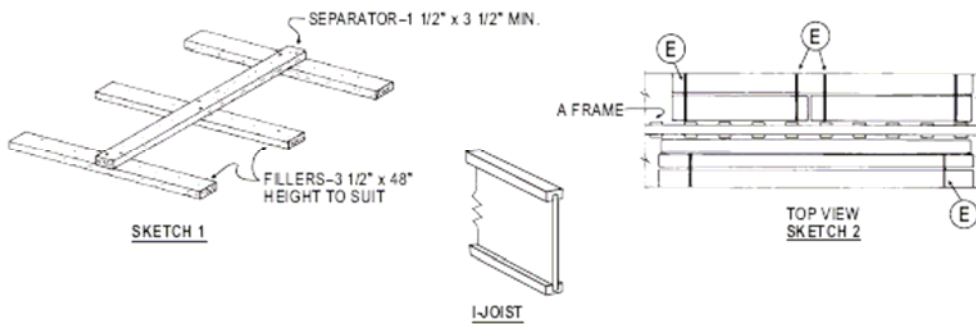
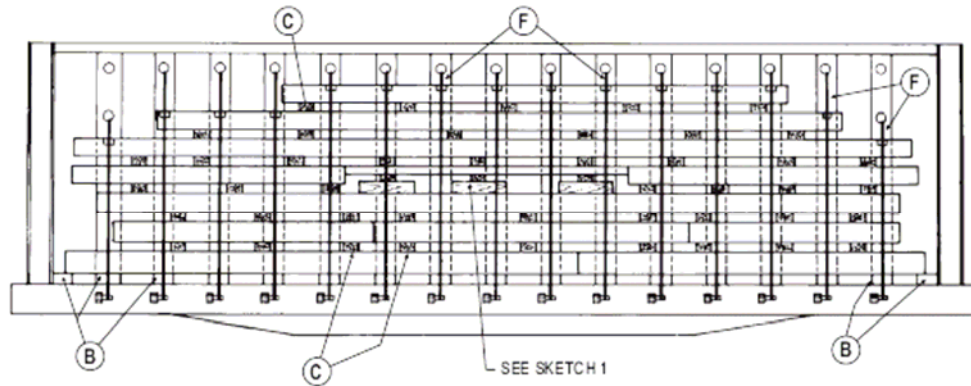


AAR Open Top Loading Rules Manual

Fig. 113 (Rev. 12/07)
New 09/96)

ENGINEERED-WOOD PRODUCTS, LVL, PSL, AND LSL STRUCTURAL BEAMS AND I-JOISTS,
PACKAGED—CENTER A-FRAME FLATCARS, WITH CABLE TIE-DOWNS



Item	No. of Pcs.	Description
A	Vacant.	
B	2 per package.	Bearing pieces: cars are equipped with permanent floor bearing pieces wedged at 90° to A-frame.
Alternate Item B—For cars not equipped with permanent bearing pieces		
Alt B	Minimum 2 per package 8 ft long or less. Add 1 for each additional 4 ft.	Bearing pieces: lumber, 1 1/2 in. x 3 1/2 in. minimum, of one piece and preferably rough. Width must be at least 1 in. greater than height and the length equal to width of bottom package. Laminated material may be used if AAR approved. Locate approximately 18 in. from each end of package with remaining pieces equally spaced.
C	2 per package 16 ft long. Add 1 for each 10 ft or less.	Separators: lumber, 1 1/2 in. x 3 1/2 in. minimum. Width to be 1 in. greater than height. Length must be equal to width of packages. Laminated material may be used if AAR approved. When side-by-side packages are not of equal height, it will be necessary to apply a minimum of three fillers to ensure that separators are on a level plane. Fillers are to be 3 1/2 in. wide by 48 in. long, height to suit. Secure each to separators with two 16-D nails. See Sketch 1.

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Fig. 113 (Rev. 12/07) (Continued)
(New 09/96)

ENGINEERED-WOOD PRODUCTS, LVL, PSL, AND LSL STRUCTURAL BEAMS AND I-JOISTS, PACKAGED—CENTER A-FRAME FLATCARS, WITH CABLE TIE-DOWNS

Item	No. of Pcs.	Description
		I-Joists
D	2 per package 40 ft long or less. Add 1 additional for packages over 40 ft long.	Package bands: 3/4 in. × .020 in. high tension, on I-joists in packages up to 49 1/2 in. wide by 24 in. high. May be substituted with approved 5/8 in. × .040 in. polyester strapping per General Rule 19 of Section 1. On packages of I-joists over 49 1/2 in. wide and/or 24 in. high, 1 1/4 in. × .029 in. high tension bands must be used.
		Veneer Lumber or (Solid) Beams in Packages Up to 49 1/2 in. Wide and Up to 16 in. High
	2 per package 20 ft long or less. Add 1 for each additional 10 ft up to maximum of 5 per package up to 60 ft. Add 1 for each additional 20 ft or less over 60 ft long.	Package bands: 3/4 in. × .022 in. high tension, on any laminated veneer lumber or beams other than I-beams. May be substituted with approved 5/8 in. × .040 in. polyester strapping per General Rule 19 of Section 1.
		Veneer Lumber or (Solid) Beams in Packages Over 49 1/2 in. Wide and/or Over 16 in. High
	2 per package 40 ft long or less. Add 1 additional for packages over 40 ft long.	Package bands: 1 1/4 in. × .029 in. high tension, on any laminated veneer lumber or beams, other than I-joists. Must be used on packages over 49 1/2 in. wide and/or over 16 in. high.
E	2 per each package 16 ft long Add 1 for each additional 20 ft.	Layer encircling bands: 1 1/4 in. × .029 in. high tension bands. When various length packages are contained in a layer, the shorter packages must be banded to the longer length packages. When a layer consists of three or more side-by-side packages, it will only be necessary to band the two outside rows. On packages 18 ft long or less, locate bands approximately 4 ft in from each end of package. Locate others when needed, equally spaced. See Sketch 2.
F	3 per each top package.	Cables: 3/8-in. diameter, 8,800-lb minimum breaking strength. Cable assemblies must be equipped with edge protectors. Winch assemblies must be equipped with a device to maintain tension. Prior to tightening, there must be a minimum of 2 1/2 wraps of cable around the winch drum. When practical, all cables must be used and must be free of kinks and tangles. Tension to be applied with an 18-in. bar or 3/4-in. ratchet. Cables are to be secured to A-frame in slot nearest to top of package.

Notes and Additional Requirements:

1. For the purposes of this figure, engineered-wood products include LVL (laminated veneer lumber), PSL (parallel-strand lumber), and LSL (laminated-strand lumber). Where veneer lumber is referred to, this includes LVL, PSL, and LSL product.
2. Package must be placed tight against the A-frame to prevent loosening of cables.
3. When package lengths do not permit combining of packages end to end in a layer, packages may be centered on the car provided the weight distribution table contained in General Rule 3, Section 1, is followed.
4. Package or packages in a layer may overhang end of package or packages in the layer below by a maximum of 3 ft at each end of load. No package in any layer is to overhang end packages in the bottom layer by more than 3 ft. When possible, longer packages must be located in bottom portion of load and end overhangs kept to a minimum.
5. Maximum side overhang of package or packages in a layer must not exceed 3 in. No package in the bottom or any layer may exceed the outside edge of bearing pieces by more than 1 in.
6. A layer may be no more than 6 in. narrower per side than the layer immediately below with the exception of the top layer which may be 24 in. narrower per side than the layer immediately below.
7. Package height must not exceed package width. The maximum package height variance in a single layer must not exceed 3 in. except in the top layer.
8. All packages must be a minimum of 12 in. wide.