHEMICAL COMPANY	SENTINEL	GL*	
	FORMULA #769 FORMULA #777 FORMULA #826 FORMULA #829 DOW SUPER COOLANT DOW WEATHERSET ANTIFREEZE	QT	
DRYDENE OIL COMPANY, INC.	DRYDENE PERMANENT ANTIFREEZE		
E.I. DUPONT DENEMOURS & CO.	TELAR ZEREX	GL**	
FARMERS UNION CENTRAL EXCHANGE, INC.	CO-OP ANTIFREEZE YEAR ROUND COOLANT	QT	
FIRESTONE TIRE & RUBBER CO.	FRIGITONE ANTIFREEZE		
GEORGE SENN, INC.	SENN'S PERMANENT ANTIFREEZE		
GETTY OIL COMPANY	FLYING "A" QUALITY ANTIFREEZE		
GULF OIL COMPANY	GULF ANTIFREEZE & SUMMER COOLANT		
HOUSTON CHEMICAL COMPANY	FORMULA #420 FORMULA #701		
J.D. STREET & COMPANY, INC.	ZEPHYR PERMANENT ANTIFREEZE/ COOLANT		
JEFFERSON CHEMICAL CO., INC.	104 ANTIFREEZE JC 85 ANTIFREEZE		
KENDALL REFINING COMPANY	KENDALL ANTIFREEZE		
KIMBELL GROCERY COMPANY	KIMBELL ANTIFREEZE/COOLANT O-A-548 A TYPE I		
LAURENTIDE CHEMICAL CO., INC.	LAURENTIDE ANTIFREEZE		
MFA OIL COMPANY	MFA PERMANENT ANTIFREEZE		

* 55 GALLON DRUM ONLY.
** WITHOUT STOP LEAK IN 55 GALLON DRUM ONLY.

COMPILED	FEF	DATE DRAWN	CADAM ORIGINAL	UNIT OF MEASURE	MASTER NUMBER	
APPROVED	DJL	04-30-84		(1)	07060	000D1

MATERIALS SPECIFICATION

ORIGINAL JOB NO.	TITLE	PART NO.
3180B	ANTIFREEZE ETHYLENE GLYCOL TYPE	48-22880
LAST CHG LTR L		SHEET 2 OF 3

CHANGE INFORMATION	DATE	BY	JOB NO.	LTR

CHANGE INFORMATION	DATE	BY	JOB NO.	LTR
REVISED & REDRAWN	04-30-84	FEF	3180B	L

SOURCE	APPROVED BRAND NAME OR DESIGNATION (USA)	UOM (1)	FREIGHTLINER SPECIFICATION NUMBER
NORTHERN PETROCHEMICAL CO.	ALL WEATHER ANTIFREEZE FROST CHEK ANTIFREEZE PEAK ANTIFREEZE SUB ZERO ANTIFREEZE NUMBER OM-75 ANTIFREEZE NUMBER OM-91 ANTIFREEZE NUMBER OM-93 ANTIFREEZE NUMBER OM-96 ANTIFREEZE NUMBER OM-101 ANTIFREEZE NUMBER OM-102 ANTIFREEZE NUMBER H-507 ANTIFREEZE	QT	48-22880-000
PENNSYLVANIA REFINING CO.	PENN DRAKE PERMANENT		
QUAKER OIL CORPORATION	QUAKER MAID PERMANENT		
QUAKER STATE OIL & REFINING COMPANY	QUAKER STATE ANTIFREEZE		
RPS PRODUCTS	RPS 1016 ANTIFREEZE		
SEARS, ROEBUCK & COMPANY	SEARS PERMANENT ANTIFREEZE/ SUMMER COOLANT		
SHELL CHEMICAL COMPANY	SHELL ANTIFREEZE/ COOLANT 59-14-6		
SHELL OIL COMPANY	SHELLZONE		
STANDARD OIL COMPANY	ATLAS PERMA-GARD KYSO ANTIFREEZE		
SUN OIL COMPANY	SUNOCO MULTI-SEASON		
SUPERB OIL COMPANY	SUPERB PERMANENT TYPE		
TEXACO INCORPORATED	STARTEX ANTIFREEZE COOLANT (P.F.)		
TICHENOR CHEMICAL, INC.	SNO-FLO ANTIFREEZE MONOCOL 500 ANTIFREEZE		
UNION CARBIDE CORPORATION	WINTER-FLO ANTIFREEZE NUMBER G-300 ANTIFREEZE NUMBER G-375 ANTIFREEZE NUMBER G-376 ANTIFREEZE NUMBER G-386 ANTIFREEZE	GL***	
UNION OIL OF CALIFORNIA	UNION 76 YEAR ROUND ANTIFREEZE	QT	
UNITED COOPERATIVE	UNICO MPI-44 ANTIFREEZE		
VALVOLINE OIL COMPANY (DIVISION OF ASHLAND OIL & REFINING COMPANY)	VALVOLINE PERMANENT ANTIFREEZE		
WHITE MOTOR CORPORATION	WHITE MOTOR CORPORATION ANTIFREEZE		
WYANDOTTE CHEMICAL CORP.	NUMBER 241-0 (0A548ALL) NUMBER 241-4 NUMBER 241-5 (U3034CW) NUMBER 241-7 (0A548C11) NUMBER 241-9 (U4347CC-CW)		

*** IN DRUMS WITHOUT ANTI-LEAK.

COMPILED	FEF	DATE DRAWN	CADAM ORIGINAL		MASTER NUMBER	
APPROVED	DJL	04-30-84			07060	00001

MATERIALS SPECIFICATION

ORIGINAL JOB NO.	TITLE	PART NO.
3180B	ANTIFREEZE ETHYLENE GLYCOL TYPE	48-22880
LAST CHG LTR: L		SHEET 3 OF 3

CHANGE INFORMATION	DATE	BY	JOB NO.	TR

CHANGE INFORMATION	DATE	BY	JOB NO.	TR
REVISED & REDRAWN	04-30-84	FEF	3180B	L

SOURCE	APPROVED BRAND NAME OR DESIGNATION (CANADA)	UOM (1)	FREIGHTLINER SPECIFICATION NUMBER
B. P. CANADA, LTD.	B. P. ANTIFREEZE	LR	48-22880-001
BRADFORD PENN OIL, LTD.	VICEROY ANTIFREEZE		
CANADA TIRE CORPORATION, LTD.	PERMA-FILL SUPER ANTIFREEZE/ SUMMER COOLANT POLAR ANTIFREEZE		
DOW CHEMICAL OF CANADA, LTD.	FORMULA #769		
DUROL ANTIFREEZE SALES	DUROL PERMANENT ANTIFREEZE		
GULF OIL CO., LTD.	GULF ANTIFREEZE/ SUMMER COOLANT		
HOME OIL DISTRIBUTORS	HOME EXCEL ANTIFREEZE		
IMPERIAL OIL, LTD.	ESSO RADIATOR ANTIFREEZE		
STANDARD CHEMICALS, LTD.	STAN-GARD ANTIFREEZE		
STANDARD OIL OF BRITISH COLUMBIA, LTD.	CHERVON ANTIFREEZE		
SUN OIL COMPANY CANADA, LTD.	SUNOCO CUSTOM QUALITY		
SUPERTEST PETROLEUM CORP, LTD.	SUPERTEST ALL CANADIAN		
TEXACO CANADA, LTD.	STARTEX ANTIFREEZE COOLANT (P.F.)		
UNION CARBIDE CANADA, LTD.	"HERCULES" HEAVY DUTY ANTIFREEZE PRESTONE ANTIFREEZE UCAR ANTIFREEZE NUMBER G-375 ANTIFREEZE		
WARREN PACKAGING, LTD.	DUAL DUTY ANTIFREEZE & SUMMER COOLANT		

COMPILED	FEF	DATE DRAWN	CADAM ORIGINAL		MASTER NUMBER	
APPROVED	DJL	04-30-84			07060	000D1

ADRIENNE CHILBERG

DRAWN	J L	TITLE	DRAWING NUMBER	
APPRV	ERK	HOSE-WIRE BRAID TEXTILE COVER, SPECIAL RATING	48-25003	
DATE	11/05/87	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1	CHG. LTR. F
CATIA ORIGINAL				

UNLESS OTHERWISE NOTED, DIMENSIONS ARE IN INCHES

SCOPE: THIS SPECIFICATION IDENTIFIES WIRE REINFORCED ELASTOMERIC HOSE THAT MEETS ALL REQUIREMENTS OF SAE J517 AND HAS AN MEDIUM OPERATING PRESSURE.

APPLICATION: FOR USE IN POWER STEERING SYSTEMS.

HOSE SIZE*	ID BASIC (INCH)	OD MAX. (INCH)	MIN. BURST PRESSURE PSI	MAX. WORK PRESSURE PSI	MIN. BEND RADIUS	SUPPLIER PH	FREIGHTLINER PART NUMBER
8	.406	.789	8000	2175**	4-5/8	206-8	48-25003-008
20	1.00	1.49	2500	625	9.0	206-20	48-25003-020

* COPPER TUBE SIZE

** REF: CERTIFICATION OF THE RATING ON FILE WITH CORPORATE ENGINEERING STANDARDS

ENGINEERING NOTES:

1. MATERIAL: REINFORCED ELASTOMERIC HOSE EQUALING OR EXCEEDING THE SPECIFICATIONS OF SAE J517, AND FMVSS #106.

2. CONSTRUCTION:
INNER TUBE-----SYNTHETIC RUBBER
INNER BRAID----TWO BRAIDS OF FIBER
REINFORCEMENT--HIGH TENSILE STEEL WIRE
COVER----------BLUE TEXTILE BRAID COVER

3. TEMPERATURE RANGE: -40°F TO +158°F

4. ALTERNATE SOURCE: -008; AQ P/N FC300-08 (INCLUDES "AQP" LINING)

CHG	JOB NO	DATE	BY	REVISION
F	820878-01	04/02/97	DAJ	REVISED AND REDRAWN, ADDED -020

48-02504

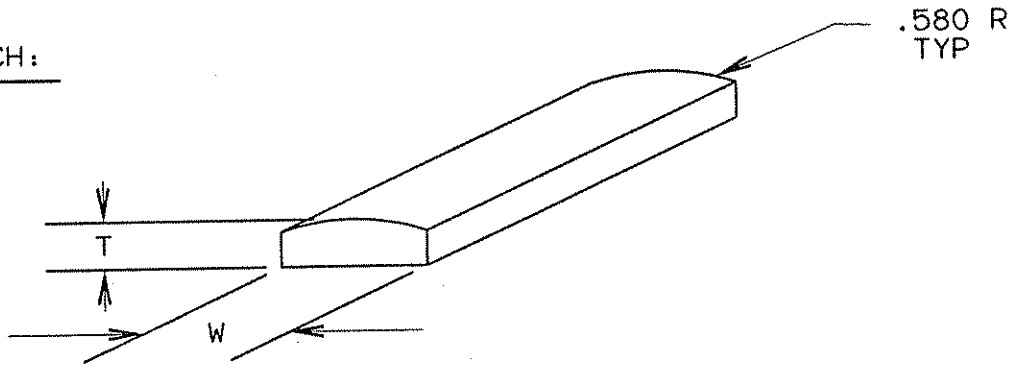
MATERIAL SPEC

ORIGINAL JOB NO.	TITLE	PART NO.
2884C	PVC, EXTRUDED FLAT STRIP	48-02504
LAST CHG LTR: -		SHEET 1 OF 1

SCOPE: THIS SPECIFICATION IDENTIFIES AN EXTRUDED PVC FLAT STRIP.

APPLICATION: THIS MATERIAL WILL BE USED AS A SEAT COVER RETAINING STRIP.

SKETCH:



SPECIFICATION NUMBERS:

THICKNESS (T) INCHES	WIDTH (W) INCHES	COLOR	MANUFACTURERS DESIGNATION		FREIGHTLINER SPECIFICATION NUMBER
			SRU		
5/32	3/8	WHITE	9520		48-02504-156

SPECIFICATIONS:

MATERIAL: POLYVINYL CHLORIDE, EXTRUSION GRADE

HARDNESS: SHORE 'A', 10 SEC.....99

100% MODULUS, PSI.....2900

TENSILE STRENGTH, PSI.....3370

% ELONGATION.....273

MUST PASS FMVSS NO. 302, FLAMMABILITY OF INTERIOR MATERIALS.

CHANGE INFORMATION				
LTF	NO.	BY	DATE	

CHANGE INFORMATION				
LTF	NO.	BY	DATE	

COMPILED	KCB	DATE DRAWN	CADAM ORIGINAL	UNIT OF MEASURE	MASTER NUMBER	
APPROVED	DJL	09-28-84		FT	00001	000D1

COMMENT=
GROUP=REL2 SUBGRP=MAS SCALE= 0.6035 DRAWID=48-02505 A
DATE 9/91 TIME=15.27 ACCESS=NONE
LOG

PLOT TOO LARGE - SCALE OF 2.000 WAS FACTORED BY 3.314

48-02505

ORIGINAL JOB NO.	TITLE	PART NO.
K0206	EXTRUSION, ALUMINUM, WINDSHIELD HEADER	48-02505
LAST CHG LTR: A		SHEET 1 OF 1

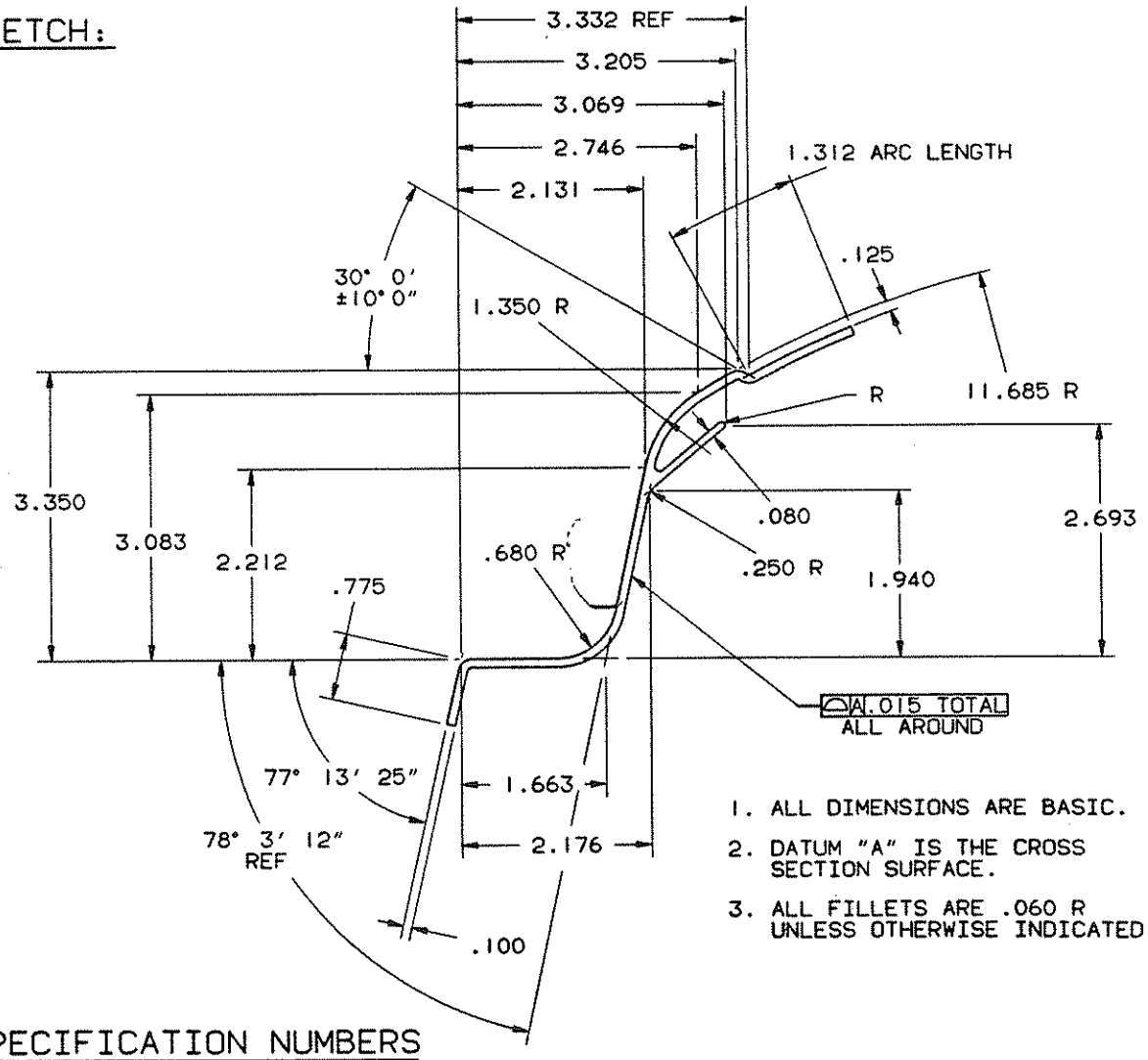
CHANGE INFORMATION	DATE	BY	LTR

CHANGE INFORMATION	DATE	BY	OB NO.
FROM 6035-T5 TO 6063-T5	02-13-85	PLD	K0206

SCOPE: THIS SPECIFICATION IDENTIFIES A METAL EXTRUSION.

APPLICATION: USED AS A WINDSHIELD HEADER.

SKETCH:



1. ALL DIMENSIONS ARE BASIC.
2. DATUM "A" IS THE CROSS SECTION SURFACE.
3. ALL FILLETS ARE .060 R UNLESS OTHERWISE INDICATED.

SPECIFICATION NUMBERS

	EXTRUSION DIE NO.	MATERIAL	WEIGHT LB/FT	FREIGHTLINER SPECIFICATION NUMBER
		(1)		
		6063-T5	.934	48-02505-000

(A)

SPECIFICATIONS

(1) MATERIAL: ALUMINUM (SEE TABLE)

2. FINISH: AS EXTRUDED

COMPILED	WTM	DATE DRAWN	CADAM ORIGINAL	MATERIAL	MASTER NUMBER	
APPROVED	PLD	12-12-84		(1)	00001	000D1

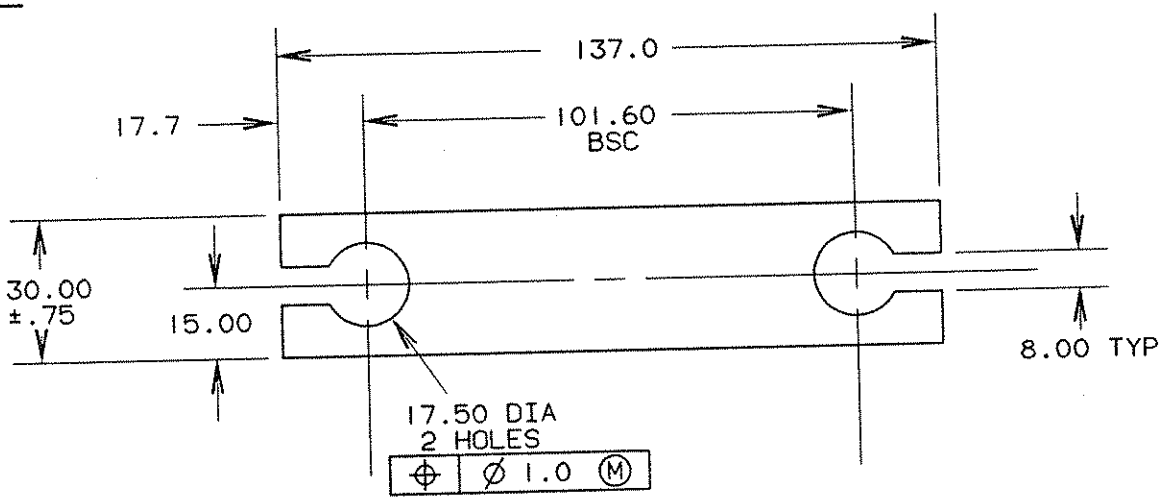
MATERIAL SPEC

ORIGINAL JOB NO.	TITLE	PART NO.
8144C	EXTRUSION, SPACER REAR SUSPENSION	48-02506
LAST CHG LTR: -		SHEET 1 OF 1

SCOPE: THIS SPECIFICATION DESCRIBES AN EXTRUDED LIGHT METAL SECTION.

APPLICATION: REAR SUSPENSION SPACER.

SKETCH:



SPECIFICATION NUMBERS:

MATERIAL (1)	DIE NUMBERS		WEIGHT LBS/FT		FREIGHTLINER SPECIFICATION NUMBERS
6061-T6					48-02506-000

SPECIFICATIONS:

MATERIAL: ALUMINUM ALLOY (1)

FINISH: AS EXTRUDED.

SKETCH DIMENSIONS: MILLIMETERS.

COMPILED	KCB	DATE DRAWN	CADAM ORIGINAL	UNIT OF MEASURE	MASTER NUMBER	
APPROVED	DJL	01-09-85		FT	00001	000D1

LT	NO.	BY	DATE	CHANGE INFORMATION

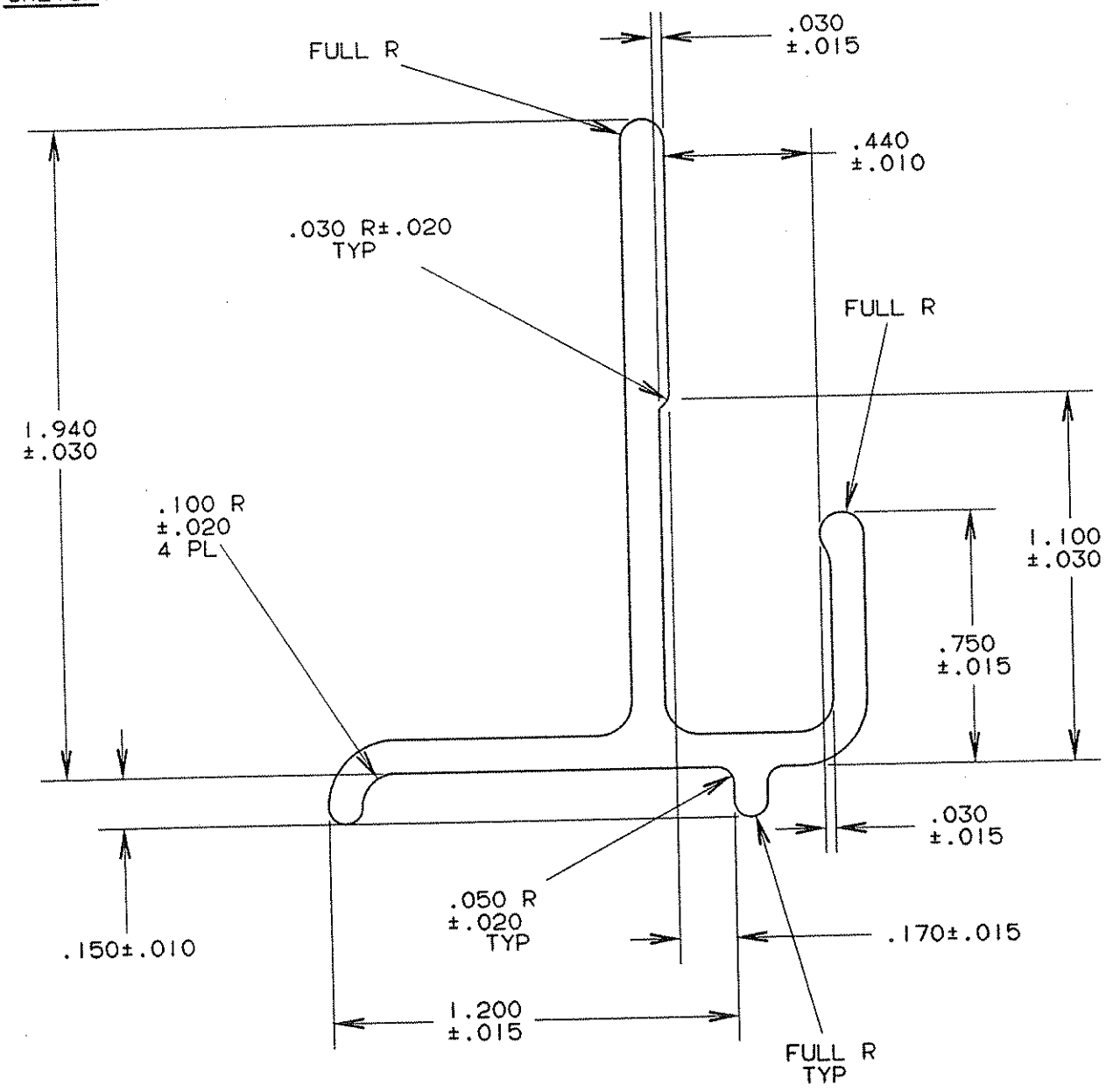
LT	NO.	BY	DATE	CHANGE INFORMATION

DRAWN	TTR	TITLE	DRAWING NUMBER
APPRV	DLL	EXTRUSION UNDER DASH COVER	48-02507
DATE	07-22-87	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 2 / CHG. LTR. C
CADAM ORIGINAL			
UNLESS OTHERWISE NOTED, DIMENSIONS ARE IN INCHES		UNIT OF MEASURE: POUNDS	

SCOPE: THIS EXTRUSION IDENTIFIES A PARTICULAR ALUMINUM EXTRUSION.

APPLICATION: ESPECIALLY USED TO SECURE THE CONVENTIONAL UNDER DASH COVER.

SKETCH:



CHG	JOB NO	DATE	BY	REVISION
B	PM0241	07-22-87	TTR	REVISED & REDRAWN.
C	PM0241	08-10-87	RDH	ELIMINATED VEE GROOVE

DRAWN	TTR	TITLE	DRAWING NUMBER
APPRV	DLL	EXTRUSION UNDER DASH COVER	48-02507
DATE	07-22-87	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 2 OF 2 / CHG. LTR. C
CADAM ORIGINAL			

UNLESS OTHERWISE NOTED, DIMENSIONS ARE IN INCHES | UNIT OF MEASURE: POUNDS

SPECIFICATIONS:

1. UNSPECIFIED WALL THICKNESS: .100±.010.
2. MATERIAL: ALUMINUM, 6061-T6.
3. FINISH: AS EXTRUDED.
4. SCALE: DOUBLE.

CHG	JOB NO	DATE	BY	REVISION
B	PM0241	07-22-87	TTR	REVISED & REDRAWN.
C	PM0241	08-10-87	RDH	SEE SHEET 1.

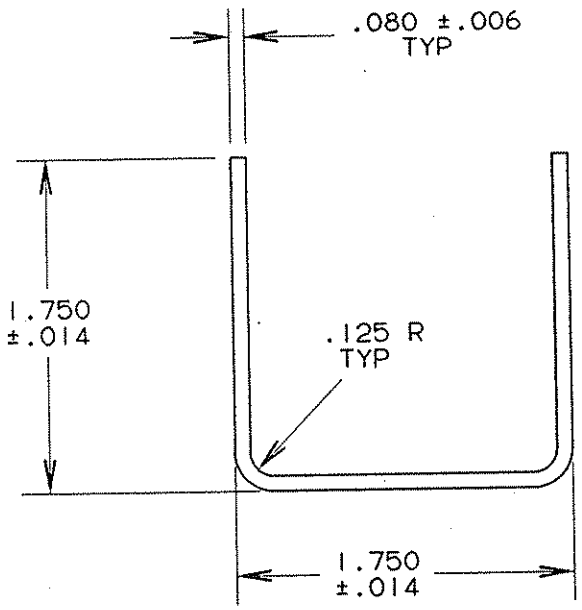
MATERIAL SPEC

ORIGINAL JOB NO.	TITLE	PART NO.
1895C	EXTRUSION, CHANNEL	48-02510
LAST CHG LTR: -		SHEET 1 OF 1

SCOPE: THIS SPECIFICATION DESCRIBES AN EXTRUDED LIGHT METAL SECTION.

APPLICATION: SLPR BOX STRUCTURE.

SKETCH:



SPECIFICATION NUMBERS:

MATERIAL (1)	DIE NUMBERS		WEIGHT LBS/FT		FREIGHTLINER SPECIFICATION NUMBERS
6061-T6					48-02510-000

SPECIFICATIONS:

MATERIAL: ALUMINUM ALLOY (1)

FINISH: AS EXTRUDED.

SKETCH DIMENSIONS: INCHES

COMPILED	DAM	DATE DRAWN	CADAM ORIGINAL	UNIT OF MEASURE	MASTER NUMBER	
APPROVED	KRH.	07-17-86		FT	00001	000D1

CHANGE INFORMATION | DATE | BY | JOB NO.

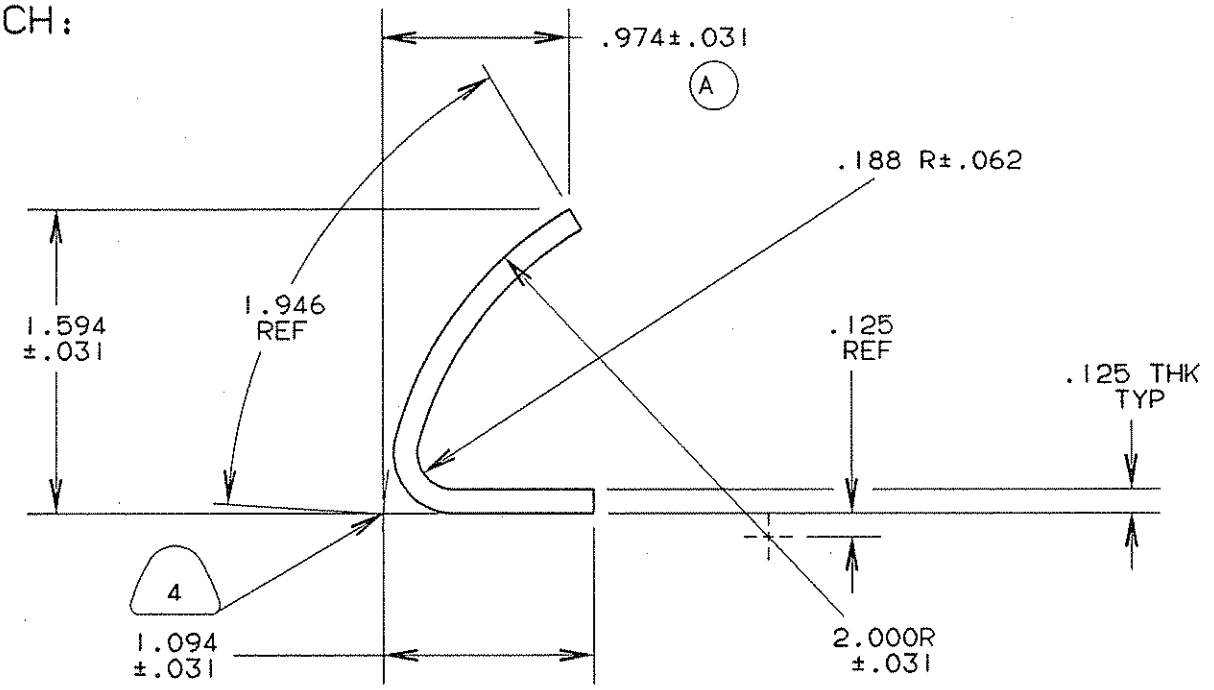
CHANGE INFORMATION | DATE | BY | JOB NO.

DRAWN	EMH	TITLE	DRAWING NUMBER	
APPRV	PLD	EXTRUSION ALUMINUM ANGLE	48-02511	
DATE	03-23-87			
CADAM ORIGINAL		FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1	CHG. LTR. A
UNLESS OTHERWISE NOTED, DIMENSIONS ARE IN INCHES			UNIT OF MEASURE:	LBS

SCOPE: THIS SPECIFICATION IDENTIFIES AN ALUMINUM EXTRUSION.

APPLICATION: TIE ANGLE, CAB WINDSHIELD MASK-TO-CORNER POST.

SKETCH:



SPECIFICATION NUMBERS

DESCRIPTION	MAT'L	HEAT TREAT	EXTRUSION DIE NUMBERS-AL	WT LBS/FT	FREIGHTLINER SPECIFICATION NUMBER
PER SKETCH	6061	T4		.392	48-02511-000

SPECIFICATIONS

① MATERIAL: SEE TABLE

② HEAT TREATMENT: SEE TABLE

3 FINISH: AS EXTRUDED

(A) (4) INTERSECTION POINT REFLECTS CONTINUATION OF 2.000 RADIUS.

CHG	JOB NO	DATE	BY	REVISION	APPR
-	K0275	03-23-87	EMH	ORIGINAL RELEASE	WTM PLD
A	PK0275	8-10-87	WTM	ADDED NOTE 4, FROM 1.015 TO .974	PLD PLD

DRAWN	REG	TITLE	DRAWING NUMBER
APPRV	RDF	EXTRUSION ALUMINUM GRILLE	48-02512
DATE	04-10-87	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET | OF | / CHG. LTR. -
CADAM ORIGINAL			
UNLESS OTHERWISE NOTED, DIMENSIONS ARE IN INCHES		UNIT OF MEASURE: LB	

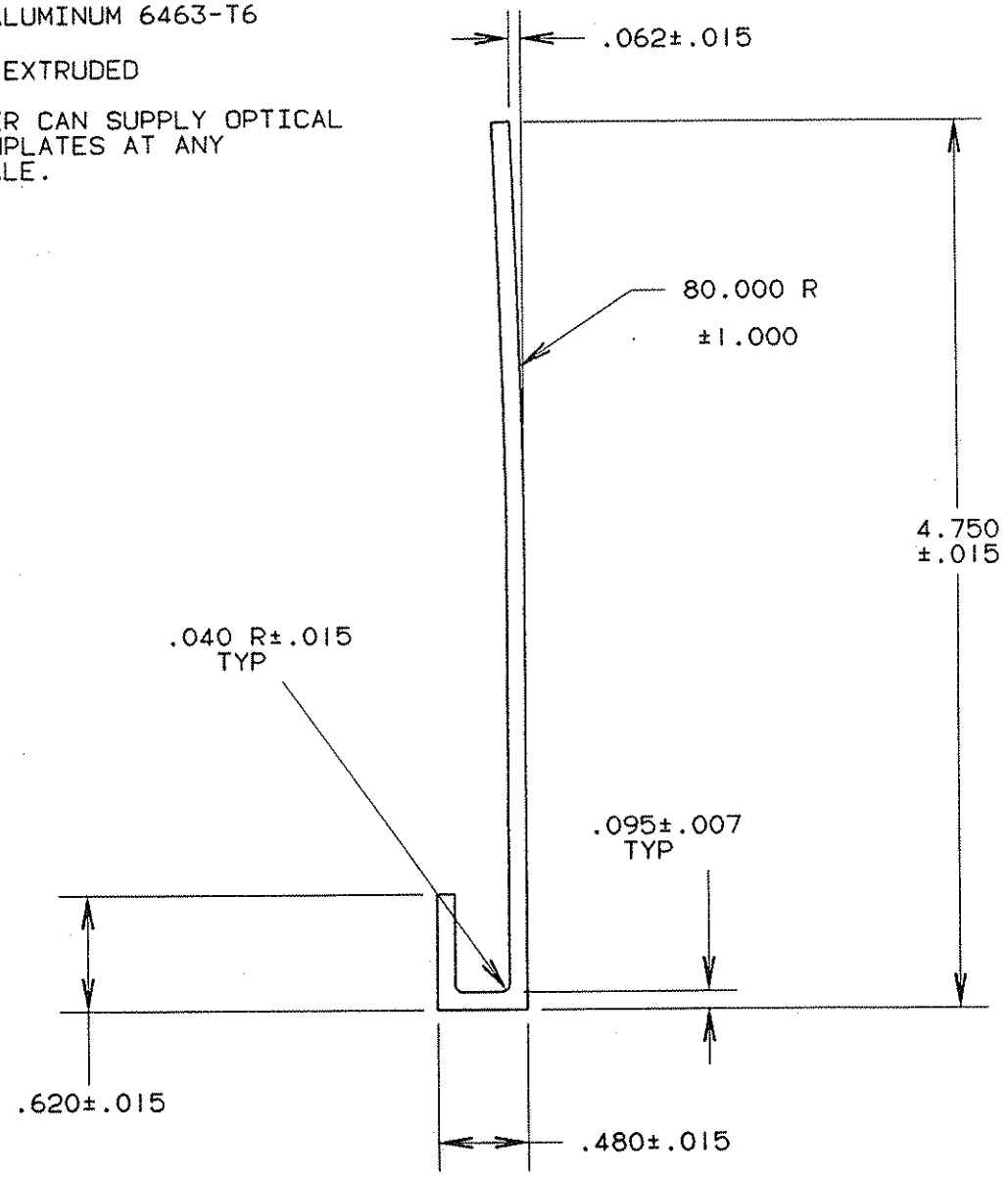
SCOPE: THIS SPECIFICATION IDENTIFIES A METAL EXTRUSION.

APPLICATION: USED AS THE FRONT OF CONVENTIONAL GRILLE TOP TANK.

SKETCH:

SPECIFICATIONS:

1. MATERIAL: ALUMINUM 6463-T6
2. FINISH: AS EXTRUDED
3. FREIGHTLINER CAN SUPPLY OPTICAL TRACING TEMPLATES AT ANY DESIRED SCALE.



CHG	JOB NO	DATE	BY	REVISION
-	5965D	04-10-87	REG	ORIGINAL RELEASE

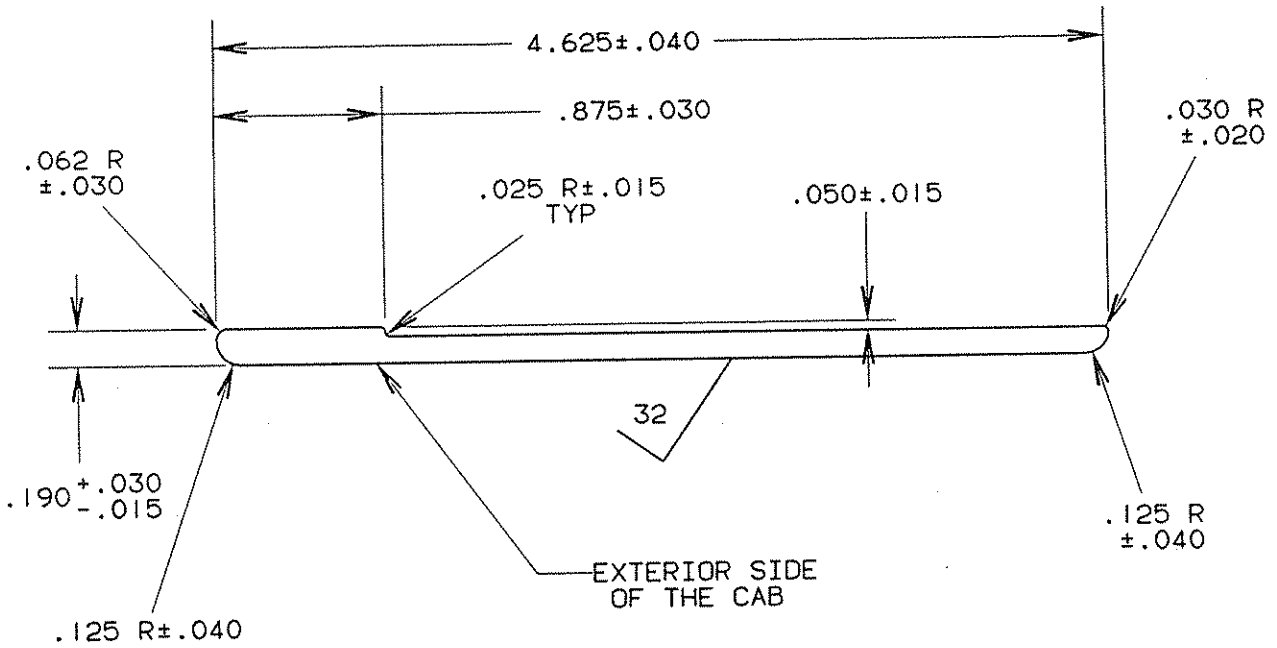
DRAWN	CAJ	TITLE	DRAWING NUMBER
APPRV	KRH	EXTRUSION-ALUMINUM CONV REAR CAB REINFORCEMENT	48-02513
DATE	5-04-87	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1 / CHG. LTR. -
CADAM ORIGINAL			

UNLESS OTHERWISE NOTED, DIMENSIONS ARE IN INCHES | UNIT OF MEASURE: FT

SCOPE: THIS SPECIFICATION DESCRIBES AN EXTRUDED LIGHT METAL SECTION.

APPLICATION: CONVENTIONAL REAR SKIN REINFORCEMENT

SKETCH:



SPECIFICATION NUMBERS:

MATERIAL	DIE NUMBERS		WEIGHT LBS/FT		FREIGHTLINER SPECIFICATION NUMBERS
(1)					48-02513-000

SPECIFICATIONS:

A (1) 6061 T6 ALUMINUM ALLOY; ALTERNATE ALLOY: 6005 T5

FINISH: AS EXTRUDED AND AS NOTED.

CHG	JOB NO	DATE	BY	REVISION
-	K0277	5-04-87	CAJ	ORIGINAL RELEASE
A	P5171G-01	05/16/90	ERK	ADDED SURFACE FINISH REQUIREMENT AND ALTERNATE MATERIAL

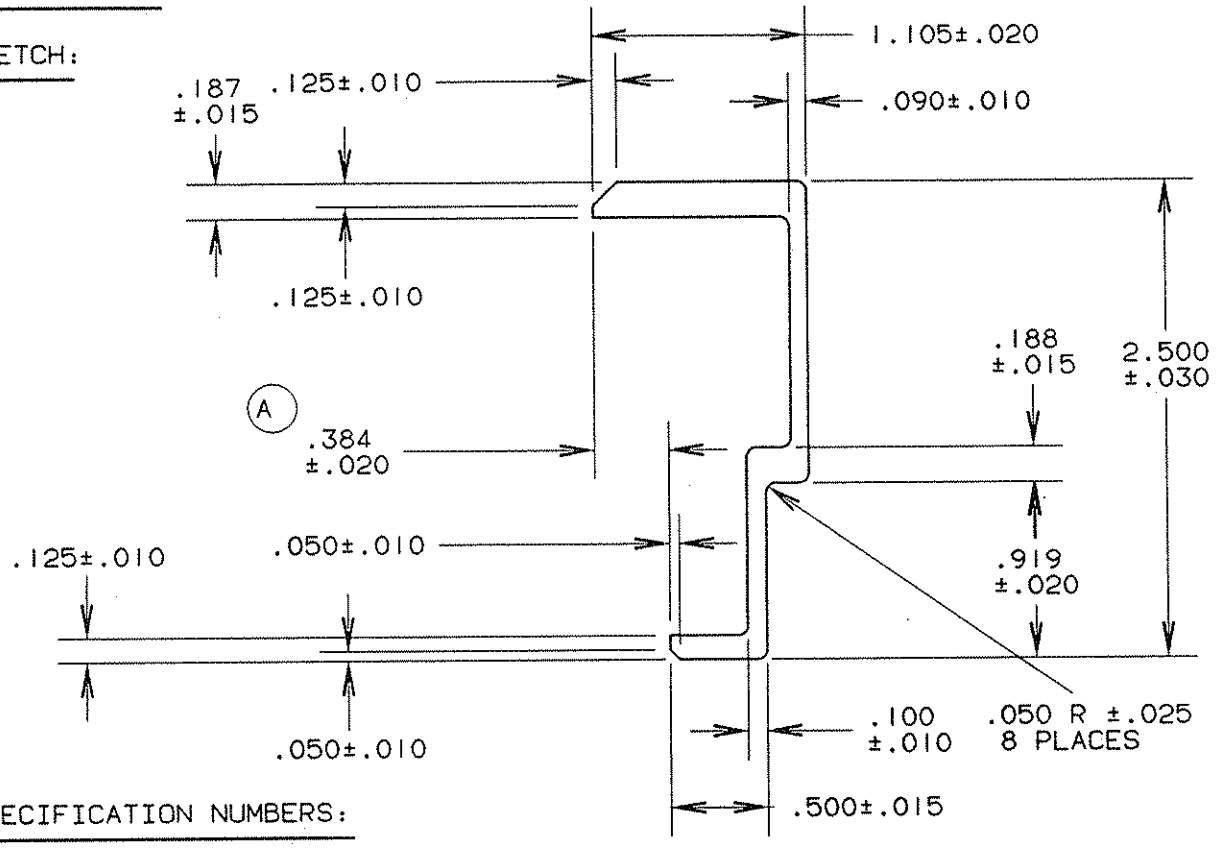
DRAWN	REG	TITLE	DRAWING NUMBER
APPRV	RDF	EXTRUSION TOP TANK BACK	48-02514
DATE	7-06-87	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1 / CHG. LTR. A
CADAM ORIGINAL			

UNLESS OTHERWISE NOTED, DIMENSIONS ARE IN INCHES | UNIT OF MEASURE: FT

SCOPE: THIS SPECIFICATION DESCRIBES AN EXTRUDED LIGHT METAL SECTION.

APPLICATION: USF1-E CONV GRILLE TOP TANK BACK

SKETCH:



SPECIFICATION NUMBERS:

MATERIAL (1)	DIE NUMBERS		WEIGHT LBS/FT	AREA	FREIGHTLINER SPECIFICATION NUMBERS
6463-T6			0.598	0.509 SQ. IN.	48-02514-000

SPECIFICATIONS:

MATERIAL: ALUMINUM ALLOY (1)

FINISH: AS EXTRUDED.

FREIGHTLINER CAN SUPPLY OPTICAL TRACING TEMPLATES TO ANY SCALE.

CHG	JOB NO	DATE	BY	REVISION
-	PL0230	7-06-87	REG	ORIGINAL RELEASE
A	PL0230	11-30-87	RDF	ADDED .384

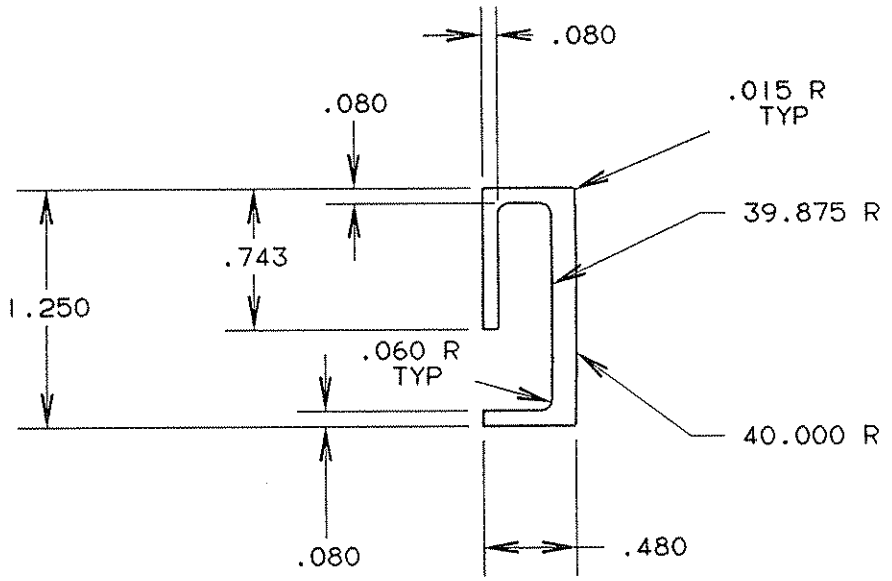
DRAWN	REG	TITLE	DRAWING NUMBER
APPRV	RDF	EXTRUSION CONV GRILLE BOTTOM TANK	48-02515
DATE	7-09-87	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1 / CHG. LTR. -
CADAM ORIGINAL			

UNLESS OTHERWISE NOTED, DIMENSIONS ARE IN INCHES | UNIT OF MEASURE: FT

SCOPE: THIS SPECIFICATION DESCRIBES AN EXTRUDED LIGHT METAL SECTION.

APPLICATION: USF1-E CONVENTIONAL GRILLE BOTTOM TANK

SKETCH:



SPECIFICATION NUMBERS:

MATERIAL (1)	DIE NUMBERS		WEIGHT LBS/FT	AREA	FREIGHTLINER SPECIFICATION NUMBERS
6463-T6			0.315	0.268 SQ. IN.	48-02515-000

SPECIFICATIONS:

MATERIAL: ALUMINUM ALLOY (1)

FINISH: AS EXTRUDED.

FREIGHTLINER CAN SUPPLY OPTICAL TRACING TEMPLATES TO ANY SCALE.

CHG	JOB NO	DATE	BY	REVISION
-	PL0230	7-06-87	REG	ORIGINAL RELEASE

DRAWN	GAB	TITLE	DRAWING NUMBER
APPRV	PWS	EXTRUSION REAR HOOD MOUNT	48-02516
DATE	09-09-87	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1 / CHG. LTR. C
CADAM ORIGINAL			

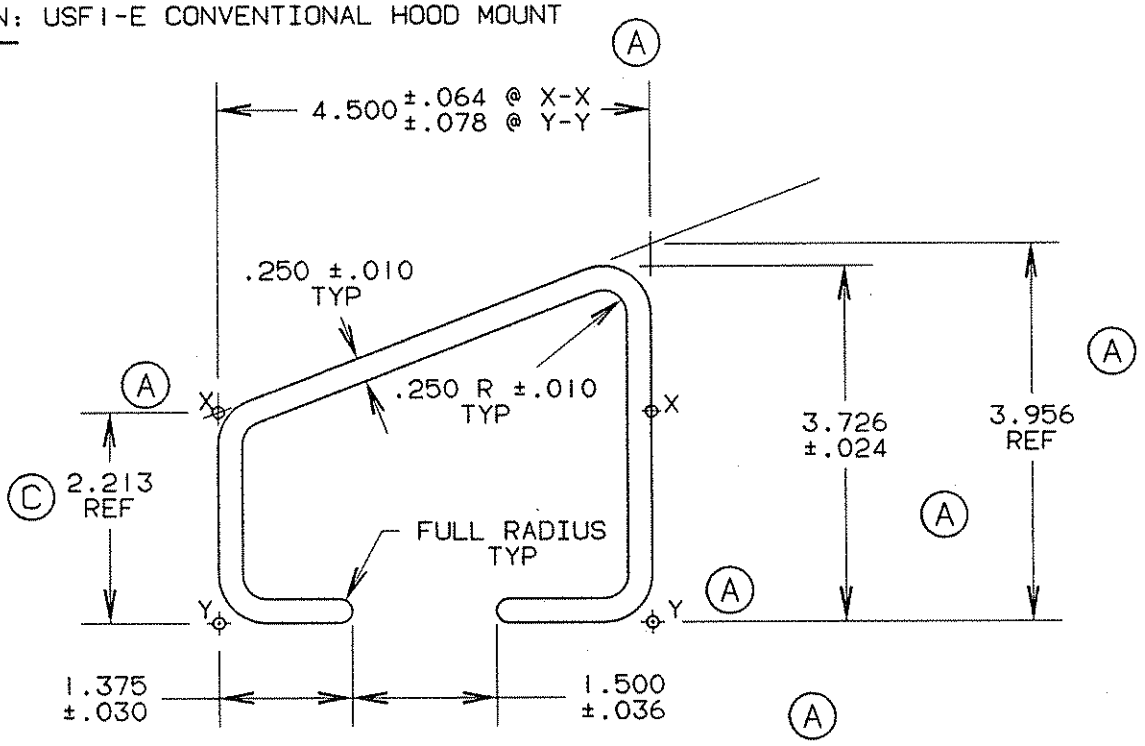
UNLESS OTHERWISE NOTED, DIMENSIONS ARE IN INCHES | UNIT OF MEASURE: FT

* HALF SCALE

SCOPE: THIS SPECIFICATION DESCRIBES AN EXTRUDED METAL SECTION.

APPLICATION: USF1-E CONVENTIONAL HOOD MOUNT

SKETCH:



SPECIFICATION NUMBERS:

MATERIAL (1)	DIE NUMBERS		WEIGHT LBS/FT	AREA	FREIGHTLINER SPECIFICATION NUMBERS
6063-T6			3.572	3.038 SQ. IN.	48-02516-000

SPECIFICATIONS:

MATERIAL: ALUMINUM ALLOY (1)

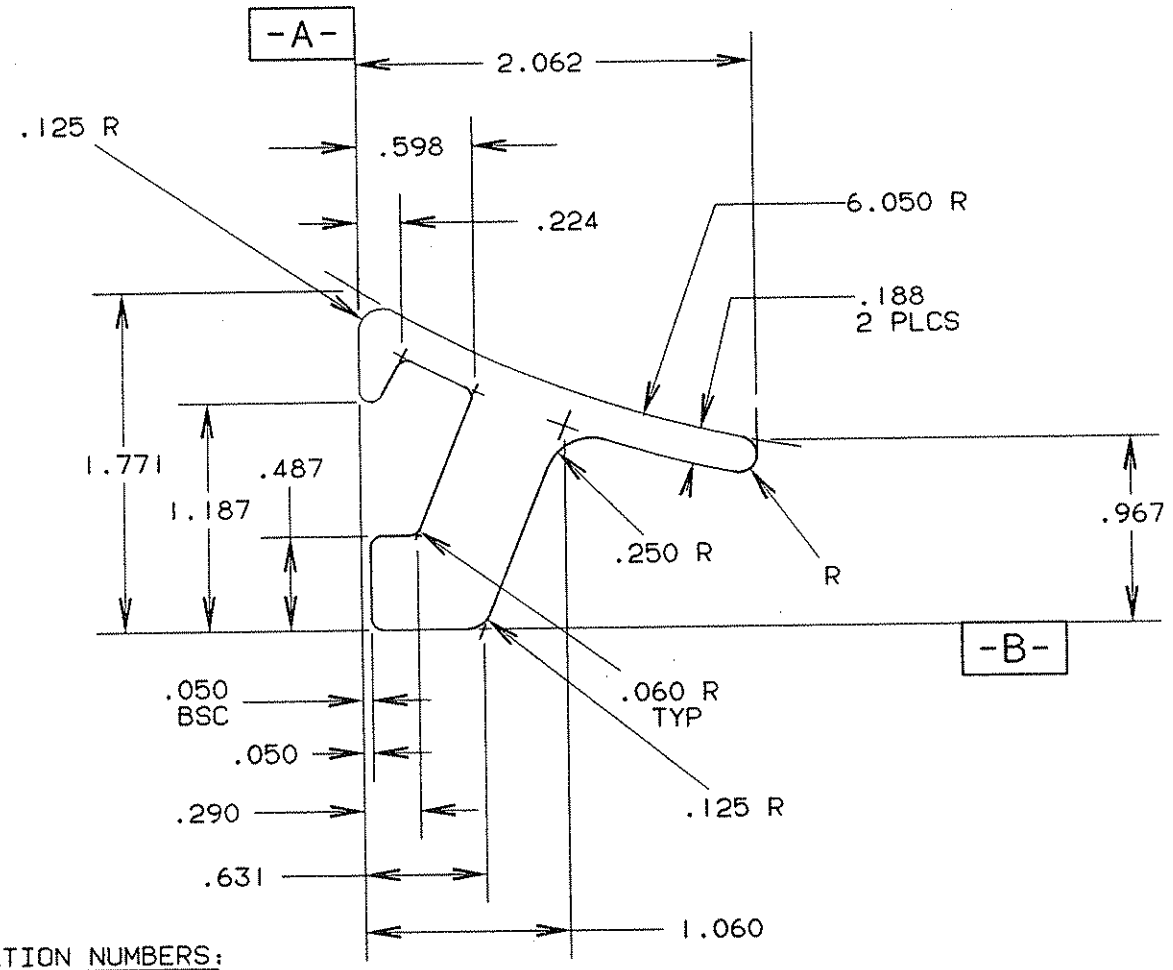
FINISH: AS EXTRUDED.

FREIGHTLINER CAN SUPPLY OPTICAL TRACING TEMPLATES TO ANY SCALE.

CHG	JOB NO	DATE	BY	REVISION
-	PL0230	08-25-87	GAB	ORIGINAL RELEASE
A	PL0230	09-09-87	GAB	REVISED AND REDRAWN
B	PL0230	01-11-88	EMH	ADDED "X" & "Y";REVISED DIM & TOL.
C	PL0230	01-19-88	EMH	CHG'D ±.010 TO REF.

DRAWN	PWS	TITLE	DRAWING NUMBER
APPRV	RJN	EXTRUSION, ALUMINUM AIR DEFLECTOR	48-02518
DATE	09-01-87	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1 / CHG. LTR. A
CADAM ORIGINAL			

UNLESS OTHERWISE NOTED, DIMENSIONS ARE IN INCHES



SPECIFICATION NUMBERS:

MATERIAL		FREIGHTLINER SPECIFICATION NUMBERS
6061-T6		48-02518-000

SPECIFICATIONS:

1. FINISH: AS EXTRUDED
2. DIMS ARE RELATED TO DATUM A (PRIMARY), DATUM B (SECONDARY)
3. TOLERANCE: PER ALUMINUM ASSOCIATION STANDARDS UNLESS OTHERWISE SPECIFIED

CHG	JOB NO	DATE	BY	REVISION
-	PL0238	09-01-87	PWS	ORIGINAL RELEASE
A	PL0263	11-01-88	TFH	REVISED PROFILE SEE M/F HISTORY