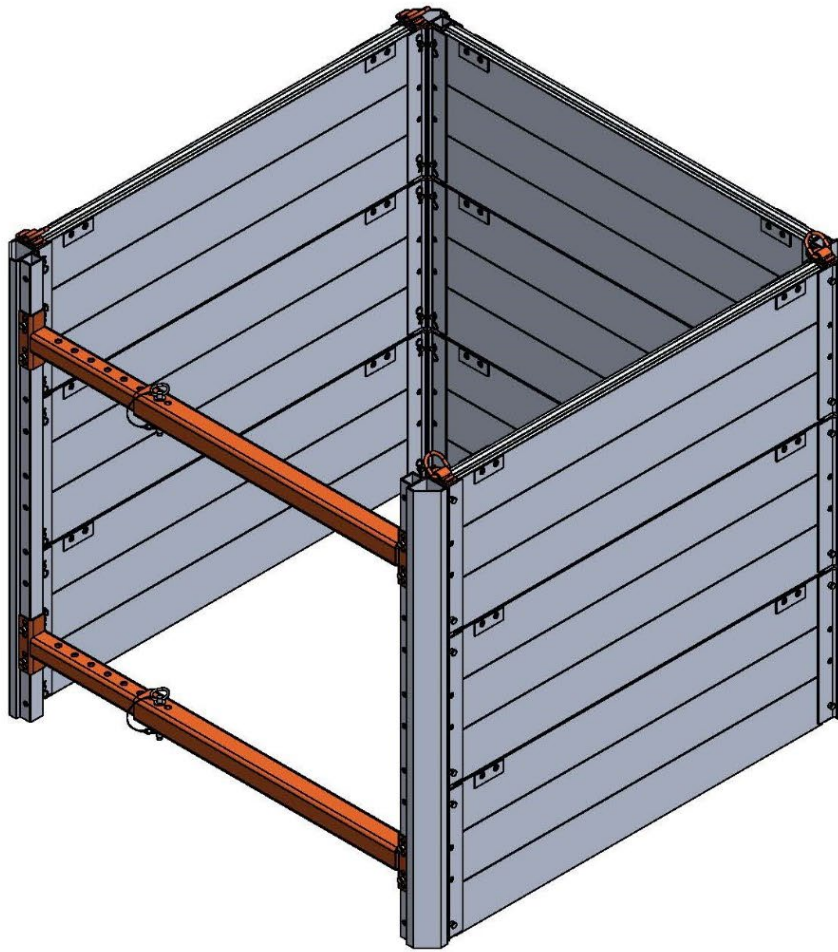
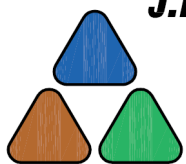


MODULAR ALUMINUM PANEL SYSTEMS - ORANGE

TABULATED DATA
Effective July 20, 2022



Pacific SHORING
Quality Driven, Lead Time Focused



J.M. TURNER ENGINEERING, INC.
CONSULTING ENGINEERS

1325 COLLEGE AVE., SANTA ROSA, CA 95404

(707) 528-4503 FAX (707) 528-4505



Signed on 7-20-2022

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Description

The Pacific Shoring Products Orange Modular Aluminum Panel System consists of tongue and groove style modular panels, corner posts, and steel adjustable spreaders. The system can be constructed in 2-sided, 3-sided, and 4-sided configurations. In all cases the modular panels, corner post and steel adjustable spreaders are pinned in place. The modular system allows for construction and modification of the box at the site. Hydraulic power struts are also available thereby allowing the modular aluminum panel system to become a hydraulic shoring system. Modular panel lengths are available from 2 ft. to 16 ft. long. Corner posts vary in length from 2 ft. to 12 ft. Boxes may be stacked and have allowable depths up to 25 ft. Additional depths may be achieved through design by a registered engineer. Steel adjustable spreaders, hydraulic struts adjusting to a maximum 12 ft. may be used with the system. A 4-sided configuration may be used up to 16 ft. x 16 ft. These boxes may be used in a static or dynamic configuration. A static configuration assumes that the box wall does not necessarily touch the sides of the excavation and that there is no pressure being exerted on the soil. A dynamic configuration requires that the shield walls are pressurized against the soil.

This shoring system is generally used in utility work where differing conditions and excavation geometry occur on a daily basis. The system can be easily loaded onto a truck and constructed at the site as the excavation dimensions and obstructions reveal themselves. Parts may be handled by one person and constructed boxes can be handled with a backhoe.

General Information for use of Pacific Shoring Products Orange MAPS

1. The Orange Modular Aluminum Panel Systems tabulated here are based on requirements of Federal OSHA 29CFR, Part 1926, Subpart P-Excavations, and Trenches

1926.652(c)(2)-Option (2) - Designs Using Manufacturer's Tabulated Data.

1926.652(c)(2)(i) -Design of support systems, shield systems, or other protective systems that are drawn from manufacturer's tabulated data shall be in accordance with all specifications, recommendations, and limitations issued or made by the manufacturer.

All provisions of Subpart P apply when utilizing this tabulated data. The contractor's competent person shall use this data to select allowable trench depth, box wall, and strut configuration. The competent person utilizing this tabulated data shall be experienced and knowledgeable of all requirements of Subpart P, and trained in the use and safety procedures for shoring box applications.

2. Use of this tabulated data is dependent on first classifying the soil in accordance with OSHA Appendix A, Soil Classification. Classification shall be just prior to installing shoring box. Soil conditions may change at a later date and require reevaluation of the strength and allowable depth.
3. The Orange Modular Aluminum Panel Systems are tabulated based on the effect of a 20,000 lb. surcharge load set back 2 ft. from the edge of the trench and the equivalent weight effect of the OSHA soil type, see classification of soil types, 2.
4. The depth and spacing given in **Tables 1, 2, and 3** governs the use of Pacific Shoring Products Orange Modular Aluminum Panel Systems and not tabulations given by other manufacturers. This tabulated data applies to the Orange Modular Aluminum Panel Systems manufactured by Pacific Shoring Products, LLC; Any alterations to the boxes or variance from this tabulated data shall be indicated in a site-specific plan prepared and approved by a registered engineer.
5. Faces of excavations shall be vertical and the shoring walls shall be within 12 in. of the excavation walls.
6. Orange Modular Aluminum Panel Systems may be stacked or longitudinally connected as long as they are pinned together.
7. Orange Modular Aluminum Panel Systems shall be installed and removed from outside the trench, see installation and removal procedure.
8. The competent person shall continually monitor the shored excavation for changed conditions such as water seepage, soil movement cracks at the surface, sloughing or raveling, proper surcharge load weight less than 20,000 lbs. and setback a minimum of 2 ft. that may damage the shores.
9. Workers shall always enter, exit, and work inside the shored area of the trench.
10. Orange Modular Aluminum Panel Systems may be set a maximum of 2 ft. from the bottom of the excavation. The trench depth is the full distance to the bottom of the excavation.
11. In sloped excavations, workers should be protected from falling equipment or excavated materials such as loose rock or soil that can potentially roll or fall into the excavations. Protective Barricades, Buildable Boxes or Orange Modular Aluminum Panel Systems shall always be used in a manner that prevents debris or equipment from falling into excavations.

Classification of Soil Types

1. Soil classification shall be in accordance with OSHA Appendix A and classified just prior to installing Orange Modular Aluminum Panel Systems. Soil conditions may change at a later date and require the competent person to check soil conditions periodically and adjust accordingly.
2. The equivalent weight of OSHA soil types* is assumed to be as follows:
 - OSHA Type "A" Soil 25 PSF per ft. of depth
 - OSHA Type "B" Soil 45 PSF per ft. of depth
 - Type "C-60" Soil 60 PSF per ft. of depth**
 - OSHA Type "C" Soil 80 PSF per ft. of depth

* These equivalent weights were adapted from OSHA 1926 Subpart P App C, Timber Shoring for Trenches, Tables C-1.1, C-1.2, and C-1.3

** Type C-60 soil is not identified or classified in OSHA Appendix A

3. Type C-60 soil is soil that does not qualify as OSHA Type A, or Type B, can be cut with vertical walls and will stand up long enough to safely insert and pressurize the hydraulic system.
4. Orange Modular Aluminum Panel Systems may be used in C-80 soil provided they are dug into the excavation and not driven into the soil.

Determining Orange MAPS Configurations

Shoring use and configurations shall be determined by the user (employer and designated competent person). The following steps are necessary to properly configure and construct an Orange Modular Aluminum Panel System:

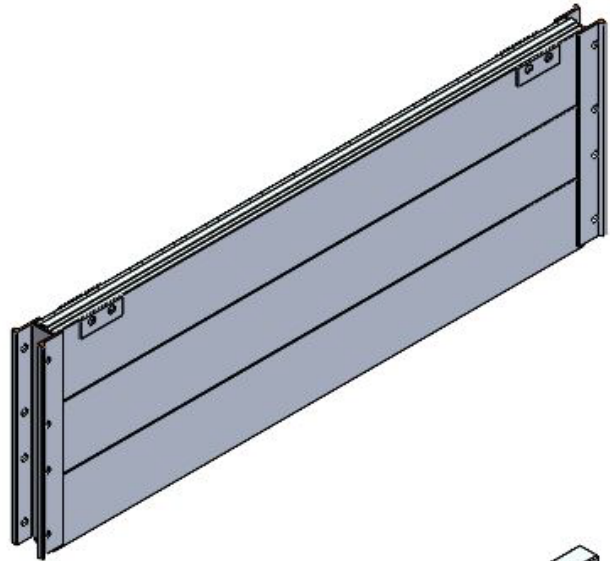
1. Define soil type in accordance with OSHA Appendix A
2. Determine surcharge loading. All shoring equipment is designed for a maximum of a 20,000 lb. surcharge load set back 2 ft. from the edge of the trench. Larger loads shall be set back further or reduced. The competent person shall have training and knowledge in proper determination of surcharge loads.
3. Determine length, width, and depth of shoring requirement.
4. Determine existing facilities and depths that they will enter into the shoring configuration.
5. Determine depths, locations, and clearance requirements of facilities that will be constructed inside the shoring.
6. Determine components of the Orange Modular Aluminum Panel System needed to fit the requirements of the job site. These components will at a minimum consist of:
 - Modular Panels
 - Corner Posts
 - Steel Adjustable Spreaders for 2 and 3-sided boxes
 - Connecting Pins
7. Determine allowable depths and settings for components as follows:
 - a) Modular Panels - **Table 1 - Allowable Depth for Modular Aluminum Panel Systems**
 - b) Corner Posts - **Table 2-12 through Table 2-18 - Allowable Corner Post Spans.** Corner posts have an allowable cantilever span and allowable spreader spacing span based on the depth of the excavation. These tables apply to hydraulic power struts, steel adjustable spreaders, and screw jack struts.
 - c) Adjustable Spreaders - **Table 3 - Allowable Spreader Spans.**
8. Determine approximate shoring system weight before rigging.

Note. Rigging equipment and connections should have a 5:1 factor of safety.

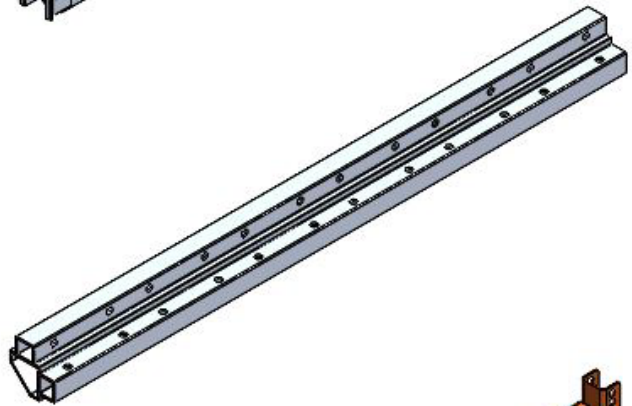
Orange MAPS Components & Sizing

Modular Aluminum Panel System components are manufactured in several different sizes that can then be pinned together in practically any size box. The sizes available are as follows:

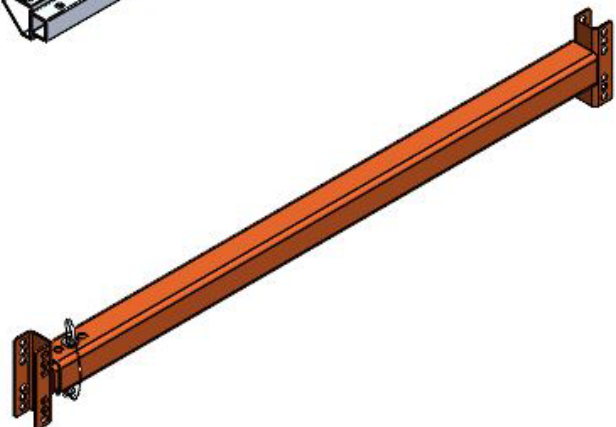
Orange Modular Panels	
Size	Weight (lbs.)
2' x 2'	30.29
2' x 3'	43.87
2' x 4'	56.39
2' x 5'	68.92
2' x 6'	81.45
2' x 7'	93.98
2' x 8'	106.50
2' x 10'	154.28
2' x 12'	184.08
2' x 14'	213.89
2' x 16'	243.70
2' x 14' - HD	268.32
2' x 16' - HD	298.13



Orange Corner Posts	
Size	Weight (lbs.)
2'	13.95
4'	27.90
6'	41.85
8'	55.80
10'	69.76
12'	83.71



Orange Adjustable Spreaders	
Size	Weight (lbs.)
18-26	22.62
23-34	28.72
28-44	34.73
34-54	42.04
42-66	51.80
52-88	63.83
60-96	73.60
72-120	88.09
108-144	132.57



Allowable Depths for Orange MAPS

To determine the allowable depth for a buildable box panel length use **Table 1-1** or **Table 1-2** below.

Example - If the longest wall panel element is 12 ft. long and to be used in C-60 soil, from **Table 1-1**, the box may be used to a depth of 12 ft.

Table 1-1. Allowable Depths for Modular Aluminum Panel Systems					
Panel Length (ft.)	Panel Capacity (PSF)	Allowable Depth (ft.)			
		OSHA Soil Type			
		A-25	B-45	C-60	C-80
2' x 2'	21,264	25	25	25	25
2' x 3'	9,448	25	25	25	25
2' x 4'	5,312	25	25	25	25
2' x 5'	3,400	25	25	25	25
2' x 6'	2,360	25	25	25	25
2' x 7'	1,736	25	25	25	22
2' x 8'	1,328	25	25	22	17
2' x 10'	1,248	25	25	21	16
2' x 12'	872	25	19	15	11
2' x 14'	640	25	14	11	8
2' x 16'	488	20	11	8	6
2' x 14' - HD	848	25	19	14	11
2' x 16' - HD	648	25	14	11	8

Note: Orange highlighted cells are for HD panels.

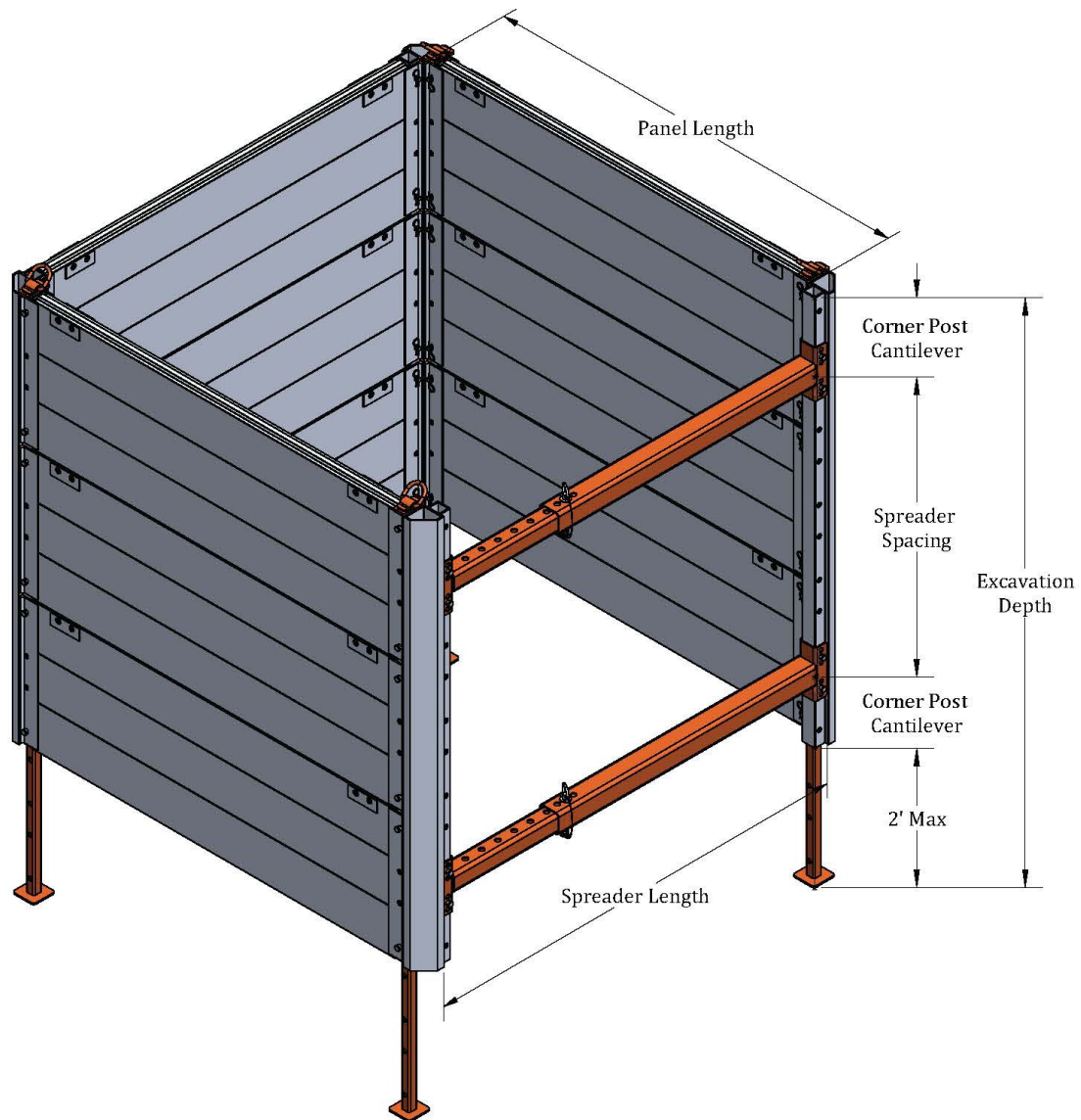
Table 1-1 Notes

1. Wall panels are Pacific Shoring Products Modular Aluminum Panels as detailed in this tabulated data.
2. The longest box wall in the constructed box shall govern the allowable depth given in **Table 1-1**.
3. Two- and three-sided boxes shall be strutted. See **Table 2-2. through Table 2-18.** for allowable corner post spans and **Table 3.** for allowable adjustable spreader spans.
4. Panel lengths are overall dimension from inside of corner post to Inside of opposite corner post.
5. Modular panels and adjustable spreaders must use a minimum of 4 connecting pins and keepers to secure them to the corner posts, two per side.
6. Tabulated depths are limited to 25 ft. deep. Additional depth may be achieved when the design is by a registered civil engineer.

Allowable Corner Post Spans

On two- and three-sided boxes, use **Table 2-2. through Table 2-18.** to determine the allowable corner post cantilever and strut spacing.

Example- If the longest wall panel element on a 3-sided box is 14 ft. long and to be used in C-60 soil at 8 ft. deep, from **Table 2-14.**, the maximum corner post cantilever can be 2.6 ft. and the maximum spreader spacing can be 4.0 ft. on center.



Note

When modular aluminum panel systems are set in trenches that are sloped above, extend the box 18" above the hinge point. Slopes shall be in accordance with OSHA Appendix B sloping and benching.

Table 2-2. Allowable Corner Post Spans
2' x 2' Panel Length

Depth (ft.)	Corner Post Cantilever (ft.)				Spreader Spacing (ft.)			
	OSHA Soil Type				OSHA Soil Type			
	A-25	B-45	C-60	C-80	A-25	B-45	C-60	C-80
6	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0
8	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0
10	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0
12	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0
14	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0
16	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0
18	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0
20	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0
22	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0
24	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0
25	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0

Table 2-3. Allowable Corner Post Spans
2' x 3' Panel Length

Depth (ft.)	Corner Post Cantilever (ft.)				Spreader Spacing (ft.)			
	OSHA Soil Type				OSHA Soil Type			
	A-25	B-45	C-60	C-80	A-25	B-45	C-60	C-80
6	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0
8	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0
10	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0
12	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0
14	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0
16	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0
18	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0
20	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0
22	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0
24	3.0	3.0	3.0	2.9	4.0	4.0	4.0	4.0
25	3.0	3.0	3.0	2.9	4.0	4.0	4.0	4.0

Table 2-4. Allowable Corner Post Spans
2' x 4' Panel Length

Depth (ft.)	Corner Post Cantilever (ft.)				Spreader Spacing (ft.)			
	OSHA Soil Type				OSHA Soil Type			
	A-25	B-45	C-60	C-80	A-25	B-45	C-60	C-80
6	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0
8	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0
10	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0
12	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0
14	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0
16	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0
18	3.0	3.0	3.0	2.9	4.0	4.0	4.0	4.0
20	3.0	3.0	3.0	2.8	4.0	4.0	4.0	4.0
22	3.0	3.0	3.0	2.6	4.0	4.0	4.0	4.0
24	3.0	3.0	2.9	2.5	4.0	4.0	4.0	4.0
25	3.0	3.0	2.8	2.5	4.0	4.0	4.0	4.0

Table 2-5. Allowable Corner Post Spans
2' x 5' Panel Length

Depth (ft.)	Corner Post Cantilever (ft.)				Spreader Spacing (ft.)			
	OSHA Soil Type				OSHA Soil Type			
	A-25	B-45	C-60	C-80	A-25	B-45	C-60	C-80
6	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0
8	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0
10	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0
12	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0
14	3.0	3.0	3.0	2.9	4.0	4.0	4.0	4.0
16	3.0	3.0	3.0	2.7	4.0	4.0	4.0	4.0
18	3.0	3.0	3.0	2.6	4.0	4.0	4.0	4.0
20	3.0	3.0	2.8	2.5	4.0	4.0	4.0	4.0
22	3.0	3.0	2.7	2.4	4.0	4.0	4.0	4.0
24	3.0	3.0	2.6	2.3	4.0	4.0	4.0	4.0
25	3.0	2.9	2.5	2.2	4.0	4.0	4.0	4.0

Table 2-6. Allowable Corner Post Spans
2' x 6' Panel Length

Depth (ft.)	Corner Post Cantilever (ft.)				Spreader Spacing (ft.)			
	OSHA Soil Type				OSHA Soil Type			
	A-25	B-45	C-60	C-80	A-25	B-45	C-60	C-80
6	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0
8	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0
10	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0
12	3.0	3.0	3.0	2.9	4.0	4.0	4.0	4.0
14	3.0	3.0	3.0	2.7	4.0	4.0	4.0	4.0
16	3.0	3.0	2.9	2.5	4.0	4.0	4.0	4.0
18	3.0	3.0	2.7	2.4	4.0	4.0	4.0	4.0
20	3.0	3.0	2.6	2.3	4.0	4.0	4.0	4.0
22	3.0	2.8	2.5	2.2	4.0	4.0	4.0	4.0
24	3.0	2.7	2.4	2.1	4.0	4.0	4.0	4.0
25	3.0	2.7	2.3	2.0	4.0	4.0	4.0	4.0

Table 2-7. Allowable Corner Post Spans
2' x 7' Panel Length

Depth (ft.)	Corner Post Cantilever (ft.)				Spreader Spacing (ft.)			
	OSHA Soil Type				OSHA Soil Type			
	A-25	B-45	C-60	C-80	A-25	B-45	C-60	C-80
6	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0
8	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0
10	3.0	3.0	3.0	2.9	4.0	4.0	4.0	4.0
12	3.0	3.0	3.0	2.7	4.0	4.0	4.0	4.0
14	3.0	3.0	2.8	2.5	4.0	4.0	4.0	4.0
16	3.0	3.0	2.7	2.3	4.0	4.0	4.0	4.0
18	3.0	2.9	2.5	2.2	4.0	4.0	4.0	4.0
20	3.0	2.7	2.4	2.1	4.0	4.0	4.0	4.0
22	3.0	2.6	2.3	2.0	4.0	4.0	4.0	4.0
24	3.0	2.5	2.2	1.9	4.0	4.0	4.0	3.8
25	3.0	2.5	2.2	1.9	4.0	4.0	4.0	3.7

Table 2-8. Allowable Corner Post Spans
2' x 8' Panel Length

Depth (ft.)	Corner Post Cantilever (ft.)				Spreader Spacing (ft.)			
	OSHA Soil Type				OSHA Soil Type			
	A-25	B-45	C-60	C-80	A-25	B-45	C-60	C-80
6	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0
8	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0
10	3.0	3.0	3.0	2.7	4.0	4.0	4.0	4.0
12	3.0	3.0	2.8	2.5	4.0	4.0	4.0	4.0
14	3.0	3.0	2.6	2.3	4.0	4.0	4.0	4.0
16	3.0	2.8	2.5	2.2	4.0	4.0	4.0	4.0
18	3.0	2.7	2.4	2.1	4.0	4.0	4.0	4.0
20	3.0	2.6	2.2	2.0	4.0	4.0	4.0	3.9
22	3.0	2.4	2.1	1.9	4.0	4.0	4.0	3.6
24	3.0	2.4	2.1	1.8	4.0	4.0	4.0	3.3
25	3.0	2.3	2.0	1.8	4.0	4.0	4.0	3.2

Table 2-10. Allowable Corner Post Spans
2' x 10' Panel Length

Depth (ft.)	Corner Post Cantilever (ft.)				Spreader Spacing (ft.)			
	OSHA Soil Type				OSHA Soil Type			
	A-25	B-45	C-60	C-80	A-25	B-45	C-60	C-80
6	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0
8	3.0	3.0	3.0	2.7	4.0	4.0	4.0	4.0
10	3.0	3.0	2.8	2.4	4.0	4.0	4.0	4.0
12	3.0	2.9	2.5	2.2	4.0	4.0	4.0	4.0
14	3.0	2.7	2.4	2.1	4.0	4.0	4.0	4.0
16	3.0	2.5	2.2	1.9	4.0	4.0	4.0	3.9
18	3.0	2.4	2.1	1.8	4.0	4.0	4.0	3.5
20	3.0	2.3	2.0	1.7	4.0	4.0	4.0	3.2
22	2.9	2.2	1.9	1.7	4.0	4.0	3.8	2.9
24	2.8	2.1	1.8	1.6	4.0	4.0	3.5	2.7
25	2.7	2.1	1.8	1.6	4.0	4.0	3.4	2.6

Table 2-12. Allowable Corner Post Spans
2' x 12' Panel Length

Depth (ft.)	Corner Post Cantilever (ft.)				Spreader Spacing (ft.)			
	OSHA Soil Type				OSHA Soil Type			
	A-25	B-45	C-60	C-80	A-25	B-45	C-60	C-80
6	3.0	3.0	3.0	2.8	4.0	4.0	4.0	4.0
8	3.0	3.0	2.8	2.4	4.0	4.0	4.0	4.0
10	3.0	2.9	2.5	2.2	4.0	4.0	4.0	4.0
12	3.0	2.6	2.3	2.0	4.0	4.0	4.0	4.0
14	3.0	2.5	2.2	1.9	4.0	4.0	4.0	3.7
16	3.0	2.3	2.0	1.8	4.0	4.0	4.0	3.3
18	2.9	2.2	1.9	1.7	4.0	4.0	3.8	2.9
20	2.7	2.1	1.8	1.6	4.0	4.0	3.5	2.6
22	2.6	2.0	1.7	1.5	4.0	4.0	3.2	2.4
24	2.5	1.9	1.7	1.5	4.0	3.8	2.9	2.2
25	2.5	1.9	1.6	1.4	4.0	3.7	2.8	2.1

Table 2-14. Allowable Corner Post Spans
2' x 14' Panel Length

Depth (ft.)	Corner Post Cantilever (ft.)				Spreader Spacing (ft.)			
	OSHA Soil Type				OSHA Soil Type			
	A-25	B-45	C-60	C-80	A-25	B-45	C-60	C-80
6	3.0	3.0	2.9	2.6	4.0	4.0	4.0	4.0
8	3.0	2.9	2.6	2.3	4.0	4.0	4.0	4.0
10	3.0	2.6	2.3	2.0	4.0	4.0	4.0	4.0
12	3.0	2.4	2.1	1.9	4.0	4.0	4.0	3.7
14	2.9	2.3	2.0	1.7	4.0	4.0	4.0	3.2
16	2.8	2.1	1.9	1.6	4.0	4.0	3.7	2.8
18	2.6	2.0	1.8	1.6	4.0	4.0	3.3	2.5
20	2.5	1.9	1.7	1.5	4.0	3.9	3.0	2.3
22	2.4	1.9	1.6	1.4	4.0	3.6	2.7	2.1
24	2.3	1.8	1.6	1.4	4.0	3.3	2.5	1.9
25	2.3	1.7	1.5	1.3	4.0	3.2	2.4	1.8

Table 2-16. Allowable Corner Post Spans
2' x 16' Panel Length

Depth (ft.)	Corner Post Cantilever (ft.)				Spreader Spacing (ft.)			
	OSHA Soil Type				OSHA Soil Type			
	A-25	B-45	C-60	C-80	A-25	B-45	C-60	C-80
6	3.0	3.0	2.7	2.4	4.0	4.0	4.0	4.0
8	3.0	2.7	2.4	2.1	4.0	4.0	4.0	4.0
10	3.0	2.5	2.2	1.9	4.0	4.0	4.0	3.8
12	2.9	2.3	2.0	1.8	4.0	4.0	4.0	3.2
14	2.7	2.1	1.9	1.6	4.0	4.0	3.6	2.8
16	2.6	2.0	1.8	1.5	4.0	4.0	3.2	2.5
18	2.5	1.9	1.7	1.5	4.0	3.8	2.9	2.2
20	2.4	1.8	1.6	1.4	4.0	3.4	2.6	2.0
22	2.3	1.7	1.5	1.3	4.0	3.1	2.4	1.8
24	2.2	1.7	1.5	1.3	4.0	2.9	2.2	1.7
25	2.1	1.6	1.4	1.2	4.0	2.8	2.1	1.6

Table 2-17. Allowable Corner Post Spans								
2' x 14' HD Panel Length								
Depth (ft.)	Corner Post Cantilever (ft.)				Spreader Spacing (ft.)			
	OSHA Soil Type				OSHA Soil Type			
	A-25	B-45	C-60	C-80	A-25	B-45	C-60	C-80
6	3.0	3.0	2.9	2.6	4.0	4.0	4.0	4.0
8	3.0	2.9	2.6	2.3	4.0	4.0	4.0	4.0
10	3.0	2.6	2.3	2.0	4.0	4.0	4.0	4.0
12	3.0	2.4	2.1	1.9	4.0	4.0	4.0	3.7
14	2.9	2.3	2.0	1.7	4.0	4.0	4.0	3.2
16	2.8	2.1	1.9	1.6	4.0	4.0	3.7	2.8
18	2.6	2.0	1.8	1.6	4.0	4.0	3.3	2.5
20	2.5	1.9	1.7	1.5	4.0	3.9	3.0	2.3
22	2.4	1.9	1.6	1.4	4.0	3.6	2.7	2.1
24	2.3	1.8	1.6	1.4	4.0	3.3	2.5	1.9
25	2.3	1.7	1.5	1.3	4.0	3.2	2.4	1.8

Table 2-18. Allowable Corner Post Spans								
2' x 16' HD Panel Length								
Depth (ft.)	Corner Post Cantilever (ft.)				Spreader Spacing (ft.)			
	OSHA Soil Type				OSHA Soil Type			
	A-25	B-45	C-60	C-80	A-25	B-45	C-60	C-80
6	3.0	3.0	2.7	2.4	4.0	4.0	4.0	4.0
8	3.0	2.7	2.4	2.1	4.0	4.0	4.0	4.0
10	3.0	2.5	2.2	1.9	4.0	4.0	4.0	3.8
12	2.9	2.3	2.0	1.8	4.0	4.0	4.0	3.2
14	2.7	2.1	1.9	1.6	4.0	4.0	3.6	2.8
16	2.6	2.0	1.8	1.5	4.0	4.0	3.2	2.5
18	2.5	1.9	1.7	1.5	4.0	3.8	2.9	2.2
20	2.4	1.8	1.6	1.4	4.0	3.4	2.6	2.0
22	2.3	1.7	1.5	1.3	4.0	3.1	2.4	1.8
24	2.2	1.7	1.5	1.3	4.0	2.9	2.2	1.7
25	2.1	1.6	1.4	1.2	4.0	2.8	2.1	1.6

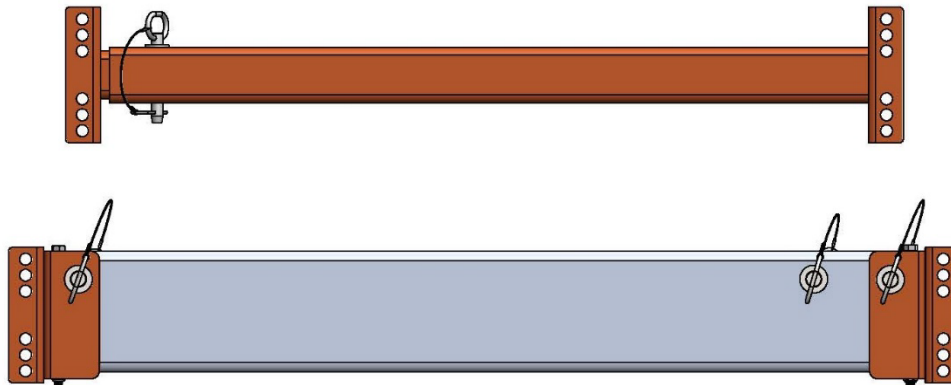
Table 2-12 through Table 2-18 Notes.

1. The cells highlighted in green indicate that the spreaders can be either the adjustable spreaders (static) or the power struts (hydraulic).
2. The cells highlighted in orange indicate that the spreaders must be the adjustable spreaders (static).
3. Always use a minimum of two struts per corner post.
4. Short sectional corner posts shall have a strut top and bottom.
5. Long corner posts shall have spreader spaced as shown in these tables.
6. Interpolation between tables is OK.
7. Two- and three-sided boxes shall have continuous corner post, for example an 8 ft. tall two-sided box must have an 8 ft. long corner posts. Strut spacing shall be as shown in **Table 2-2 through Table 2-18**.
8. When using legs to raise the modular aluminum panel system 2 ft. from the bottom of the excavation, the corner post cantilever may not exceed 2 ft. giving a total clearance of 4 ft.

Allowable Spreader Spans

Table 3. gives the maximum spreader length allowed for any modular aluminum panel system configuration. Longer lengths may be allowed as determined by a registered engineer.

Table 3. Allowable Spreader Spans	
Spreader Type	Spreader Length (ft.)
Adjustable Spreader (static)	12'
Power Strut (hydraulic)	12'



Orange Modular Aluminum Panel System Installation and Removal

Installation Procedure

Modular aluminum panel systems must be constructed prior to setting inside the trench.

- Step 1 Pin panels into corner posts. Assemble the system in a stable configuration starting at the corners and setting modular panels in opposite directions.
- Step 2 In two- and three-sided configurations pin the steel adjustable spreaders into the corner posts and adjust them to the proper length.
- Step 3 Lower the assembled system into the trench with the proper lifting equipment such as a backhoe, boom truck or crane.

Removal Procedure

- Step 1 Remove the box using equipment operated from outside the trench. Workers are not allowed inside the box when it is being set, moved, or removed from the trench.

Safe Handling and Use of Orange Modular Aluminum Panel Systems

- When modular aluminum panel systems are set in trenches that are sloped above, extend the box 18" above the hinge point. Slopes shall be in accordance with OSHA Appendix B sloping and benching.
- When there is sloping beyond the top of the box depth of the excavation is limited to 20 ft. without a design by a registered engineer.
- Workers are not allowed inside the box when it is being set, moved, or removed from the trench.
- Provide safe access such as ladders for workers to enter and exit the shoring system.
- Use cables and slings for lifting that have a 5:1 factor of safety. A competent person is to determine the total lift weight.