MATERIALS SPECIFICATION

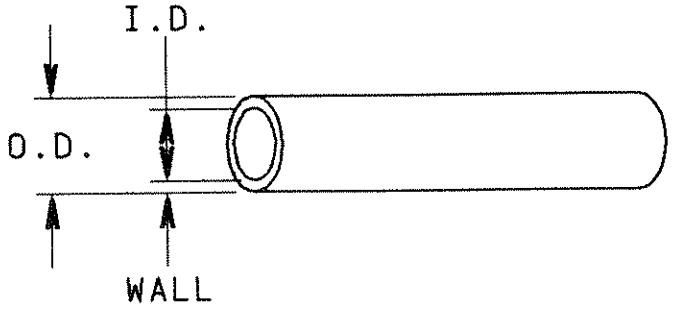
48-01001

ORIGINAL JOB NO.	TITLE	PART NO.
3900B	TUBING, STAINLESS STEEL THIN WALL	48-01001
LAST CHG LTR: B		SHEET 1 OF 2

SCOPE: THIS SPECIFICATION IDENTIFIES SEAMLESS OR WELDED CORROSION RESISTANT (STAINLESS) AUSTENITIC STEEL THIN WALL TUBING.

APPLICATION: GENERAL USE; GRAB HANDLES ON CAB, ETC.

SKETCH:



SPECIFICATION NUMBERS:

NOM O.D. *	WALL THICKNESS	I.D. REF	TYPE (1)	SPEC	WT LB/FT	DULL OR BRIGHT (2)	FREIGHTLINER SPECIFICATION NUMBER
1/4	.0350 ±.0053	.180	304 W&D	ASTM A269	.080	DULL	48-01001-104
						BRIGHT	-504
5/16		.243	304	ASTM A269	.103	DULL	-105
						BRIGHT	-505
3/8		.305	304 W&D	ASTM A269	.127	DULL	-106
						BRIGHT	-506
7/16		.368	304 W&D	ASTM A269	.150	DULL	-107
						BRIGHT	-507
1/2	.0350 ±.0035	.430	304 W&D	ASTM A269	.173	DULL	-108
						BRIGHT	-508
5/8		.555	304	ASTM A269	.220	DULL	-110
						BRIGHT	-510
3/4		.680	304	ASTM A269	.267	DULL	-112
						BRIGHT	-512
3/4	.049 ±.005	.652	304 W&D	ASTM A269	.366	DULL	-212
						BRIGHT	-612
7/8	.0350 ±.0035	.805	304 W&D	ASTM A269	.314	DULL	-114
						BRIGHT	-514
1		.903	304 W&D	ASTM A269	.360	DULL	-116
						BRIGHT	-516
1 1/8		1.055	301/304 W	ORNAMENTAL	.407	DULL	-118
						BRIGHT	-518
1 1/8	.049 ±.005	1.027	301/304 W&D	ORNAMENTAL	.562	DULL	-218
						BRIGHT	-618

CHANGE INFORMATION	DATE	BY	JOB NO.	LTR

CHANGE INFORMATION	DATE	BY	JOB NO.	LTR
REVISED & REDRAWN	05-08-84	FEF	3900B	B

COMPILED	FEF	DATE DRAWN	CADAM ORIGINAL	UNIT OF MEASURE	MASTER NUMBER	
APPROVED		05-08-84		FT	00001	000D1

PORTLAND B FREIGHTLINER CORPORATION OREGON 97208

ORIGINAL JOB NO.	TITLE	PART NO.
3900B	TUBING, STAINLESS STEEL THIN WALL	48-01001
LAST CHG LTR B		SHEET 2 OF 2

SPECIFICATION NUMBERS: (CONTINUED)

NOM O.D. *	WALL THICKNESS	I.D. REF	TYPE (1)	SPEC	WT LB/FT	DULL OR BRIGHT (2)	FREIGHTLINER SPECIFICATION NUMBER
1 1/4	.035 ±.005	1.180	304 W&D	MIL-T-6845	.454	DULL	48-01001-120
						BRIGHT	-520
1 3/8		1.305	347	MIL-T-8808	.501	DULL	-122
						BRIGHT	-522
1 1/2		1.430	304 W&D	ASTM A269	.547	DULL	-124
						BRIGHT	-524
1 5/8		1.555	321 W&D	MIL-T-8808	.594	DULL	-126
						BRIGHT	-526
1 3/4		1.680	321 W&D	MIL-T-8808	.641	DULL	-128
						BRIGHT	-528
1 7/8	.049 ±.005	1.777	321 W&D	MIL-T-8808	.957	DULL	-230
						BRIGHT	-630
2	.035 ±.010	1.930	304 W&D	MIL-T-8504	.734	DULL	-132
						BRIGHT	-532
5	.065	4.870	304	ASTM A269	3.422	DULL	-134
						BRIGHT	-534

* TOLERANCE ±.005 BELOW 1 1/2 DIA; ±.010 1 1/2 DIA AND OVER.

SPECIFICATIONS:

(1) MATERIALS:
TUBING SHALL CONFORM TO APPLICABLE REQUIREMENTS OF LATEST REVISION OF ASTM A269, EXCEPT THAT TUBING OF ORNAMENTAL GRADE WILL BE FURNISHED IN THE "AS WELDED" CONDITION, TO O.D. AND WALL DIMENSIONS, O.D. WELD FLASH REMOVED, I.D. WELD BEAD PRESENT, AND NOT ANNEALED, NOT PICKLED, NOR TESTED AFTER WELDING.

(2) FINISH:
"DULL" SIGNIFIES 180 GRIT PLAIN FINISH.

"BRIGHT" SIGNIFIES MIRROR FINISH (BUFF AND COLOR), SURFACE TO BE FREE OF ANY SIGNIFICANT BLEMISH.

IT IS RECOMMENDED THAT SAMPLES BE SUBMITTED FOR SMOOTHNESS AND REFLECTIVITY REQUIREMENTS.

PAPER SLEEVE PROTECTION OF TUBES SHALL BE PROVIDED BY THE SUPPLIER.

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION
B	3900B	FEF	05-08-84	REVISED & REDRAWN

COMPILED	FEF	DATE DRAWN	CADAM ORIGINAL		MASTER NUMBER	
APPROVED		05-08-84			00001	000D1

48-01002

Materials Specifications

PRINT ISSUED		TITLE	PART NO.
		FLEX TUBING, STAINLESS STEEL PLAIN & WIRE PACKED	48-01002
LAST CHG. LTR	F		SHEET 1 OF 3

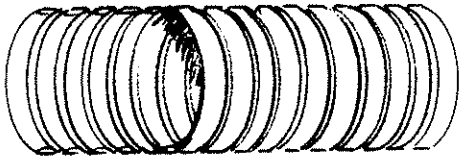
CHG	BY	DATE	WAS

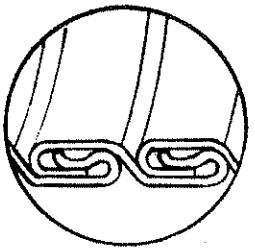
CHG	BY	DATE	WAS
E	HJR	9-24-73	Rev'd & Redrawn; J#A0525
F	DGS	07-08-83	ADDED TRX UNPACKED

SCOPE This specification identifies strip wound, unpacked or wire-packed stainless steel flexible tubing.

APPLICATION Exhaust tubing and for conveying gases at low pressures.

SKETCH





SPECIFICATION NUMBERS

I.D. NOMINAL (INCHES)	O.D. MAXIMUM (INCHES)	MANUFACTURER'S NUMBER FMH UNPACKED (1)	FMH (SST) WIRE PACKED	ANA (1)	EXC (1)	TRX UNPACKED (1)	FREIGHTLINER SPECIFICATION NUMBER
1	1.235						48-01002-100
1-1/4	1.485	Type	Type	Type	Type		-101
1-1/2	1.735	HDT-1	R342SS-1	SSH	RT-10E		-102
1-3/4	1.985						-103
		+	+	+	+		
2	2.240						-104
2-1/4	2.490	Size	Size	Size	Size		-105
2-1/2	2.740	Descrip-	Descrip-	Descrip-	Descrip-		-106
2-3/4	2.990	tion	tion	tion	tion		-107
3	3.245						-108
3-1/4	3.495						-109
3-1/2	3.745						-110
3-3/4	3.995						-111
4	4.245						-112
5	5.255					5-L-S (4)	-113
6	6.255						-114
8	8.255						-115

SPECIFICATIONS

(1) Material: .017"/.020" stainless steel strip; stainless steel wire-packed or unpacked as noted. Unpacked: SAE 30302 or 30304; Packed: SAE 30302, 30304, or 30321 austenitic stainless steels.

2. **Flex**ibility: Axial force needed, at a temperature of 60° - 80° F. (15° - 25° C.), to fully extend or collapse the tubing must be between 50 and 100 lbs., for 18% min. extension.

3. **Tight**ness: Must pass pressure test as follows, using equipment shown:

(4) L Signifies the length (in whole inches) of tube.

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED	Rollins	9-24-73			FT.

kh

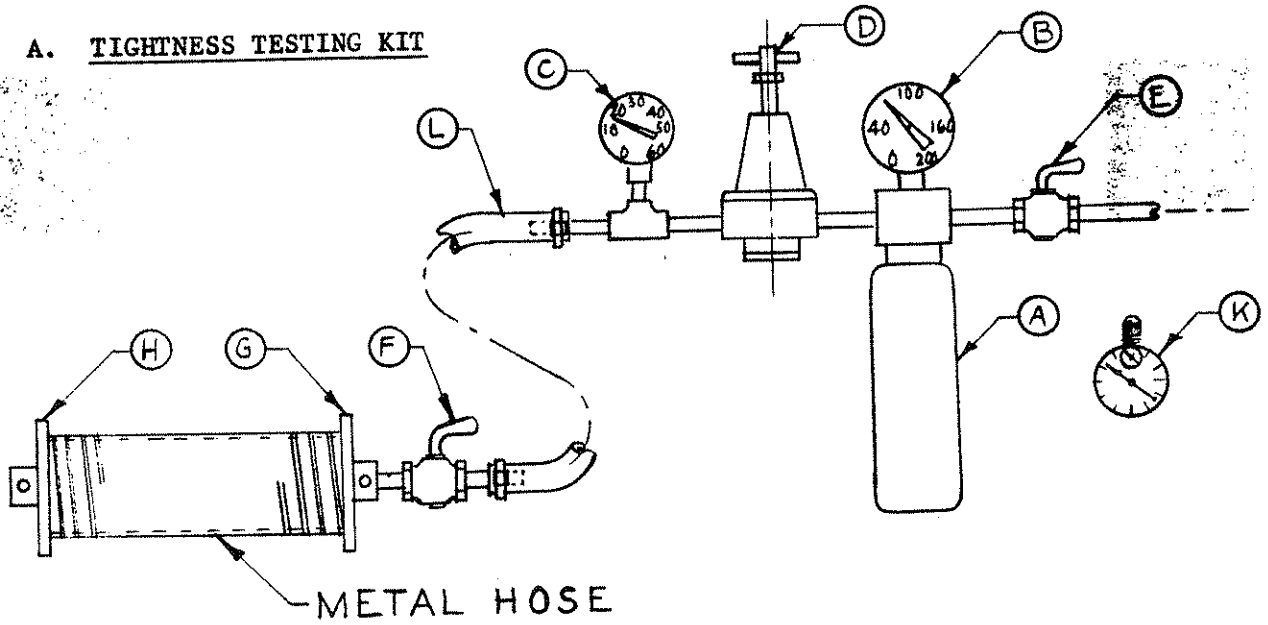
Portland FREIGHTLINER CORPORATION Oregon 97208

PRINT ISSUED		TITLE	PART NO.
		FLEX TUBING, STAINLESS STEEL PLAIN & WIRE PACKED	48-01002
LAST CHG. LTR.	F		SHEET 2 OF 3

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
E	HJR	9-24-73	Revised A Redrawn 1 #405 2. G68YB SEE SHT. 1
F	DGS	07-08-83	

A. TIGHTNESS TESTING KIT



(A) 1 PRESSURE TANK, VOL. 230in.^{3} (3770cm^3).

(B) 1 AIR PRESSURE GAGE, 0-200 p.s.i.

(C) 1 AIR PRESSURE GAGE, 2-60 p.s.i.

(D) 1 PRESSURE REGULATOR

(E) (F) 2 SHUT-OFF COCKS

(G) 1 END PLUG

(H) 1 END PLUG

(L) 1 RUBBER HOSE, .405 I.D. x 5 FT. LONG

(K) 1 STOP WATCH

B. TIGHTNESS TESTING PROCEDURES

Before testing hose should be cleaned free from any oils or foreign matter. Hose length shall be 16 inches extended.

Step No.

1) Attach end plugs securely.

2) Compress hose (should measure 13.3 inches).

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED	Rollins	9-24-73			See Sht 1

Portland FREIGHTLINER CORPORATION Oregon 97208

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PRINT ISSUED	TITLE	PART NO.
	FLEX TUBING, STAINLESS STEEL PLAIN & WIRE PACKED	48-01002
LAST CHG. LTR F		SHEET 3 OF 3

3) Shut off cock "F" at hose plug "G".

4) Pressurize tank "A" at 50 lbs. or above. Read pressure at 0 - 200 "B" gage.

5) Turn regulator "D" until gage 2 - 60 "C" reads 10 lbs.

6) Open plug cock "F".

7) Pressurize tank "A" at 100 lbs. of air or more.

8) Turn off tank valve "E".

9) When air pressure on 0 -200 "B" gage reaches 100 lbs. reading start stopwatch and time until 2 - 60 gage "C" reads 0.

10) After the above step has been completed, hose length should measure 12 inches unplugged and minimum air evacuation time should be as follows:

3" Dia. Hose	426 sec. = 7 min.06 sec.
3½" Dia. Hose	313 sec. = 5 min.13 sec.
4" Dia. Hose	240 sec. = 4 min.00 sec.
5" Dia. Hose	153 sec. = 2 min.33 sec.
6" Dia. Hose	106 sec. = 1 min.46 sec.

4. VIBRATION TEST

After completing the Pressure Test outlined in 3. B. above, subject the flex hose sample to vibration as follows:

A. First, fully compress the flex hose sample to its minimum axial length.
B. Firmly clamp one end of the sample, leaving 12 inches of compressed length free.
C. Securely fasten the free end in a clamping fixture capable of shaking it with a straight uniform lateral vibration at 600 cycles per minute and an amplitude of ± 0.50 inch. (The clamping fixture must not occupy more than 2.00 inches of compressed length of the flex hose sample).
D. Continue the shaking for a total of 30 minutes.
E. Return the sample for a final Pressure Tightness test per 3.B. above.

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
E	HJR	9-24-73	J#A0525
F	DGS	07-08-83	SEE SHT. 1 66848

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED	Rollins	9-24-73			See Sht 1.

kh

IDRIENNE CHILBERG

DRAWN	HJR	TITLE	DRAWING NUMBER	
APPRV	CRS	TUBING-STAINLESS STEEL TYPE 304	48-01003	
DATE	04/02/76	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1	CHG. LTR. G
CATIA ORIGINAL				

SCOPE: THIS SPECIFICATION IDENTIFIES SEAMLESS OR WELDED STAINLESS STEEL TUBING, TYPE 304.

APPLICATION: TUBING FOR GENERAL USE.

NOM. O.D. (INCHES)	WALL THKNSS (INCHES)	I.D. (INCHES)	PROCESS	FINISH	SPEC	FREIGHTLINER PART NUMBER
1/2	13 (.095)	.310	SEAMLESS	MILL	ASTM A269	48-01003-050
5/8	16 (.065)	.495	SEAMLESS	MILL	ASTM A269	48-01003-060
3/4	16 (.065)	.620	SEAMLESS	MILL	ASTM A269	48-01003-075
1	14 (.083)	.834	SEAMLESS	MILL	ASTM A269	48-01003-090
1	11 (.120)	.760	SMLS OR WLDED	MILL	ASTM A269	48-01003-100
1 1/8	11 (.120)	.875	SMLS OR WLDED	MILL	ASTM A269	48-01003-121
1 1/8	14 (.083)	.959	SMLS OR WLDED	MILL	ASTM A269	48-01003-125
1 1/4	11 (.120)	1.010	SMLS OR WLDED	SATIN	ASTM A269	48-01003-225
2 1/2	16 (.065)	2.370	SMLS OR WLDED	MILL	ASTM A269	48-01003-250
G 5	10 (.134)	5.295	WELDED	MILL	ASTM A312	48-01003-500

ENGINEERING NOTES:

1. MATERIAL: TYPE 304 STAINLESS STEEL TUBING.

CHG	JOB NO	DATE	BY	REVISION
G	PH0718-63	01/29/97	DAJ	REVISED AND REDRAWN IN CATIA. ADDED -500.

48-01051

Materials Specification

PRINT ISSUED	TITLE	PART NO.
9-17-71	FLEX TUBING, STEEL, GALVANIZED	48-01051
LAST CHG LTR. A		SHEET 1 OF 1

SCOPE This specification identifies strip wound, galvanized, steel flexible tubing.

APPLICATION A lightweight tubing without packing in the joints. Used for conveying air, smoke, gases, etc.

SKETCH



SPECIFICATION NUMBERS

NOMINAL I.D. (INCHES)	MAXIMUM O.D. (INCHES)	MANUFACTURER'S NUMBER (ANA)		FREIGHTLINER SPECIFICATION NUMBER
1/2	.663	Type UIH		48-01051-000
3/4	.915			-001
1	1.210			-002
1-1/8	1.335			-003
1-1/4	1.460			-004
1-3/8	1.585			-005
1-1/2	1.710			-006
1-5/8	1.835			-007
1-3/4	1.960			-008
1-7/8	2.085			-009
2	2.215			-010
4	4.220			-012

SPECIFICATIONS

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
A	HJR	1-28-72	Add -012; J #84860

A

ns

COMPILED	RLR	DATE DRAWN			UNIT OF MEASURE
APPROVED		8-31-71			FT.

Portland FREIGHTLINER CORPORATION Oregon 97208

48-01052

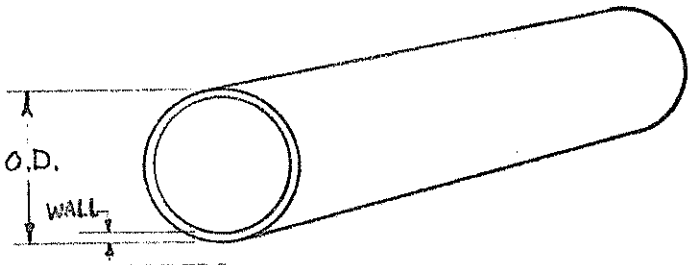
Materials Specification

PRINT ISSUED	TITLE	PART NO.
	TUBE, SEAMLESS TYPE 409	48-01052
LAST CHG. LTR		SHEET 1 OF 1

SCOPE This specification describes seamless or welded Type 409 stainless steel tubing.

APPLICATION General structural purposes.

SKETCH



SPECIFICATION NUMBERS

O.D.	WALL		FREIGHTLINER SPECIFICATION NUMBERS
5.00	.065		48-01052-508

SPECIFICATIONS

1. Material: Stainless steel alloy 409.

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

Portland FREIGHTLINER CORPORATION Oregon 97208

WAS / DATE / BY / CHG

WAS J.# 84490 / DATE — / BY — / CHG —

ns

E-183

48-01076

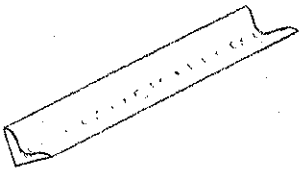
Materials Specification

PRINT ISSUED	TITLE	PART NO.
8/13/71	ANGLE, STEEL	48-01076
LAST CHG LTR C		SHEET 1 OF 3

SCOPE This specification identifies structural steel angle.

APPLICATION General structural uses

SKETCH



SPECIFICATION NUMBERS

SIZE	THICKNESS	FREIGHTLINER SPECIFICATION NUMBERS
1/2 x 1/2	1/8	48-01076-000
5/8 x 5/8	1/8	-001
3/4 x 3/4	1/8	-002
7/8 x 7/8	1/8	-003
1 x 5/8	1/8	-004
1 x 3/4	1/8	-005
1 x 1	1/8	-006
	3/16	-007
	1/4	-008
1-1/8 x 1-1/8	1/8	-009
1-1/4 x 1-1/4	1/8	-010
	3/16	-011
	1/4	-012
1-3/8 x 7/8	1/8	-013
	3/16	-014
1-1/2 x 1-1/4	3/16	-015
1-1/2 x 1-1/2	1/8	-016
	3/16	-017
	1/4	-018
	3/8	-019
1-3/4 x 1-1/4	1/8	-020
1-3/4 x 1-3/4	1/8	-021
	3/16	-022
	1/4	-023
2 x 1-1/4	3/16	-024
	1/4	-025

SIZE	THICKNESS	FREIGHTLINER SPECIFICATION NUMBERS
2 x 1-1/2	1/8	48-01076-026
	3/16	-027
	1/4	-028
2 x 2	1/8	-029
	3/16	-030
	1/4	-031
	5/16	-032
	3/8	-033
2-1/4 x 1-1/2	3/16	-034
2-1/2 x 1-1/2	3/16	-035
	1/4	-036
	5/16	-037
2-1/2 x 2	3/16	-038
	1/4	-039
	5/16	-040
	3/8	-041
2-1/2 x 2-1/2	3/16	-042
	1/4	-043
	5/16	-044
	3/8	-045
	1/2	-046
3 x 2	3/16	-047
	1/4	-048
	5/16	-049
	3/8	-050
	1/2	-051

...Continued

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
A	RLR	6-28-71	Added Note 2 on Sht. 2
B	HJR	2-17-72	Add -092 thru -116; Add P. 3; J #84770
C	HJR	7-9-73	1-7/8; J #A0500

C

ns

COMPILED	RWG	DATE DRAWN			UNIT OF MEASURE
APPROVED	Rwg	5-17-71			FT.

48-01076

Materials Specification

PRINT ISSUED	TITLE	PART NO.
8/13/71	ANGLE, STEEL	48-01076
LAST CHG LTR: C		SHEET 2 OF 3

CHG	BY	DATE	WAS

SPECIFICATION NUMBERS (Continued)

SIZE	THICKNESS	FREIGHTLINER SPECIFICATION NUMBERS
3 x 2-1/2	1/4	48-01076-052
	5/16	-053
	3/8	-054
	1/2	-055
3 x 3	3/16	-056
	1/4	-057
	5/16	-058
	3/8	-059
	7/16	-060
	1/2	-061
3-1/2 x 2-1/2	1/4	-062
	5/16	-063
	3/8	-064
	1/2	-065
3-1/2 x 3	1/4	-066
	5/16	-067
	3/8	-068
	1/2	-069
3-1/2 x 3-1/2	1/4	-070
	5/16	-071
	3/8	-072
	1/2	-073
4 x 3	1/4	-074
	5/16	-075
	3/8	-076
	7/16	-077
	1/2	-078
	5/8	-079

SIZE	THICKNESS	FREIGHTLINER SPECIFICATION NUMBERS
4 x 3-1/2	1/4	48-01076-080
	5/16	-081
	3/8	-082
	7/16	-083
	1/2	-084
4 x 4	1/4	-085
	5/16	-086
	3/8	-087
	7/16	-088
	1/2	-089
	5/8	-090
	3/4	-091
5 x 3	5/16	-092
	3/8	-093
	1/2	-094
5 x 3-1/2	1/4	-095
	5/16	-096
	3/8	-097
	7/16	-098
	1/2	-099
	3/4	-101
5 x 5	5/16	-102
	3/8	-103
	1/2	-104
	5/8	-105
	3/4	-106

... Continued

CHG	BY	DATE	WAS
A	RLR	6-28-71	Added Note 2 on Sht. 2
B	HJR	2-17-72	Add -092 thru -116; Add P. 3; J #84770
C	HJR	7-9-73	See P. 1; J #A0500

SPECIFICATIONS

1. Material: Steel ASTM A36

2. Mechanical Properties:

Mtr'l	Typical Properties		
	Tensile Ult. Ksi	Yield Ksi	Elongation % in 2 inches
AISI 1020	63	35	38

ns

COMPILED	RWG	DATE DRAWN			UNIT OF MEASURE
APPROVED		5-17-71			FT.

Portland FREIGHTLINER CORPORATION Oregon 97208

E-183

Materials Specification

PRINT ISSUED	TITLE	PART NO.
	ANGLE, STEEL	48-01076
LAST CHG. LTR. C		SHEET 3 OF 3

SPECIFICATION NUMBERS (Continued)

SIZE	THICKNESS	FREIGHTLINER SPECIFICATION NUMBERS
6 x 3-1/2	5/16	48-01076-107
	3/8	-108
	1/2	-109
6 x 4	5/16	-110
	3/8	-111
	7/16	-112
	1/2	-113
	5/8	-114
	3/4	-115
	7/8	-116

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
B	HJR	2-17-72	Add -092 thru -116; Add P. 3; J #84770
C	HJR	7-9-73	See P. 1; J #A0500

ns

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED	Rollins	2-17-72			FT.

Materials Specification

PRINT ISSUED	TITLE	PART NO.
8/20/71	ANGLE, STEEL STRUCTURAL	48-01077
LAST CHG LTR		SHEET 2 OF 2

WAS | DATE | BY | CHG

SPECIFICATION NUMBERS (Cont.)

SIZE	THICKNESS	FREIGHTLINER SPECIFICATION NUMBER
6 x 4	5/16	48-01077-064
	3/8	-065
	7/16	-066
	1/2	-067
	5/8	-068
	3/4	-069
	7/8	-070
6 x 6	3/8	-071
	1/2	-072
	5/8	-073
	3/4	-074
	7/8	-075
	1	-076
7 x 4	3/8	-077
	7/16	-078
	1/2	-079
	5/8	-080
	3/4	-081

SIZE	THICKNESS	FREIGHTLINER SPECIFICATION NUMBER
8 x 4	1/2	48-01077-082
	5/8	-083
	3/4	-084
	1	-085
8 x 6	1/2	-085
	5/8	-086
	3/4	-087
	1	-088
8 x 8	1/2	-089
	5/8	-090
	3/4	-091
	1	-092

WAS | DATE | BY | CHG

SPECIFICATIONS

1. Material: Steel ASTM-A36

2. Mechanical Properties:

MINIMUM PROPERTIES		CARBON CONTENT
TENSILE ULT. KSI	YIELD	
36	58-80	.26 Max.

ns

COMPILED	RLR	DATE DRAWN			UNIT OF MEASURE
APPROVED		8-2-71			LB.

48-01126

Materials Specification

PRINT ISSUED	TITLE	PART NO.
5/13/71	CHANNEL, STEEL, REGULAR	48-01126
LAST CHG LTR 4		SHEET 1 OF 1

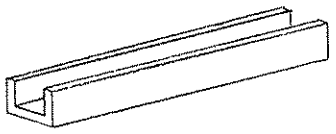
CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
A	RLR	6-28-71	Added Note 2

SCOPE This specification identifies regular steel channel

APPLICATION General light channel applications

SKETCH



SPECIFICATION NUMBER

SIZE	THICKNESS	FREIGHTLINER SPECIFICATION NUMBERS
3/4 x 3/8	1/8	48-01126-000
7/8 x 3/8	1/8	-001
7/8 x 7/16	1/8	-002
1 x 3/8	1/8	-003
1 x 1/2	1/8	-004
1-1/8 x 9/16	3/16	-005
1-1/4 x 1/2	1/8	-006
1-1/2 x 1/2	1/8	-007
1-1/2 x 9/16	3/16	-008
1-1/2 x 3/4	1/8	-009
1-1/2 x 1-1/2	3/16	-010
1-3/4 x 1/2	3/16	-011
2 x 1/2	1/8	-012
2 x 9/16	3/16	-013
2 x 5/8	1/4	-014
2 x 1	1/8	-015
	3/16	-016
2-1/2 x 5/8	3/16	-017

SPECIFICATIONS

1. Material: Steel ASTM A36

2. Mechanical Properties:

Mtr'l	Typical Properties		
	Tensile Ult. Ksi	Yield Ksi	Elongation % in 2 inches
AISI 1020	63	35	38

ns

COMPILED	RWG	DATE DRAWN			UNIT OF MEASURE
APPROVED	[signature]	5-17-71			FT.

Portland FREIGHTLINER CORPORATION Oregon 97208

48-01127

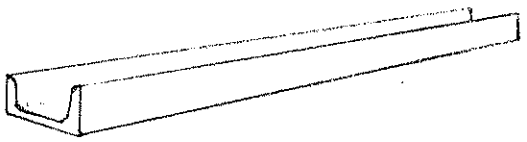
Materials Specification

PRINT ISSUED	TITLE	PART NO.
11/5/71	CHANNEL, STEEL, STRUCTURAL	48-01127
LAST CHG. LTR B		SHEET 1 OF 1

SCOPE This specification identifies structural steel channel.

APPLICATION In general structural applications.

SKETCH



SPECIFICATION NUMBERS

CHANNEL DEPTH	WT/FT	WEB THK.	FLANGE WIDTH	FREIGHTLINER SPECIFICATION NUMBER
3	4.1	.170	1.410	48-01127-000
	5.0	.258	1.498	-001
	6.0	.356	1.596	-002
4	5.4	.180	1.580	-003
	6.25	.247	1.647	-004
	7.25	.320	1.720	-005
5	6.7	.190	1.750	-006
	9.0	.325	1.885	-007
6	8.2	.200	1.920	-008
	10.5	.314	2.034	-009
	13.0	.437	2.157	-010
7	9.8	.210	2.090	-011
	12.25	.314	2.194	-012
	14.75	.419	2.299	-013
8	8.5	.180	1.875	-014
	11.5	.220	2.260	-015
	13.75	.303	2.343	-016
	18.75	.487	2.527	-017

B

CHANNEL DEPTH	WT/FT	WEB THK.	FLANGE WIDTH	FREIGHTLINER SPECIFICATION NUMBER
9	13.4	.230	2.430	48-01127-018
	15.0	.285	2.485	-019
10	15.3	.240	2.600	-020
	20.0	.379	2.739	-021
	25.0	.526	2.886	-022
12	20.7	.280	2.940	-023
	25.0	.387	3.047	-024
	30.0	.510	3.170	-025

SPECIFICATIONS

1. Material: Steel ASTM A36

2. Mechanical Properties:

MATERIAL	TYPICAL PROPERTIES		
	TENSILE ULT. k.s.i.	YIELD k.s.i.	ELONGATION % IN 2 INCHES
AISI 1020	63	35	38

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
B	HJR	10-22-71	Redrawn. Add dash nos.

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

Portland FREIGHTLINER CORPORATION Oregon 97208

B

E-183

48-01128

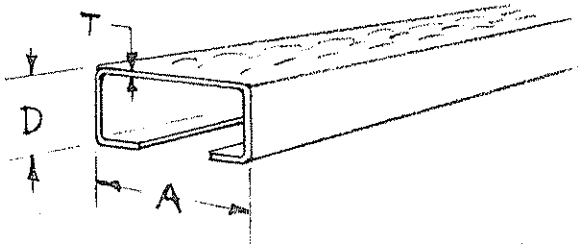
Materials Specification

PRINT ISSUED	TITLE	PART NO.
	GRIP STRUT STEEL	48-01128
LAST CHG. LTR.		SHEET 1 OF 1

SCOPE This specification describes a carbon steel channel with expanded grating web.

APPLICATION Non-Skid steps and catwalks.

SKETCH



SPECIFICATION NUMBERS

T MATERIAL THICKNESS	D CHANNEL DEPTH	A CHANNEL WIDTH	WEIGHT LB/FT	MANUFACTURER'S NUMBER GL		FREIGHTLINER SPECIFICATION NUMBER
14 ga. (.0747)	1-1/2	4-3/4	2.3	21514-IS		48-01128-000
	2		2.6	22014-IS		-001
	2-1/2		2.8	22514-IS		-002
	1-1/2	7	3.0	31514-IS		-003
	2		3.2	32014-IS		-004
	2-1/2		3.5	32514-IS		-005
	1-1/2	9-1/2	3.6	41514-IS		-006
	2		3.8	42014-IS		-007
	2-1/2		4.1	42514-IS		-008
	1-1/2	11-3/4	4.2	51514-IS		-009
	2		4.4	52014-IS		-010
	2-1/2		4.7	52514-IS		-011
	1-1/2	18-3/4	6.1	81514-IS		-012
	2		6.3	83014-IS		-013
	2-1/2		6.6	82514-IS		-014
12 ga. (.1046)	1-1/2	4-3/4	3.2	21512-IS		-201
	2		3.6	22012-IS		-202
	2-1/2		4.0	22512-IS		-203
	1-1/2	7	4.1	31512-IS		-204
	2		4.5	32012-IS		-205
	2-1/2		4.9	32512-IS		-206
	3		5.2	33012-IS		-207
	1-1/2	9-1/2	5.0	41512-IS		-208
	2		5.4	42012-IS		-209
	2-1/2		5.7	42512-IS		-210
	3		6.1	43012-IS		-211
	1-1/2	11-3/4	5.9	51512-IS		-212
	2		6.2	52012-IS		-213
	2-1/2		6.6	52512-IS		-214
	3		7.0	53012-IS		-215
	1-1/2	18-3/4	8.5	81512-IS		-216
	2		8.9	82012-IS		-217
	2-1/2		9.2	82512-IS		-218
	3		9.6	83012-IS		-219

SPECIFICATIONS: 1. Material: Carbon Steel
2. Finish: Black, unpainted; lightly oiled

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

Portland FREIGHTLINER CORPORATION Oregon 97208

M/F

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
—	—	—	J #84810

ns

E-183

48-01129

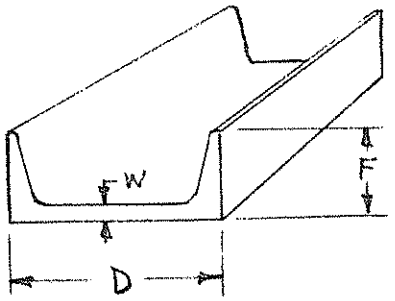
Materials Specification

PRINT ISSUED	TITLE	PART NO.
	CHANNEL, STEEL SHIP & CAR	48-01129
LAST CHG. LTR		SHEET 1 OF 1

SCOPE This specification describes ship and car channels of steel meeting ASTM A36 requirements.

APPLICATION General structural use.

SKETCH



SPECIFICATION NUMBERS

D DEPTH	WT LB/FT	W WEB	F FLANGE	FREIGHTLINER SPECIFICATION NUMBERS
3	7.1	.313	1.938	48-01129-301
4	11.89	.375	3.000	-401
	13.8	.500	2.50	-402
6	12.0	.313	2.500	-601
	15.3	.340	3.500	-602
	16.3	.375	3.000	-603
	18.0	.375	3.500	-604
7	17.6	.375	3.000	-701
	19.1	.350	3.450	-702
	22.7	.500	3.600	-703
8	18.7	.350	2.975	-801
	20.0	.400	3.025	-802
	21.4	.375	3.450	-803
	22.8	.425	3.500	-804
9	25.4	.450	3.500	-901
10	21.9	.325	3.450	-991
	24.9	.375	3.400	-992
	28.5	.425	3.950	-993
	33.6	.575	4.100	-994

SPECIFICATIONS

1. Material: ASTM A36

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
—	—	—	Job #84140

ns

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

Portland FREIGHTLINER CORPORATION Oregon 97208

48-01151

Materials Specification OA252

PRINT ISSUED	TITLE	PART NO.
8/13/7	I BEAM, STEEL, STRUCTURAL	48-01151
LAST CHG LTR C		SHEET 1 OF 1

CHG	BY	DATE	WAS

SCOPE This specification identifies structural steel I beam "S" shape.

APPLICATION General structural usage

SKETCH



SPECIFICATION NUMBERS

BEAM DEPTH	WT/FT	WEB THICKNESS	FLANGE WIDTH	FREIGHTLINER SPECIFICATION NUMBERS
3	5.7	.170	2.33	48-01151-000
	7.5	.349	2.51	-001
4	7.7	.190	2.66	-002
	9.5	.326	2.80	-
5	10.0	.210	3.00	-004
	14.75	.494	3.28	-
6	12.5	.230	3.33	-
	17.25	.465	3.56	-
7	15.3	.250	3.66	-
	20.0	.450	3.86	-
8	18.4	.270	4.00	-
	23.0	.441	4.17	-

DUPLICATE OF 23-09072

CHG	BY	DATE	WAS
A	RLR	6-28-71	Added Note 2
B	FHF	4-20-87	Rev. Min. Prop. 4279C
C	ERK	11/29/88	Rmvd. Inactive #'s; P*A078-90

SPECIFICATIONS

1. Material: Steel ASTM A36

2. Mechanical Properties:

Minimum Properties		
Tensile Ult. Ksi	Yield Ksi	Elongation % in 2 inches
80-58	36 Min.	21

		DATE DRAWN			UNIT OF MEASURE
COMPILED	RWG	5-17-71			LB.
APPROVED	Emil				

ns

Portland FREIGHTLINER CORPORATION Oregon 97208

A B

48-01152

Materials Specification

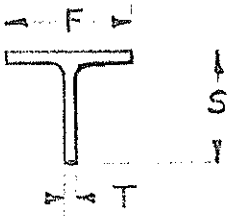
PRINT ISSUED	TITLE	PART NO.
5/20/71	TEE, STEEL STRUCTURAL	48- 1152
LAST CHG. LTR A		SHEET 1 OF 1

CHG	BY	DATE	WAS

SCOPE This specification identifies steel tees in structural and bar sizes.

APPLICATION General structural usage.

SKETCH



SPECIFICATION NUMBERS

STRUCTURAL SIZES

FLANGE	STEM	STEM THICKNESS	WEIGHT LB/FT		FREIGHTLINER SPECIFICATION NUMBERS
3	2-1/2	5/16	6.1		48-01152-000
	3	5/16	6.7		-001
	3	3/8	7.8		-002
4	3	3/8	9.2		-003
	4	1/2	13.5		-004

BAR SIZES

3/4	3/4	1/8	.61		-070
1	1	1/8	.85		-101
	1	3/16	1.20		-102
1-1/4	1-1/4	1/8	1.09		-103
	1-1/4	3/16	1.55		-104
	1-1/4	1/4	1.93		-105
1-1/2	1-1/2	3/16	1.90		-106
	1-1/2	1/4	2.43		-107
1-3/4	1-3/4	3/16	2.26		-108
	1-3/4	1/4	2.90		-109
2	1-1/2	1/4	3.12		-201
	2	1/4	3.62		-202
	2	5/16	4.30		-203
2-1/4	2-1/4	1/4	4.10		-204
2-1/2	2-1/2	1/4	4.60		-205
	2-1/2	5/16	5.53		-206
	2-1/2	3/8	6.40		-207

CHG	BY	DATE	WAS
A	HJR	7-28-71	Revised, Redrawn, Retitled

SPECIFICATIONS

1. Material: Steel ASTM A36
2. Mechanical Properties:

MINIMUM PROPERTIES		
TENSILE ULT. K.S.I.	YIELD K.S.I.	ELONGATION % IN 2 INCHES
80-58	36 Min.	23

ns

		DATE DRAWN			UNIT OF MEASURE
COMPILED	HJR	5-17-71			FT.
APPROVED	Final				

Portland FREIGHTLINER CORPORATION Oregon 97208

A

48-01153

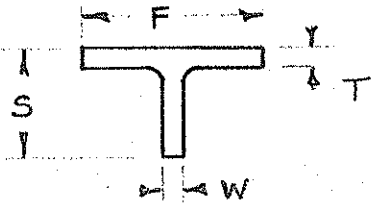
Materials Specification

PRINT ISSUED	TITLE	PART NO.
9-1-71	TEE, SPECIAL STRUCTURAL STEEL	48-01153
LAST CHG. LTR		SHEET 1 OF 1

SCOPE This specification identifies steel structural tees of special sizes obtained by cutting a structural beam into two T-shaped sections.

APPLICATION General structural use as alternative to built-up section when regular series Tees would not be satisfactory.

SKETCH



SPECIFICATION NUMBERS

F FLANGE	S STEM	THICKNESS W WEB	THICKNESS T FLANGE	WEIGHT LB/FT.	CUT FROM	FREIGHTLINER SPECIFICATION NUMBERS
6.565	5.25	.305	.540	17.1	12" x 36# WF Beam (1)	48-01153-000

SPECIFICATIONS

(1) Meets pertinent specifications of ASTM A36.

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS

ns

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

Materials Specification

PRINT ISSUED	TITLE	PART NO.
9-1-71	BEAM, WIDE FLANGE STEEL ASTM A36	48-01154
LAST CHG. LTR.		SHEET 1 OF 2

SCOPE This specification describes wide flange steel beams.

APPLICATION Heavy duty structural uses.

SKETCH



SPECIFICATION NUMBERS

SECTION SIZE AND WEIGHT PER FOOT	DEPTH OF SECTION IN INCHES	FLANGE (INCHES) WIDTH	FLANGE (INCHES) THICKNESS	WEB THICKNESS IN INCHES	FREIGHTLINER SPECIFICATION NUMBER
4" x 13.0 lbs.	4.16	4.060	.345	.280	48-01154-001
5" x 16.0 lbs.	5.00	5.000	.360	.240	-101
18.5 lbs.	5.13	5.000	.438	.250	-102
18.9 lbs.	5.47	5.000	.417	.313	-103
6" x 8.5 lbs.	5.83	3.940	.194	.170	-301
12.0 lbs.	6.00	4.000	.279	.230	-302
15.5 lbs.	6.00	6.000	.269	.240	-303
16.0 lbs.	6.25	4.030	.404	.260	-304
20.0 lbs.	6.20	6.018	.367	.258	-305
25.0 lbs.	6.37	6.080	.456	.320	-306
8" x 10.0 lbs.	7.90	3.940	.204	.170	-401
13.0 lbs.	8.00	4.000	.254	.230	-402
15.0 lbs.	8.12	4.015	.314	.245	-403
17.0 lbs.	8.00	5.250	.308	.230	-404
20.0 lbs.	8.14	5.268	.378	.248	-405
24.0 lbs.	7.93	6.500	.398	.245	-406
28.0 lbs.	8.06	6.540	.463	.285	-407
31.0 lbs.	8.00	8.000	.433	.288	-408
35.0 lbs.	8.12	8.027	.493	.315	-409
40.0 lbs.	8.25	8.077	.558	.365	-410
48.0 lbs.	8.50	8.117	.683	.405	-411
58.0 lbs.	8.75	8.222	.808	.510	-412
67.0 lbs.	9.00	8.287	.933	.575	-413
10" x 11.5 lbs.	9.87	3.950	.204	.180	-501
15.0 lbs.	10.00	4.000	.269	.230	-502
17.0 lbs.	10.12	4.010	.329	.240	-503
19.0 lbs.	10.25	4.020	.394	.250	-504
21.0 lbs.	9.90	5.750	.340	.240	-505
25.0 lbs.	10.08	5.762	.430	.252	-506
29.0 lbs.	10.22	5.799	.500	.289	-507
33.0 lbs.	9.75	7.964	.433	.292	-508
39.0 lbs.	9.94	7.990	.528	.318	-509

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

WAS / DATE / BY / CHG

WAS / DATE / BY / CHG

ns

Portland FREIGHTLINER CORPORATION Oregon 97208

48-01154

Materials Specification

PRINT ISSUED	TITLE	PART NO.
9-1-71	BEAM, WIDE FLANGE STEEL ASTM A36	48-01154
LAST CHG. LTR.		SHEET 2 OF 2

WAS / DATE / BY / CHG

SPECIFICATION NUMBERS (CONT.)

SECTION SIZE AND WEIGHT PER FOOT	DEPTH OF SECTION IN INCHES	FLANGE (INCHES) WIDTH	FLANGE (INCHES) THICKNESS	WEB THICKNESS IN INCHES	FREIGHTLINER SPECIFICATION NUMBER
10" x 45.0 lbs.	10.12	8.022	.618	.350	48-01154-510
49.0 lbs.	10.00	10.000	.558	.340	-511
60.0 lbs.	10.25	10.075	.683	.415	-512
66.0 lbs.	10.25	10.075	.748	.415	-513
72.0 lbs.	10.50	10.170	.808	.510	-514
77.0 lbs.	10.62	10.195	.868	.535	-515
89.0 lbs.	10.88	10.275	.998	.615	-516
100.0 lbs.	11.12	10.345	1.118	.685	-517
12" x 14.0 lbs.	11.91	3.970	.224	.200	-601
16.5 lbs.	12.00	4.000	.269	.230	-602
19.0 lbs.	12.16	4.010	.349	.240	-603
22.0 lbs.	12.31	4.030	.424	.260	-604
27.0 lbs.	11.96	6.500	.400	.240	-605
31.0 lbs.	12.09	6.525	.465	.265	-606
36.0 lbs.	12.24	6.565	.540	.305	-607
40.0 lbs.	11.94	8.000	.516	.294	-608
45.0 lbs.	12.06	8.042	.576	.336	-609
50.0 lbs.	12.19	8.077	.641	.371	-610
53.0 lbs.	12.06	10.000	.576	.345	-611
58.0 lbs.	12.19	10.014	.641	.359	-612
65.0 lbs.	12.12	12.000	.606	.390	-613
72.0 lbs.	12.25	12.040	.671	.430	-614
79.0 lbs.	12.38	12.080	.736	.470	-615
85.0 lbs.	12.50	12.105	.796	.495	-616
14" x 17.2 lbs.	14.00	4.000	.272	.210	-701
22.0 lbs.	13.75	5.000	.335	.230	-702
26.0 lbs.	13.89	5.025	.418	.255	-703
30.0 lbs.	13.86	6.733	.383	.270	-704
34.0 lbs.	14.00	6.750	.453	.287	-705
38.0 lbs.	14.12	6.776	.513	.313	-706
43.0 lbs.	13.68	8.000	.528	.308	-707
48.0 lbs.	13.81	8.031	.593	.339	-708
53.0 lbs.	13.94	8.062	.658	.370	-709
61.0 lbs.	13.91	10.000	.643	.378	-710
68.0 lbs.	14.06	10.040	.718	.418	-711
74.0 lbs.	14.19	10.072	.783	.450	-712
78.0 lbs.	14.06	12.000	.718	.428	-713
87.0 lbs.	14.00	14.500	.687	.420	-714

WAS / DATE / BY / CHG

2.

SPECIFICATIONS

1. Material: Steel ASTM A36

TENSILE REQUIREMENTS			
TENSILE STR. ksi	YIELD ksi min.	ELONGATION % in 8"	ELONGATION % in 2"
58 - 80	36	20	21

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

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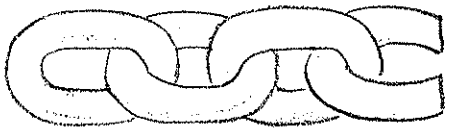
Materials Specification

PRINT ISSUED	TITLE	PART NO.
9-17-71	CHAIN, STEEL, COMMON	48-01155
LAST CHG. LTR		SHEET 1 OF 1

SCOPE This specification identifies proof coil or common chain made from low carbon steel.

APPLICATION A general utility chain.

SKETCH



SPECIFICATION NUMBERS

TRADE SIZE (INCHES)	WORKING LIMIT (LBS.)	FINISH	MANUFACTURER'S NUMBER (ACH)		FREIGHTLINER SPECIFICATION NUMBER
3/16	700	Self-Colored	ACCO Proof Coil Chain		48-01155-000
1/4	1175				-001
5/16	1750				-002
3/8	2450				-003
7/16	3250				-004
1/2	4250				-005
5/8	6375				-006
3/4	9125				-007

SPECIFICATIONS

1. Material: Low carbon steel, minimum tensile strength 55,000 psi.

WAS	DATE	BY	CHG

WAS	DATE	BY	CHG

ns

COMPILED	RLR	DATE DRAWN			UNIT OF MEASURE
APPROVED	[signature]	8-31-71			FT.

Portland FREIGHTLINER CORPORATION Oregon 97208

48-01156

Materials Specification

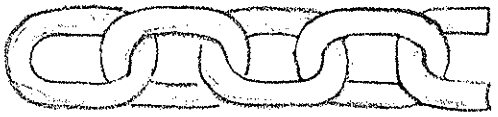
PRINT ISSUED	TITLE	PART NO.
9-17-71	CHAIN, STEEL, PASSING LINK	48-01156
LAST CHG. LTR.		SHEET 1 OF 1

CHG	BY	DATE	WAS

SCOPE This specification identifies passing link steel chain.

APPLICATION Electrically welded chain that is smooth and especially compact. Links are wide enough that they can readily revolve and change directions.

SKETCH



SPECIFICATION NUMBERS

SIZE	MATERIAL DIAMETER (INCHES)	FINISH	FREIGHTLINER SPECIFICATION NUMBER
2/0	.192	Bright Zinc Plated	48-01156-000
3/0	.207		-001
4/0	.218		-002

CHG	BY	DATE	WAS

SPECIFICATIONS

1. Material: Low carbon steel - typically AISI 1008

ns

COMPILED	RLR	DATE DRAWN			UNIT OF MEASURE
APPROVED		8-31-71			FT.

48-01157

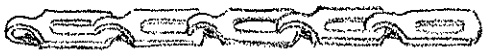
Materials Specification

PRINT ISSUED	TITLE	PART NO.
9-17-71	CHAIN, STEEL, FURNACE	48-01157
LAST CHG. LTR.		SHEET 1 OF 1

SCOPE This specification identifies steel furnace chain.

APPLICATION Operates smoothly over pulleys. Used for many purposes where a light flat chain is needed.

SKETCH



SPECIFICATION NUMBERS

SIZE	FINISH	FREIGHTLINER SPECIFICATION NUMBER
No. 91	Bright Zinc Plated	48-01157-000

CHG	BY	DATE	WAS

SPECIFICATIONS

1. Material: Steel

CHG	BY	DATE	WAS

ns

COMPILED	RLR	DATE DRAWN			UNIT OF MEASURE
APPROVED		8-31-71			FT.

Portland FREIGHTLINER CORPORATION Oregon 97208

48-01158

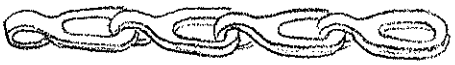
Materials Specification

PRINT ISSUED	TITLE	PART NO.
9-17-71	CHAIN, STEEL, SASH	48-01158
LAST CHG. LTR		SHEET 1 OF 1

SCOPE This specification identifies steel sash chain.

APPLICATION A flat chain suitable for operating smoothly over pulleys.

SKETCH



SPECIFICATION NUMBERS

NUMBER	WORKING LIMIT (LBS.)	FINISH	FREIGHTLINER SPECIFICATION NUMBER
8	75	Bright Zinc Plated	48-01158-000
25	94		-001
30	81		-002
35	106		-003
40	131		-004
45	175		-005
50	225		-006

SPECIFICATIONS

1. Material: High grade commercial strip steel.

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS

ns

COMPILED	RLR	DATE DRAWN			UNIT OF MEASURE
APPROVED	Rlr	8-31-71			FT.

Portland FREIGHTLINER CORPORATION Oregon 97208

DRAWN	DAJ	TITLE	DRAWING NUMBER	
APPRV	DAJ	CABLE-STRANDED GALV. STEEL	48-01159	
DATE	04/30/98	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1	CHG. LTR. A
CATIA ORIGINAL				

SCOPE: THIS SPECIFICATION IDENTIFIES A STRANDED GALVANIZED STEEL CABLE.

APPLICATION: PULL CABLES.

CABLE DIAMETER		FREIGHTLINER SPEC NUMBER
1/8		48-01159-012
1/4		48-01159-025

A

SPECIFICATIONS:

1. MATERIAL: STEEL, STRANDED
2. FINISH: GALVANIZED
3. PHYSICAL PROPERTIES: 2,000 LB MINIMUM ULTIMATE

CHG	JOB NO	DATE	BY	REVISION
A	PC3206-15	04/30/98	DAJ	REVISED AND REDRAWN IN CATIA, ADD -025.

48-01201

Materials Specification

PRINT ISSUED	TITLE	PART NO.
9/29/71	SHEET, STEEL EXPANDED METAL	48-01201
LAST CHG LTR. B		SHEET 1 OF 1

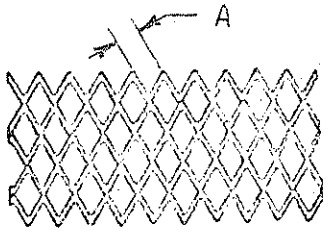
CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
A	RLR	6-28-71	Added Note 1
B	RWG	9-22-71	Added dash numbers.

SCOPE This specification identifies expanded metal steel sheet.

APPLICATION Typical applications are for partitions, guards, enclosures, etc.

SKETCH



SPECIFICATION NUMBERS

A	GAUGE*	FREIGHTLINER SPECIFICATION NUMBERS
STANDARD		
1/4	20	48-01201-000
	18	-001
1/2	18	-002
	16	-003
3/4	16	-004
	13	-005
	10	-006
	9	-007
1	16	-008
1-1/2	16	-009
	13	-010
	10	-011
	9	-012

A	GAUGE*	FREIGHTLINER SPECIFICATION NUMBER
FLATTENED		
1/4	20-22	48-01201-100
	18-20	-101
1/2	40	-102
	20-22	-103
	18-20	-104
	16-18	-105
	13-15	-106
3/4	14-16	-107
	13-15	-108
	9-11	-109
1	16-18	-110
1-1/2	16-18	-111
	14-16	-112
	13-15	-113
	9-11	-114

*First number represents approximate gauge of sheet before expanding.
Second number (Flattened Only) represents approximate gauge after flattening.

SPECIFICATIONS
1/ Mechanical Properties: Not normally published.

COMPILED	RWG	DATE DRAWN			UNIT OF MEASURE
APPROVED	[signature]	5-18-71			SQUARE FOOT

ns

Portland FREIGHTLINER CORPORATION Oregon 97208

B

E-183

48-01202

Materials Specification

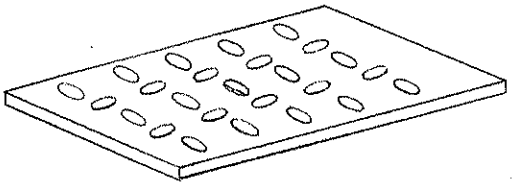
PRINT ISSUED	TITLE	PART NO.
8/13/71	TREAD PLATE, STEEL	48-01202
LAST CHG LTR. A		SHEET 1 OF 1

CHG	BY	DATE	WAS

SCOPE This specification identifies steel tread plate

APPLICATION Where traction surface is required.

SKETCH



SPECIFICATION NUMBERS

THICKNESS	FREIGHTLINER SPECIFICATION NUMBER
1/8	48-01202-000
3/16	-001
1/4	-002
5/16	-003
3/8	-004
1/2	-005
3/4	-006

CHG	BY	DATE	WAS
A	RLR	6-28-71	Added Note 1

SPECIFICATIONS

1. Mechanical Properties: Not normally published.

ns

COMPILED	RWG	DATE DRAWN			UNIT OF MEASURE
APPROVED	Rwd	5-18-71			LB.

Portland FREIGHTLINER CORPORATION Oregon 97208

48-01203

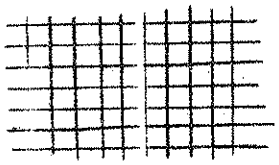
Materials Specification

PRINT ISSUED	TITLE	PART NO.
9/29/71	WIRE SCREEN, STEEL	48-01203
LAST CHG. LTR. C		SHEET 1 OF 1

SCOPE This specification identifies wire screen steel mesh.

APPLICATION Suitable for traps, guards, screens, filters, etc.

SKETCH



SPECIFICATION NUMBERS

SIZE ASTM SIEVE SIZE OR NUMBER	MESH	OPENING (INCHES)	WIRE DIAMETER RANGE	FINISH	FREIGHTLINER SPECIFICATION NUMBER
3 (1/4 in.)		.250	.063 - .083	Self-Colored	48-01203-000
3 (1/2 in.)		.223	.050 - .075		-001
4		.187	.045 - .066		-002
5		.157	.039 - .058		-003
6		.132	.034 - .052		-004
7		.111	.031 - .047		-005
8		.0937	.0291- .0433		-006
10		.0787	.0268-..0394		-007
12		.0661	.0244- .0354		-008
	6 x 6		22 ga.(.0286)	Galvanized	-101
	18 x 14		22 ga.		-102
	8 x 8		22 ga.		-103
	square 6 x 6	.44	.063 .022	Self-Colored	-200 -201

SPECIFICATIONS

1 Material: Steel Wire

2 Plain Weave

COMPILED	PLR	DATE DRAWN			UNITS OF MEASURE
APPROVED	[signature]	9-20-71			SQ. FT.

Portland FREIGHTLINER CORPORATION Oregon 97208

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
A	HJR	10-20-72	Add -103; J #71170
B	HJR	9-24-73	Add -200; J #A0526
C	HJR	5-13-74	Add -201; J #A0621

ns

E-183

48-01204

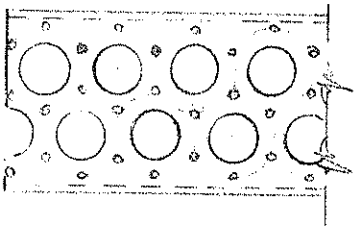
Materials Specification

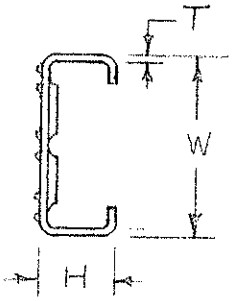
PRINT ISSUED	TITLE	PART NO.
	GRATING, OPEN BUTTON TYPE STEEL	48-01204
LAST CHG LTR.		SHEET 1 OF 1

SCOPE This specification identifies upset perforated button type anti-skid tread plate channels.

APPLICATION Safety grating for steps, catwalks, etc.

SKETCH





SPECIFICATION NUMBERS

T THICKNESS	H HEIGHT	W WIDTH	MANUFACTURER'S DESCRIPTION RJT		FREIGHTLINER SPECIFICATION NUMBERS
13 ga. (.090)	2.00	5.00	Morton "Open-Grip"		48-01204-090

SPECIFICATIONS

1. Material: Structural Steel

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
			J #78230

ns

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED	Rollins	8-28-72			SQ. FT.

Portland FREIGHTLINER CORPORATION Oregon 97208

48-01205

Materials Specification

PRINT ISSUED	TITLE	PART NO.
	SHEET, STEEL, EXPANDED METAL	48-01205
LAST CHG. LTR.		SHEET 1 OF 1

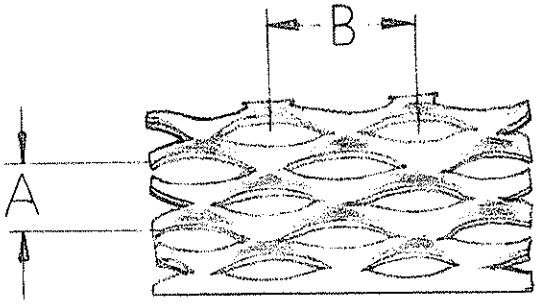
CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
-	-	-	Job #60700

SCOPE This specification identifies expanded metal, sheet steel.

APPLICATION Typical applications are for screens and guards.

SKETCH



SPECIFICATION NUMBERS

STYLE NUMBER AND GAUGE	A x B	OPENING	OVERALL THICKNESS	MFR'S DESIGNATION DUC	FREIGHTLINER SPECIFICATION NUMBER
No. 4, 16 Ga.	3.20 x 8.00	1.500 x 6.125	.118	Armorweave	48-01205-010

SPECIFICATIONS

1. Mechanical Properties: Not normally published.

COMPILED	DL	DATE DRAWN			UNIT OF MEASURE
APPROVED	Rollins	1-12-73			SQUARE FOOT

ns

Portland FREIGHTLINER CORPORATION Oregon 97208

48-1206

Materials Specification

PRINT ISSUED	TITLE	PART NO.
	SAFETY GRATING STEEL	48-1206
LAST CHG LTR		SHEET 1 OF 2

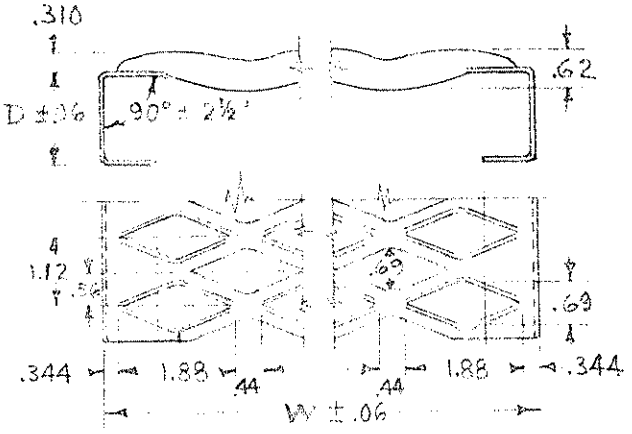
CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
—	—	—	J #A0448

SCOPE This specification identifies a serrated steel safety grating.

APPLICATION Non-skid steps.

SKETCH



SPECIFICATION NUMBERS

GAUGE	D DEPTH ± .06	W WIDTH ± .06	WT LB/FT	MANUFACTURER'S NUMBER GL		FREIGHTLINER SPECIFICATION NUMBER
.1046	1.50	4.75	3.2	21512-IS		48-01206-151
		7.00	4.1	31512-IS		-152
(12 ga)		9.50	5.0	41512-IS		-153
		11.75	5.9	51512-IS		-154
		18.75	8.5	81512-IS		-155
	2.00	4.75	3.6	22012-IS		-201
		7.00	4.5	32012-IS		-202
		9.50	5.4	42012-IS		-203
		11.75	6.2	52012-IS		-204
		18.75	8.9	82012-IS		-205
	2.50	4.75	4.0	22512-IS		-251
		7.00	4.9	32512-IS		-252
		9.50	5.7	42512-IS		-253
		11.75	6.6	52512-IS		-254
		18.75	9.2	82512-IS		-255
	3.00	7.00	5.2	33012-IS		-301
		9.50	6.1	42012-IS		-302
		11.75	7.0	53012-IS		-304
		18.75	9.6	83012-IS		-305

SPECIFICATIONS

1. Material: Steel (See table)

2. Finish: Galvanized

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

ns

Portland FREIGHTLINER CORPORATION Oregon 97208

Materials Specification

PRINT ISSUED	TITLE	PART NO.
	SAFETY GRATING STEEL	48-1206
LAST CHG LTR		SHEET 2 OF 2

ENGINEERING NOTES

1. Open area: 2 Diamond (4-3/4" Width) - 37% Open

   3 Diamond (7"Width) - 42% Open

   4 Diamond (9-1/2" Width) - 43% Open

   5 Diamond (11-3/4" Width) - 45% Open

   8 Diamond (18-3/4" Width) - 47% Open

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
—	—	—	J #A0448

ns

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

Portland FREIGHTLINER CORPORATION Oregon 97208

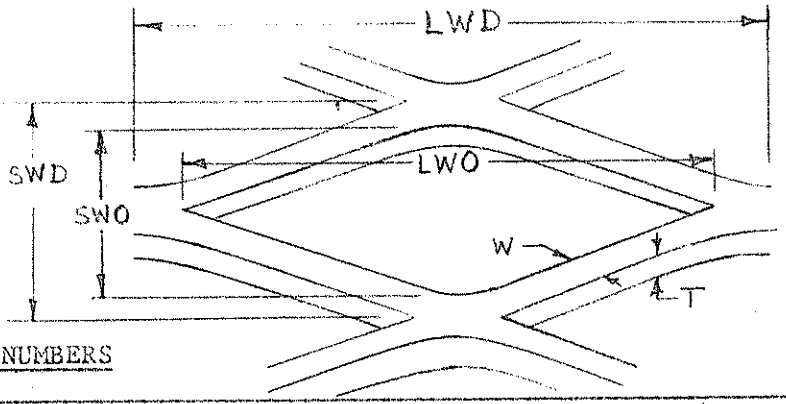
48-01207

PRINT ISSUED	TITLE	PART NO.
	GRATING, STRUCTURAL [illegible]	48-01207
LAST CHG. LTR.		SHEET 1 OF 1

SCOPE This specification identifies carbon steel structural grating.

APPLICATION Partitions, stair treads, walkways, guards, covers, etc.

SKETCH



OT = OVERALL THICKNESS

SPECIFICATION NUMBERS

SWD	LWD	SWO	LWO	W	T	OT	OPEN AREA %	(STYLE) lb/ft^2	FREIGHTLINER SPECIFICATION NUMBER
1.33	5.33	.940	3.44	.264	.183	.540	60	3.0	48-01207-300

SPECIFICATIONS

1. MATERIAL: Structural Steel per Mfr's Specs.
2. FINISH: Red oxide primed.

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
—	—	—	J#A0537

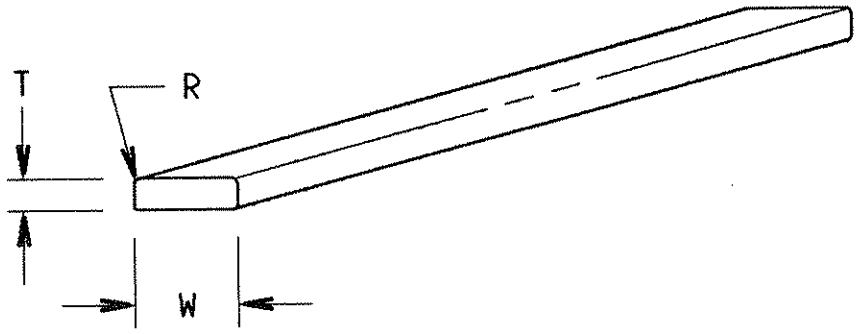
COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED	Rollins	10-29-73			SQ. FT.

ORIGINAL JOB NO.	TITLE	PART NO.
2844C	STRIP, SPRING STEEL	48-01226
LAST CHG LTR: H		SHEET 1 OF 1

SCOPE: THIS SPECIFICATION IDENTIFIES CARBON STEEL SPRING STRIP.

APPLICATION: ESPECIALLY FOR ENGINE DIP STICK BLADES; ALSO, GENERAL USE.

SKETCH:



SPECIFICATION NUMBERS:

T THICKNESS GA	T THICKNESS INCHES	W WIDTH	R RADIUS	HARDNESS, ROCKWELL (APPROX)	FREIGHTLINER SPECIFICATION NUMBER
	.015	.19	.007	C28-C42	48-01226-103
	.020	.19	.007	C28-C42	-203
	.025	.25	.010-.020	C28-C42	-204
	.025	1.00	.010-.020	C28-C42	-216
	.025	1.00	.010-.020	ANNEALED	-016
	.032	.25	.010-.020	C28-C42	-304
	.035	.44		C28-C42	-407
	.042	.62			-410
	.062	.25		C28-C42	-604
	.062	.50		C28-C42	-608
	.062	1.00		C28-C42	-616
16	.0598	1.50	OPTIONAL	ANNEALED	-624

SPECIFICATIONS:

1. MATERIAL: A.I.S.I.-C1095.

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION
H	2844C	FEF	05-15-84	REVISED & REDRAWN

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION

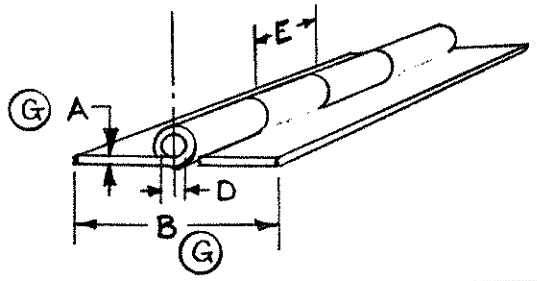
COMPILED	FEF	DATE DRAWN	CADAM ORIGINAL	UNIT OF MEASURE	MASTER NUMBER	
APPROVED		05-15-84		FT	00001	000D1

48-01227

Materials Specification

ORIGINAL JOB NO.	TITLE	PART NO.
61656	HINGE, BUTT STEEL	48-01227
LAST CHG LTR H		SHEET 1 OF 1

SCOPE This specification identifies steel butt hinge.
APPLICATION Medium duty hinge for light doors, panels, etc.
SKETCH



PART NUMBERS

A GAUGE	B WIDTH	PIN D DIAM.	PIN MAT'L (1)	E (H)	MANUFACTURER'S NUMBER HDB	WMG	MCM		FREIGHTLINER SPECIFICATION NUMBER
.060	1.50	.125	S	.50	S-7755-S	X			48-01227-001
.050	2.00	.250	S	1.00	X				-002
.075	2.00	.250	S	1.00	S-9875-S				-003
.075	3.50	.250	B	1.00	S-12875-B				-004
.035	1.50	.095	S	.50	S-7332-S	X			-005
.075	2.00	.250	B	2.00	S-9878-B				-006
.075	3.50	.250	N	1.00	X				-007
.125	4.00	.375	S	1.00	S-13985-S		1583A26		-008
.075	5.00	.125	B	1.00	X				-009

X = Order by description.

SPECIFICATIONS

(1) MATERIAL: Leaves, 1010-1020 Steel
Pin: B = Brass, S = Steel, N = Nylon
2. Swaging of leaves: None.
3. Finish: Plain

COMPILED	HJR	DATE DRAWN		MATERIAL (1)	
APPROVED		8-27-76			

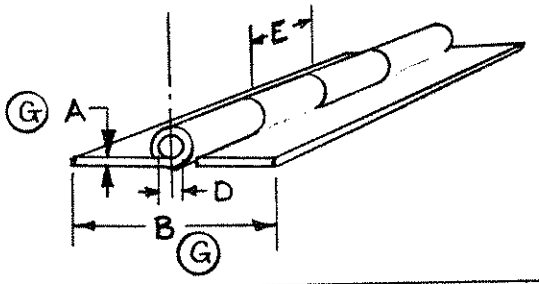
LTR	JOB NO.	BY	DATE	CHANGE INFORMATION
F	61656	HJR	8-27-76	Rev'd, Redrawn
G	65463	JK	12-20-77	T & W TO A & B
H	0858B	NR	2-11-83	FROM 1.00 TO .50

LTR	JOB NO.	BY	DATE	CHANGE INFORMATION

Materials Specification

ORIGINAL JOB NO.	TITLE	PART NO.
61656	HINGE, BUTT STEEL	48-01227
LAST CHG LTR H		SHEET 1 OF 1

SCOPE This specification identifies steel butt hinge.
APPLICATION Medium duty hinge for light doors, panels, etc.
SKETCH



PART NUMBERS

A GAUGE	B WIDTH	PIN D DIAM.	PIN MAT'L (1)	E (H)	MANUFACTURER'S NUMBER HDB	WMG	MCM		FREIGHTLINER SPECIFICATION NUMBER
.060	1.50	.125	S	.50	S-7755-S	X			48-01227-001
.050	2.00	.250	S	1.00	X				-002
.075	2.00	.250	S	1.00	S-9875-S				-003
.075	3.50	.250	B	1.00	S-12875-B				-004
.035	1.50	.095	S	.50	S-7332-S	X			-005
.075	2.00	.250	B	2.00	S-9878-B				-006
.075	3.50	.250	N	1.00	X				-007
.125	4.00	.375	S	1.00	S-13985-S		1583A26		-008
.075	5.00	.125	B	1.00	X				-009

X = Order by description.

SPECIFICATIONS

(1) MATERIAL: Leaves, 1010-1020 Steel
Pin: B = Brass, S = Steel, N = Nylon
2. Swaging of leaves: None.
3. Finish: Plain

COMPILED	HJR	DATE DRAWN		MATERIAL	
APPROVED		8-27-76		(1)	

CHANGE INFORMATION

LTR	JOB NO.	BY	DATE	

CHANGE INFORMATION

LTR	JOB NO.	BY	DATE	
F	61656	HJR	8-27-76	Rev'd, Redrawn
G	65463	JK	12-20-77	T & W TO A & B
H	0858B	NR	2-11-83	FROM 1.00 TO .50

48-01228

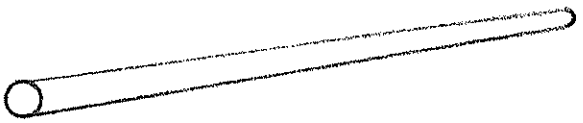
Materials Specification

PRINT ISSUED	TITLE	PART NO.
10/13/71	WIRE, ROUND STEEL	48-01228
LAST CHG. LTR		SHEET 1 OF 1

SCOPE This specification describes low carbon steel extruded round wire.

APPLICATION General use structural, functional and decorative uses.

SKETCH



SPECIFICATION NUMBERS

AWG GA (DIAM)	FREIGHTLINER SPECIFICATION NO. 48-01228-*			
	BRIGHT	BLACK	GALV	ALUM'D
3/8 (.3750)	-038	-138	-238	-338
000 (.3625)	-036	-136	-236	-336
00 (.3310)	-033	-133	-233	-333
1/4 (.2500)	-025	-125	-225	-325
4 (.2253)	-022	-122	-222	-322
5 (.2070)	-021	-121	-221	-321
6 (.1920)	-019	-119	-219	-319
7 (.1770)	-018	-118	-218	-318
8 (.1620)	-016	-116	-216	-316
9 (.1483)	-015	-115	-215	-315
10 (.1350)	-014	-114	-214	-314
11 (.1205)	-012	-112	-212	-312
12 (.1055)	-010	-110	-210	-310
13 (.0915)	-009	-109	-209	-309
14 (.0800)	-008	-108	-208	-308
15 (.0720)	-007	-107	-207	-307
16 (.0625)	-006	-106	-206	-306
17 (.0540)	-005	-105	-205	-305
18 (.0475)	-004	-104	-204	-304

*Complete the specification number by adding a three-digit dash number as follows:

First Digit: 0 = Bright basic steel wire
1 = Black soft annealed AISI 1008
2 = Soft Galvanized Basic Steel Wire
3 = Aluminized

Last two digits express thickness in hundredths of an inch.
Example: 12 ga. Bright wire is written 48-01228-010.

SPECIFICATIONS

1. Material: Low Carbon Steel

2. Finish: -0XX = Bright, -1XX = Black Annealed, -2XX = Galvanized
-3XX = Aluminized

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

Portland FREIGHTLINER CORPORATION Oregon 97208

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS

ns

48-01229

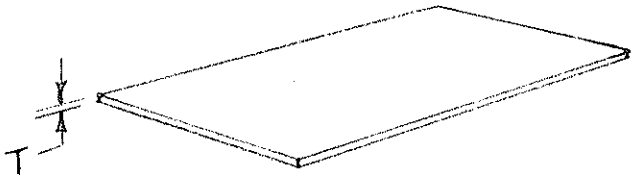
Materials Specification

PRINT ISSUED	TITLE	PART NO.
11/5/71	SHIM STOCK MILD STEEL	48-01229
LAST CHG. LTR.		SHEET 1 OF 1

SCOPE This specification describes solid flat mild steel sheet accurately sized as to thickness.

APPLICATION Accurate spacing of two machined surfaces.

SKETCH



SPECIFICATION NUMBERS

T INCHES	FREIGHTLINER SPECIFICATION NUMBER
.001	48-01229-010
.0015	-015
.002	-020
.003	-030
.004	-040
.005	-050
.006	-060
.007	-070
.008	-080
.009	-090
.010	-100
.012	-120
.015	-150
.020	-200
.025	-250
.032	-320

SPECIFICATIONS

1. Material: Low Carbon Steel
2. Finish: Flat, smooth, and with only residual manufacturing lubricant.

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS

ns

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

Portland FREIGHTLINER CORPORATION Oregon 97208

48-01231

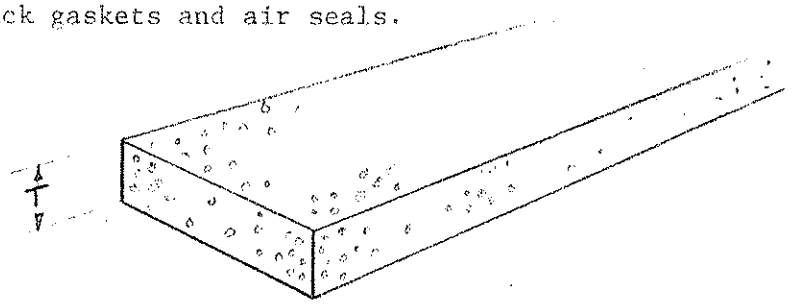
Materials Specification

PRINT ISSUED		TITLE	PART NO.
		EXPANDED CELLULAR-RUBBER STOCK (SHEET OR BLOCK)	48-01231
LAST CHG. LTR.	B		SHEET 1 OF 1

SCOPE This specification describes expanded cellular-rubber sheet or block.

APPLICATION Thick gaskets and air seals.

SKETCH



SPECIFICATION NUMBERS

T THICKNESS		MATERIAL (1) SAE J18		FREIGHTLINER SPECIFICATION NUMBERS
.38				-038
.50		SCE 41		48-01231-050
2.00				-200

SPECIFICATIONS

(1) Material: (See table)

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

Portland FREIGHTLINER CORPORATION Oregon 97208

CHG	BY	DATE	WAS
B			
A			

CHG	BY	DATE	WAS
—	—	—	J #84780
A	HJR	7-7-72	Add -050; J #73040
B	DL	2-7-74	Add - 038; J#A0567

ns

E-183

MF 4

48-01232

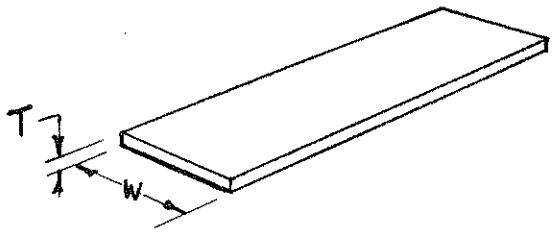
Materials Specification

PRINT ISSUED		TITLE	PART NO.
		STRIP, STAINLESS SPRING STEEL SAE 30302	48-01232
LAST CHG. LTR.	B		SHEET 1 OF 1

SCOPE This specification identifies SAE 30302 high nickel-chromium austenitic (not thermally hardenable) steel strips.

APPLICATION General purpose corrosion and heat resistant stainless spring steel with good forming properties.

SKETCH



SPECIFICATION NUMBERS

T THICKNESS (IN.)	W WIDTH (IN.)		FREIGHTLINER SPECIFICATION NUMBERS *
.025	.50		48-01232-208
.035	.38		48-01232-306

*Dash Number: First digit is thickness in hundredths of an inch; final two digits express width in sixteenths of an inch.

SPECIFICATIONS

1. Material: SAE 30302 Chromium Nickel Austenitic Stainless Steel. Full hard Rc 40 (min)
   ALT: SAE 30301 chromium nickel austenitic stainless steel. Full hard Rc 40 (min).

2. FINISH: Mill finish as slit.

CHG	BY	DATE	WAS
B			

CHG	BY	DATE	WAS
—	—	—	J #85640
A	TR	7-12-79	Revised Note 1
B	RP	9-9-80	Added 48-01232-306

76038 E0530

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED	Rollins	5-26-72			FT.

Portland FREIGHTLINER CORPORATION Oregon 97208

E-183

ns

48-1233

Materials Specification

PRINT ISSUED	TITLE	PART NO.
	WIRE, STAINLESS STEEL	48-1233
LAST CHG. LTR.		SHEET 1 OF 1

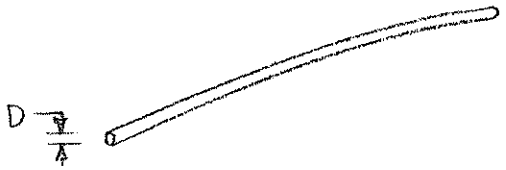
WAS

CHG	BY	DATE

SCOPE This specification identifies type 302 stainless steel wire

APPLICATION Wire staple stitching of upholstery, etc.

SKETCH



SPECIFICATION NUMBERS

D DIA. (INCHES)		MANUFACTURER'S NUMBER BTH		FREIGHTLINER SPECIFICATION NUMBER
.0475		*		48-01233-048

*Order by description; "Finish 244"

WAS J #AU516

CHG	BY	DATE

SPECIFICATIONS

1. Material: Type 302 stainless steel
2. Finish: Smooth, as drawn

COMPILED	H.J.R.	DATE DRAWN			UNIT OF MEASURE
APPROVED	Rollins	8-21-73			FT.

Portland FREIGHTLINER CORPORATION Oregon 97208

48-01276

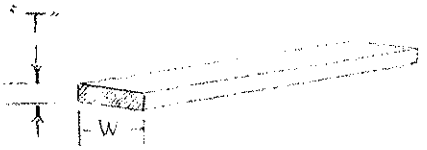
Materials Specification

PRINT ISSUED	TITLE	PART NO.
8/20/71	RECTANGULAR BAR, COPPER, ALLOY 110	48-01276
LAST CHG LTR		SHEET 1 OF 3

SCOPE This specification identifies rectangular copper bar.

APPLICATION High thermal and electrical conductivity. Readily bent, soldered, drilled, peened, riveted, and formed.

SKETCH



SPECIFICATION NUMBERS

THICK. "T"	WIDTH "W"	FREIGHTLINER SPECIFICATION NUMBER
1/16	1/2	48-01276-000
	3/4	-001
	1	-002
	1-1/2	-003
	1-3/4	-004
3/32	5/8	-005
	3/4	-006
	1	-007
	1-1/4	-008
	1-1/2	-009
1/8	1/4	-010
	3/8	-011
	1/2	-012
	5/8	-013
	3/4	-014
	7/8	-015
	1	-016
	1-1/8	-017
	1-1/4	-018
	1-1/2	-019
	1-3/4	-020
	2	-021
	2-1/2	-022
	3	-023
	4	-024
	6	-025
5/32	5/8	-026
	3/4	-027
3/16	1/2	48-01276-028
	5/8	-029
	3/4	-030
	7/8	-031
	1	-032
	1-1/4	-033
	1-1/2	-034
	1-3/4	-035
	2	-036
	2-1/4	-037
	2-1/2	-038
	3	-039
	4	-040
	6	-041
.240/.245	4	-042
	6	-043
1/4	3/8	-044
	1/2	-045
	5/8	-046
	3/4	-047
	7/8	-048
	1	-049
	1-1/4	-050
	1-1/2	-051
	1-3/4	-052
	2	-053
	2-1/4	-054
	2-1/2	-055
	3	-056
	3-1/4	-057
1/4	3-1/2	48-01276-058
	4	-059
	5	-060
	6	-061
	8	-062
5/16	5/8	-063
	3/4	-064
	1	-065
	1-1/4	-066
	1-1/2	-067
	2	-068
3/8	1/2	-069
	5/8	-070
	3/4	-071
	1	-072
	1-1/4	-073
	1-3/8	-074
	1-1/2	-075
	1-3/4	-076
	2	-077
	2-1/4	-078
	2-1/2	-079
	3	-080
	3-1/2	-081
	4	-082
	5	-083
	6	-084
	8	-085
	12	-086

WAS	DATE	BY	CHG

WAS	DATE	BY	CHG

COMPILED	R.L.R.	DATE DRAWN			UNIT OF MEASURE
APPROVED					LB

Portland FREIGHTLINER CORPORATION Oregon 97208

Materials Specification

PRINT ISSUED	TITLE	PART NO
8/20/71	RECTANGULAR BAR, COPPER, ALLOY 110	48-01276
LAST CHG LTR.		SHEET 2 OF 3

SPECIFICATION NUMBERS (Cont.)

THICK. T	WIDTH W	FREIGHTLINER SPECIFICATION NUMBER
1/2	5/8	48-01276-087
	3/4	-088
	1	-089
	1-1/4	-090
	1-1/2	-091
	1-3/4	-092
	2	-093
	2-1/4	-094
	2-1/2	-095
	3	-096
	3-1/2	-097
	4	-098
	5	-099
	6	-100
	8	-101
	12	-102
5/8	1	-103
	1-1/4	-104
	1-1/2	-105
	2	-106
	2-1/2	-107
	3	-108
	4	-109
3/4	1	-110
	1-1/4	-111
	1-1/2	-112
	1-5/8	-113
	1-3/4	-114
	2	-115
	2-1/4	-116
	2-1/2	-117
	3	-118
	3-1/2	-119
	4	-120
	5	-121
	6	-122
	7	-123
	8	-124
	12	-125
7/8	1-3/4	-126
	4	-127
1	1-1/4	48-01276-128
	1-1/2	-129
	1-3/4	-130
	2	-131
	2-1/4	-132
	2-1/2	-133
	3	-134
	3-1/2	-135
	4	-136
	5	-137
	6	-138
	7	-139
	8	-140
	9	-141
	10	-142
	12	-143
1-1/4	1-3/4	-144
	1-1/2	-145
	1-3/4	-146
	2	-147
	2-1/4	-148
	2-1/2	-149
	3	-150
	3-1/2	-151
	4	-152
	4-1/2	-153
	5	-154
	6	-155
	8	-156
	10	-157
	12	-158
1-3/8	2	-159
1-1/2	1-3/4	-160
	2	-161
	2-1/2	-162
	3	-163
	3-1/2	-164
	4	-165
	5	-166
	5-1/2	-167
	6	-168
	8	-169
	10	-170
	12	-171
1-3/4	2	-172
	2-1/2	-173
	3	-174
	12	-175
2	2-1/2	-176
	3	-177
	3-1/2	-178
	4	-179
	5	-180
	6	-181
	8	-182
	10	-183
	12	-184
	14	-185
2-1/4	6	-186
2-1/2	3	-187
	3-1/2	-188
	4	-189
	5	-190
	6	-191
	10	-192
	12	-193
2-3/4	3-1/2	-194
	5	-195
3	3-1/2	-196
	4	-197
	4-1/2	-198
	5	-199
	6	-200
	10	-201
	12	-202
3-1/2	4-1/4	-203
	6	-204
	10	-205
	12	-206
4	5	-207
	10	-208
	12	-209

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS

ns

COMPILED	RLR	DATE DRAWN			UNIT OF MEASURE
APPROVED		8-2-71			LB.

Portland FREIGHTLINER CORPORATION Oregon 97208

48-01276

Materials Specification

PRINT ISSUED	TITLE	PART NO.
8/25/71	RECTANGULAR BAR, COPPER, ALLOY 110	48-01276
LAST CHG LTR		SHEET 3 OF 3

WAS

CHG	BY	DATE

WAS

CHG	BY	DATE

SPECIFICATIONS

1. Material: SAE Alloy CA110

2. Mechanical Properties:

	TYPICAL PROPERTIES		
	TENSILE ULT. KSI	YIELD KSI	ELONGATION % IN 2 INCHES
HARD	48	40	15
SOFT	32	10	50

ns

		DATE DRAWN			UNIT OF MEASURE
COMPILED	RLR	8-2-71			LB.
APPROVED					

Portland FREIGHTLINER CORPORATION Oregon 97208

E-183

48-1277

Materials Specification

PRINT ISSUED	TITLE	PART NO.
8/13/71	SHEET, COPPER, SOFT, ALLOY 110	48-1277
LAST CHG LTR		SHEET 1 OF 1

WAS | DATE | BY | CHG

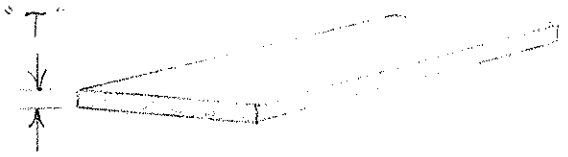
SCOPE

This specification identifies soft copper sheet.

APPLICATION

Good corrosion resistance, electrical conductivity, and thermal conductivity. Good ductility and ease of soldering.

SKETCH



SPECIFICATION NUMBERS

THICKNESS "T"	FREIGHTLINER SPECIFICATION NUMBER
.0162	48-1277-000
.0189	-001
.0216	-002
.0243	-003
.0270	-004
.0323	-005
.0431	-006
.051	-007
.0539	-008
.0647	-009
.0937	-010
.125	-011

WAS | DATE | BY | CHG

SPECIFICATIONS

1. Material: SAE alloy CA110
2. Mechanical Properties:

TYPICAL PROPERTIES		
TENSILE ULT. K.S.I.	YIELD K.S.I.	ELONGATION % IN 2 INCHES
33	10	45

COMPILED	RLR	DATE DRAWN			UNIT OF MEASURE
APPROVED		7-28-71			LB.

48-1278

Materials Specification

PRINT ISSUED	TITLE	PART NO.
8/13/71	PLATE, COPPER, COLD ROLLED TEMPER	48-1278
LAST CHG LTR		SHEET 1 OF 1

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS

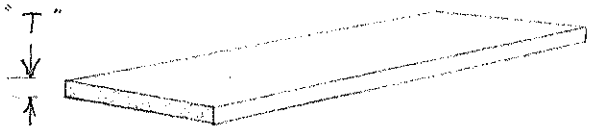
SCOPE

This specification identifies cold rolled temper copper plate.

APPLICATION

Good corrosion resistance, electrical conductivity and thermal conductivity. Good ductility and ease of soldering.

SKETCH



SPECIFICATION NUMBERS

THICKNESS "T"	FREIGHTLINER SPECIFICATION NUMBER
3/16	48-1278-000
1/4	-001
3/8	-002
1/2	-003
5/8	-004
3/4	-005
1	-006
1-1/4	-007
1-3/8	-008
1-1/2	-009
1-3/4	-010
2	-011
2-1/4	-012
2-1/2	-013
3	-014
3-1/2	-015
4	-016
5	-017

SPECIFICATIONS

1. Material: SAE alloy CA110
2. Mechanical Properties:

	TYPICAL PROPERTIES		
	TENSILE ULT. K.S.I.	YIELD K.S.I.	ELONGATION % IN 2 INCHES
HARD	48	40	15
SOFT	32	10	50

COMPILED	RLR	DATE DRAWN			UNIT OF MEASURE
APPROVED	[signature]	7-28-71			LB.

ADRIENNE CHILBERG

DRAWN	RLR	TITLE	DRAWING NUMBER	
APPRV	RLR	ROUND BAR-BRASS FREE-CUTTING, ALLOY 360	48-01376	
DATE	08/05/71	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1	CHG. LTR. A
CATIA ORIGINAL				

SCOPE: THIS SPECIFICATION IDENTIFIES FREE-CUTTING BRASS ROUND BAR.

APPLIATION: FOR GENERAL HIGH SPEED SCREW MACHINE WORK. CORROSION RESISTANT FINISHES WITH A SMOOTH SURFACE, AND IS EXCELLENT FOR PLATING.

SIZE	FREIGHTLINER SPEC NUMBER
1/4	48-01376-012
3/8	48-01376-020
1/2	48-01376-028
1-3/16	48-01376-062

SPECIFICATIONS:

1. MATERIAL: NOMINAL CHEMICAL COMPOSITION, CU-61.5%, ZN-35.25%, Pb-3/25%. MEETS ASTM SPECIFICATION B-16

2. MECHANICAL PROPERTIES: (TYPICAL)

TENSILE ULT. (ksi)	YIELD (ksi)	ELONGATION (%) IN 2 INCHES
58	42	20

CHG	JOB NO	DATE	BY	REVISION
A	PA2103-K3	04/08/97	DAJ	REVISED AND REDRAWN IN CATIA, ADDED -062.

48-01377

Materials Specification

PRINT ISSUED	TITLE	PART NO.
8/20/71	HEX BAR, BRASS, FREE-CUTTING, ALLOY 360	48-01377
LAST CHG LTR		SHEET 1 OF

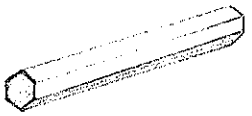
CHG	BY	DATE	WAS

CHG	BY	DATE	WAS

SCOPE This specification identifies free-cutting brass hex bar.

APPLICATION For general high speed screw machine work. Corrosion resistant, finishes with a smooth surface, and is excellent for plating.

SKETCH



SPECIFICATION NUMBERS

SIZE	FREIGHTLINER SPECIFICATION NUMBER
1/16	48-01377-000
3/32	-001
1/8	-002
5/32	-003
3/16	-004
7/32	-005
1/4	-006
9/32	-007
5/16	-008
11/32	-009
3/8	-010
13/32	-011
7/16	-012
15/32	-013
1/2	-014
9/16	-015
19/32	-016
5/8	-017

SIZE	FREIGHTLINER SPECIFICATION NUMBER
11/16	47-01377-018
3/4	-019
13/16	-020
7/8	-021
15/16	-022
1	-023
1- 1/16	-024
1- 1/8	-025
1- 3/16	-026
1- 1/4	-027
1- 5/16	-028
1- 3/8	-029
1- 7/16	-030
1- 1/2	-031
1- 9/16	-032
1- 5/8	-033
1-11/16	-034
1- 3/4	-035

SIZE	FREIGHTLINER SPECIFICATION NUMBER
1-13/16	48-01377-036
1- 7/8	-037
1-15/16	-038
2	-039
2- 1/8	-040
2- 1/4	-041
2- 3/8	-042
2- 1/2	-043
2- 5/8	-044
2- 3/4	-045
2- 7/8	-046
3	-047
3- 1/8	-048
3- 1/4	-049
3- 1/2	-050
3- 3/4	-051
4	-052

*Size measured across flats

SPECIFICATIONS

1. Material: Nominal Chemical Composition Cu - 61.5%, Zn - 35.25%, Pb - 3.25%
2. Mechanical Properties:

TYPICAL PROPERTIES		
TENSILE ULT. KSI	YIELD KSI	ELONGATION % IN 2 INCHES
58	42	20

ns

COMPILED	RLR	DATE DRAWN		MATERIAL	UNIT OF MEASURE
APPROVED		8-5-71			LB.

48-01378

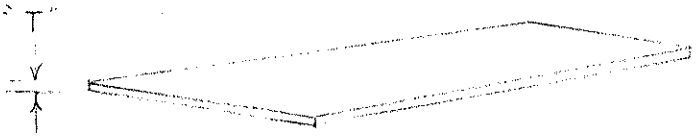
Materials Specification

PRINT ISSUED	TITLE	PART NO.
8/20/71	SHEET, BRASS	48-01378
LAST CHG LTR		SHEET 1 OF 1

SCOPE This specification identifies sheet brass.

APPLICATION Excellent tensile strength and very ductile. It can be severely cold worked, drawn, spun, rolled, stamped, flared, and is well suited for all fabrication processes.

SKETCH



SPECIFICATION NUMBERS

THICKNESS "T"		FREIGHTLINER SPECIFICATION NUMBER
INCHES	FRACTION OR B&S GAUGE	
.001	50 ga.	48-01378-000
.0015	46 ga.	-001
.002	44 ga.	-002
.003	40 ga.	-003
.004	38 ga.	-004
.005	36 ga.	-005
.006	34 ga.	-006
.007	33 ga.	-007
.008	32 ga.	-008
.010	30 ga.	-009
.0126	28 ga.	-010
.0159	26 ga.	-011
.0179	25 ga.	-012
.0201	24 ga.	-013
.0253	22 ga.	-014
.0285	21 ga.	-015
.032	20 ga.	-016

THICKNESS "T"		FREIGHTLINER SPECIFICATION NUMBER
INCHES	FRACTION OR B&S GAUGE	
.036	19 ga.	48-01378-017
.0403	18 ga.	-018
.0453	17 ga.	-019
.0508	16 ga.	-020
.0571	15 ga.	-021
.0625	1/16	-022
.0641	14 ga.	-023
.072	13 ga.	-024
.0808	12 ga.	-025
.093	3/32	-026
.1019	10 ga.	-027
.1144	9 ga.	-028
.125	1/8	-029
.156	5/32	-030
.1875	3/16	-031
.218	7/32	-032
.250	1/4	-033

SPECIFICATIONS

1. Material: SAE alloy CA260. Available in various lengths and widths in soft, quarter hard, half hard, full hard, and spring tempers.

WAS	CHG	BY	DATE

WAS	CHG	BY	DATE

ns

COMPILED	RLR	DATE DRAWN			UNIT OF MEASURE
APPROVED		8-5-71			LB.

Portland FREIGHTLINER CORPORATION Oregon 97208

48-01576

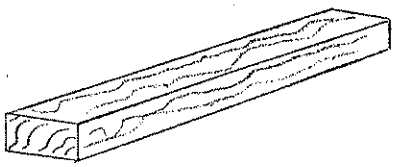
Materials Specification

PRINT ISSUED	TITLE	PART NO.
9/29/71	FIR KILN DRIED	48-01576
LAST CHG. LTR. A		SHEET 1 OF 1

SCOPE This specification identifies Kiln Dried Fir timber products.

APPLICATION Typical application would be chock blocks.

SKETCH



SPECIFICATION NUMBERS

SIZE	GRADE		FREIGHTLINER SPECIFICATION NUMBER
6 x 6	A		48-01576-006
A 4 x 8	A		-408

SPECIFICATIONS

1. Material: Western Fir.
2. Finish: Surfaced four sides.

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
A	HJR	12-3-73	Add -408; J#A0543

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

Portland FREIGHTLINER CORPORATION Oregon 97208

MTE A

48-01577

Materials Specification

PRINT ISSUED	TITLE	PART NO.
	PLYWOOD, FIR GRADE C-D	48-01577
LAST CHG. LTR.		SHEET 1 OF 1

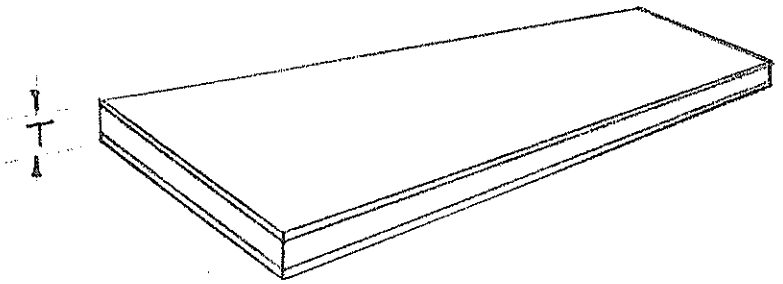
CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
	—	—	J #84360

SCOPE This specification identifies an engineered grade of exterior plywood, strength equivalent to fir, face veneer may have knotholes to 1", occasional knotholes ½" larger permitted under certain conditions, limited splits permitted and minimum veneer permitted.

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

SKETCH



SPECIFICATION NUMBERS

THICKNESS INCHES (NOM.)	FREIGHTLINER SPECIFICATION NUMBERS *
5/16	48-01577-005
3/8	-006
1/2	-008
5/8	-010
3/4	-012

*Dash number is thickness in 1/16 inches.

SPECIFICATIONS

1. Material: Exterior type CD grade, Fir Plywood
2. Must meet applicable provisions of Product Standard PS 1-66 of the American Plywood Association.
3. Sheets will be marked "C-D PLUGGED EXT-DFPA GROUP 1."

ns

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

Portland FREIGHTLINER CORPORATION Oregon 97208

48-01578

Materials Specification

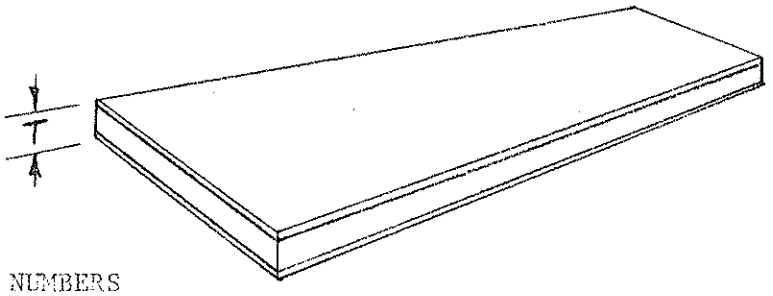
PRINT ISSUED	TITLE	PART NO.
	PLYWOOD, FIR GRADE B-C	48-01578
LAST CHG. LTR		SHEET 1 OF 1

CHG	BY	DATE	WAS

SCOPE This specification describes appearance grade exterior plywood; front solid surface veneer, circular repair plugs and tight knots permitted; back side with knots and knotholes to 2½" in width and ½" larger under certain specified limits, and limited splits permitted.

APPLICATION For exterior utility panel for truck linings, containers, etc.

SKETCH



SPECIFICATION NUMBERS

THICKNESS INCHES (NOM.)		FREIGHTLINER SPECIFICATION NUMBERS *
1/4		48-01578-004
3/8		-006
1/2		-008
5/8		-010
3/4		-012

*Dash number is thickness in 1/16 inches.

CHG	BY	DATE	WAS
—	—	—	J #84390

SPECIFICATIONS

1. Material: Exterior type B-C Group 3 appearance grade plywood.
2. Must meet applicable provisions of Product Standard PS 1-66 of the American Plywood Association.
3. Sheets will be marked B-C EXT-DFPA as mill identification.

ns

COMPILED	hjr	DATE DRAWN			UNIT OF MEASURE
APPROVED	Rollins	1-27-72			SQ. FT.

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48-01579

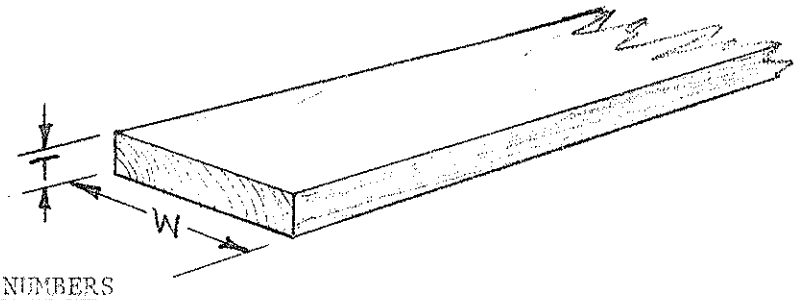
Materials Specification

PRINT ISSUED	TITLE	PART NO.
	LUMBER, #2 COMMON DRESSED FIR	48-01579
LAST CHG LTR		SHEET 1 OF 1

SCOPE This specification describes #2 Common Dressed Fir Lumber in commercial standard sizes.

APPLICATION General use construction.

SKETCH



SPECIFICATION NUMBERS

NOMINAL SIZE	FINISHED SIZE (INCHES) T x W		FREIGHTLINER SPECIFICATION NUMBER
1 x 4	3/4 x 3-5/8		48-01579-816

SPECIFICATIONS

1 Material: Coast Fir, #2 Grade or better

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
~	~	~	Job #84760

ns

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED	Rollins	1-25-72			FT.

Portland FREIGHTLINER CORPORATION Oregon 97208

48-01580

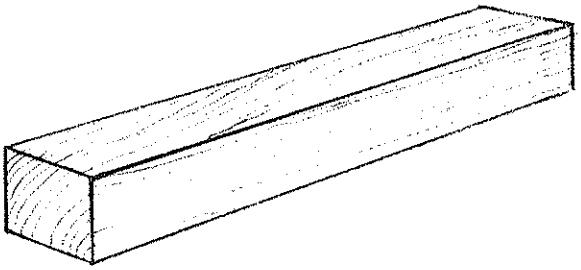
Materials Specification

PRINT ISSUED	TITLE	PART NO.
	PINE UTILITY GRADE, FINISHED	48-01580
LAST CHG. LTR.		SHEET 1 OF 1

SCOPE This specification describes finished pine lumber of utility grade.

APPLICATION General use construction, as for contour block for sleeper crossover duct.

SKETCH



SPECIFICATION NUMBERS

NOMINAL SIZE (IN.)	ACTUAL SIZE (IN.)		FREIGHTLINER SPECIFICATION NUMBERS
2 x 2	1-5/8 x 1-5/8		48-01580-002

SPECIFICATIONS

1. Material: Utility Grade Pine

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
—	—	—	J #85130

ns

		DATE DRAWN			UNIT OF MEASURE
COMPILED	HJR	2-17-72			FT.
APPROVED	Rollins				

Portland FREIGHTLINER CORPORATION Oregon 97208

E-183

48-01581

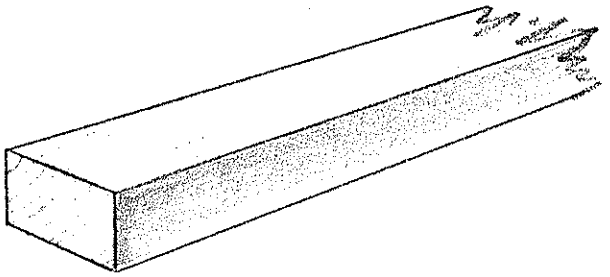
Materials Specification

PRINT ISSUED	TITLE	PART NO.
	LUMBER, STRUCTURAL GRADE (FIR)	48-01581
LAST CHG. LTR.		SHEET 1 OF 1

SCOPE This specification describes commercial structural grade lumber.

APPLICATION General use, especially spare wheel support, etc.

SKETCH



SPECIFICATION NUMBERS

NOM. SIZE	FREIGHTLINER SPECIFICATION NUMBERS
2 x 4	48-01581-000

SPECIFICATIONS

1. Material: Ordinary structural grade fir lumber.

CHG	BY	DATE	WAS

CHG	BY	DATE	WAS
			Job #89640

ns

COMPILED	HJR	DATE DRAWN			UNIT OF MEASURE
APPROVED	GMA	3-14-72			FT.

Portland FREIGHTLINER CORPORATION Oregon 97208

E-183

ADRIENNE CHILBERG

DRAWN	DAJ	TITLE	DRAWING NUMBER	
APPRV	DAJ	PLYWOOD INTERIOR, C-D PLUGGED	48-01582	
DATE	08/15/97	FREIGHTLINER CORPORATION PORTLAND, OREGON	SHEET 1 OF 1	CHG. LTR. B
CATIA ORIGINAL				

SCOPE: THIS SPECIFICATION DESCRIBES INTERIOR TYPE PLYWOOD, STRENGTH EQUIVALENT TO DOUGLAS FIR, FAIRLY GOOD SURFACE BUT SOME REPAIRED BLEMISHES AND SOME SURFACE ROUGHNESS.

APPLICATION: GENERAL CONSTRUCTION, BUT FOR SERVICE IN LOCATIONS NOT EXPOSED TO WEATHER.

THICKNESS "T" IN INCHES (NOM)	FREIGHTLINER SPECIFICATION NUMBERS
3/4	48-01582-012

* DASH NUMBER IS THICKNESS IN 1/16 INCHES.

SPECIFICATIONS:

1. MATERIAL: INTERIOR TYPE C-D PLUGGED DFPA (4)

CHG	JOB NO	DATE	BY	REVISION
B	PA2042-78	08/15/97	DAJ	PART NUMBER CALL-OUT WAS 48-02114-012.