

EFFICIENCY PRODUCTION

AMERICA'S TRENCH BOX BUILDER™

Modular Slide Rail System



Tabulated Data
Effective November 1, 2018

EFFICIENCY PRODUCTION
Modular Slide Rail System - Tab Data



America's Trench Box Builder™



www.encyproduction.com • 800-552-8800 • Fax: 517.676.0373



WARNING - IMPROPER USE OF SHORING MAY CAUSE INJURY OR DEATH!

General Information

- a) MODULAR SLIDE RAIL SYSTEM Tabulated Data has been prepared in accordance to the OSHA Safety Requirements defined in 29 CFR, part 1926, subpart P - Excavations and Trenches.
- b) Efficiency Production's Slide Rail System and this data is to be used by a soil engineer, or a *Competent Person* as defined by the OSHA standards. The Competent Person shall be experienced and knowledgeable of trench and excavation procedures; soil identification; and the design of trench protection systems such as sloping, and/or trench shielding and shoring systems.
- c) The responsibility for job site safety and the proper selection, installation and removal of the shoring system belongs to the employer-designated Competent Person. A Competent Person is required on every excavation job site.
- d) The Tabulated Data provides a general set of guidelines to assist the Competent Person in the proper use of a protective system for employee safety, however the tabulated data is not intended to be used as a job-specific excavation safety plan.
- e) The Competent Person shall continually monitor the excavation for signs of deterioration such as seepage of water or flowing soil into the excavation. Changing soil conditions may require adjustments to the shoring system.

Data Limitations

- f) The Tabulated Data shall be used only for those soil conditions indicated. The depth ratings in the data are not considered adequate when additional loads are present. More severe conditions require the services of a soils engineer to determine the lateral soil pressure.
- g) All lifting and pulling equipment, including cables, slings, chains, shackles, and safety hooks, shall be inspected for damage or defect prior to use and shall be evaluated for suitability and capacity.
- h) Slide Rail System to be assembled and installed in accordance with manufacturer's instructions.
- i) Excavation 2 feet below bottom of panel is permitted when no loss of soil from behind or below the bottom of system is encountered. See paragraph 1926.652 (E)(2)(i). The competent person shall make the determination for compliance. Sudden shifting of the shield vertically shall be avoided.
- j) Any modifications or alterations are not allowed unless approved in writing by Efficiency Production.
- k) C-80 Soil does not represent the worst possible soil condition. Obtain site-specific engineering for extremely non-stable conditions such as marine clay, peat, soft submerged and flowing clays, etc.
- l) The Slide Rail System as a whole is limited by the depth rating of each panel at the depth it is used.

Classification of Soil Types

The soil descriptions for OSHA Type "A", "B", & "C" Soils are based on Appendix A to OSHA Subpart P of 29CFR Part 1926, "Excavations and Trenches". The Type "C-60" Soil referred to in Efficiency's Tabulated Data represents a more stable soil condition than the Type "C" described in Appendix A.

Type "A" Soil - Effective lateral weight of **25 PSF** per foot of depth.

Description: Cohesive soil (i.e.. silt, silty clay, sandy clay, clay loam) with an unconfined compressive strength of 1.5 TSF (tons per square foot) or greater; or cemented soils such as caliche and hardpan. No soil is Type A if the soil is fissured; subject to vibration from heavy traffic, pile driving or similar effects; has been previously disturbed; or part of a sloped, layered system where the layers dip into the excavation on a slope of four horizontal to one vertical (4H:1V) or greater.

Type "B" Soil - Effective lateral weight of **45 PSF** per foot of depth.

Description: Cohesive soil with an unconfined compressive strength greater than .5 TSF but less than 1.5 TSF; and granular cohesionless soils including angular gravel, silt, silt loam, sandy loam, and in some cases, silty clay loam and sand clay loam; previously disturbed soils except those which would otherwise be classed as Type C; soil that meets requirements for Type A, but is fissured or subject to vibration; dry rock that is unstable; and material that is part of a layered system where layers dip into the excavation on a slope less steep than four horizontal to one vertical (4H:1V), but only if the material would otherwise be classified as Type B.

Type "C-60" Soil - Effective lateral weight of **60 PSF** per foot of depth.

Description: Soft cohesive to moist soil with an unconfined compressive strength less than .5 TSF; moist cohesive soil or moist dense sand which is not flowing or submerged. When cut with near vertical side walls, soil can stand with unsupported vertical sidewalls long enough for shoring installation.

Type "C-80" Soil - Effective lateral weight of **80 PSF** per foot of depth.

Description: Cohesive soil with an unconfined compressive strength of .5 TSF or less; granular soils including gravel, sand, and loamy sand; submerged soil or soil from which water is freely seeping; submerged rock that is not stable; and material in a sloped, layered system where the layers dip into the excavation on a slope of four horizontal to one vertical (4H : 1V) or steeper.

Slide Rail Panels Tabulated Data (Sheet EP-SRP-1)



685 Hull Road, Mason, MI - (517) 676-8800

Depth Rating (ft)

Type B-45	Type C-60	Type C-80
Clay with unconfined compressive strength greater than 0.5 TSF but less than 1.5 TSF, cohesionless gravel, silt, silty loam or sandy loam.	Soft cohesive soil with an unconfined compressive strength greater than 0.2 TSF, but less than 0.5 TSF, sand and loamy sand; saturated soil that is stable, dry sand, or dewatered soils.	Soft cohesive soil with an unconfined compressive strength less than 0.2 TSF. Fractured rock that is not stable, submerged soils or soils with freely seeping water.

Model Number	Panel Height (ft)	Panel Length (ft)	~Wall Thickness (In)	Moment of Inertia of Full Panel Height (in ⁴)	Pressure Rating (psf)	Type B-45	Type C-60	Type C-80
SR-48NOKE-5	4	8	5.4	187	3000	40	40	30
SR-410NOKE-5	4	10	5.4	187	3000	40	40	30
SR-412NOKE-5	4	12	5.4	187	3000	40	40	30
SR-414NOKE-5	4	14	5.4	187	3000	40	40	30
SR-416NOKE-5	4	16	5.4	187	2500	40	40	30
SR-418NOKE-5	4	18	5.4	187	1920	40	32	25
SR-420NOKE-5	4	20	5.4	187	1620	36	27	21
SR-422NOKE-5	4	22	5.4	187	1359	30	23	18
SR-424NOKE-5	4	24	5.4	187	1140	25	19	15
SR-426NOKE-5	4	26	5.4	209	1080	24	18	14
SR-428NOKE-5	4	28	5.4	209	930	20	16	12
SR-432NOKE-5	4	32	5.5	370	1080	24	18	14
SR-432KE-5	4	32	5.5	366	1080	24	18	14
SR-61NOKE6-5	6	16	5.4	249	2293	40	40	30
SR-618NOKE-5	6	18	5.4	249	1810	40	31	24
SR-620NOKE-5	6	20	5.4	281	1634	37	29	22
SR-622NOKE-5	6	22	5.4	327	1579	36	28	21
SR-88KE-5	8	8	5.4	323	3000	40	40	30
SR-810KE-5	8	10	5.4	337	3000	40	40	30
SR-812KE-5	8	12	5.4	337	3000	40	40	30
SR-814KE-5	8	14	5.4	323	2700	40	40	30
SR-816KE-5	8	16	5.4	337	2000	40	36	28
SR-818KE-5	8	18	5.4	337	1737	40	31	24
SR-820KE-5	8	20	5.4	386	1560	36	28	22
SR-824KE-5	8	24	5.5	403	1140	27	21	17
SR-826KE-5	8	26	5.4	458	1142	27	21	17
SR-820HDKE-5	8	20	5.5	454	1800	40	32	25
SR-822HDKE-5	8	22	5.4	425	1476	35	27	21
SR-824HDKE-5	8	24	5.5	569	1636	38	30	23
SR-828HDKE-5	8	28	5.5	613	1293	31	24	19

Notes & Limitations:

Rev 1, 1/3/19

- 1.) ALL EXCAVATIONS SHALL BE IN ACCORDANCE WITH OSHA CFR 29, PART 1926, SUBPART P.
- 2.) SLIDE RAIL SYSTEM SHALL BE USED IN STRICT ACCORDANCE WITH THE INSTALLATION AND USE GUIDELINES OF THE MANUFACTURER.
- 3.) 100 PSF UNIFORM SURCHARGE LOAD HAS BEEN INCLUDED IN ALL DEPTH RATINGS. DEPTH RATINGS SHALL BE REDUCED TO ACCOUNT FOR ANY SURCHARGE LOADING WHICH EXCEEDS 100 PSF, OTHERWISE SITE SPECIFIC ENGINEERING IS REQUIRED.
- 4.) BOTTOM OF PANEL MUST NOT BE MORE THAN TWO FEET ABOVE BASE OF EXCAVATION PER OSHA 29 CFR PART 1926.652(g)(2).
- 5.) SOILS SHALL BE SLOPED IN ACCORDANCE WITH OSHA GUIDELINES AND MUST EXTEND TO NO LESS THAN 18" BELOW THE TOP OF THE SHORING PANELS. ANY EXCAVATIONS WITH SLOPING THAT EXCEED 20' IN DEPTH, REQUIRE SITE SPECIFIC ENGINEERING.
- 6.) THIS TABULATED DATA IS NOT INTENDED TO BE USED AS A JOB SPECIFIC SAFETY PLAN.
- 7.) MEANS AND METHODS ASSOCIATED WITH THE EXCAVATION, INSTALLATION & REMOVAL OF THE SHORING SYSTEM, EVALUATION OF SURCHARGES, AND DEWATERING ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- 8.) ANY MODIFICATIONS TO PANELS OR POSTS WHICH ARE NOT APPROVED IN WRITING BY EFFICIENCY PRODUCTION, VOIDS THIS CERTIFICATION.
- 9.) CERTIFICATION IS NOT VALID IF THE SHORING SYSTEM SHOWS EXCESSIVE WEAR, IS PERMANENTLY DAMAGED, IS NOT MAINTAINED OR REPAIRED PROPERLY.
- 10.) FILL VOIDS BETWEEN FACE OF EXCAVATION AND SHORING PANELS.
- 11.) THIS TABULATED DATA IS A GENERAL SET OF GUIDELINES & CHARTS TO ASSIST THE COMPETENT PERSON IN SELECTING A SAFETY SYSTEM WITH PROPER SHORING EQUIPMENT. COMPETENT PERSON HAS SOLE RESPONSIBILITY FOR JOB SITE SAFETY & THE PROPER SELECTION OF THE SHORING EQUIPMENT.
- 12.) DEPTH AND PRESSURE RATINGS ACCOUNT FOR 33% OVERSTRESS FOR TEMPORARY LOADING CONDITIONS.

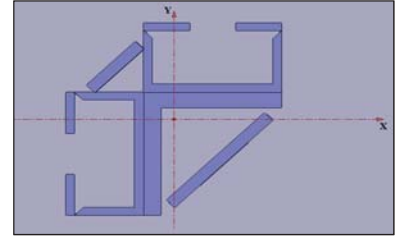
ANY USE OF THIS PRODUCT NOT SPECIFICALLY DESCRIBED ON THIS CERTIFICATE AND MANUFACTURER USE GUIDELINES COULD CAUSE CAVE-IN, COLLAPSE, OR STRUCTURAL FAILURE RESULTING IN SERIOUS INJURY OR DEATH.

Single Slide Rail Corner & Linear Post Tabulated Data



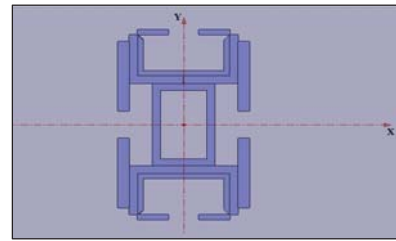
685 Hull Road, Mason, MI - (517) 676-8800

Name	Single Slide Rail Corner Post
Model No	SR-CPOST-11-S
Moment Capacity	78 k-ft
Shear Capacity	130 k
Moment of Inertia	152 in ⁴

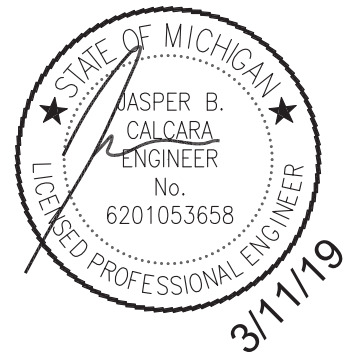


Full Length of Post

Name	Single Slide Rail Linear Post
Model No	SR-LPOST-11-S
Moment Capacity	220 k-ft
Shear Capacity	297 k
Moment of Inertia	392 in ⁴



Full Length of Post



Notes & Limitations:

Rev 0, 8/28/18

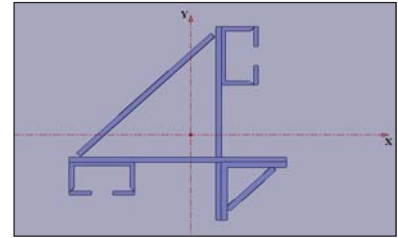
- 1.) THIS DATA SHEET IS TO PROVIDE PROPERTIES OF EFFICIENCY SLIDE RAIL LINEAR AND CORNER POSTS FOR USE IN THE PREPARATION OF SITE SPECIFIC ENGINEERING.
- 2.) THIS DATA SHEET IS NOT A STAND-ALONE TABULATED DATA DOCUMENT.
- 3.) SITE SPECIFIC PLANS MUST BE PREPARED AND STAMPED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE IN WHICH THE SHORING IS BEING INSTALLED.
- 4.) MOMENT AND SHEAR CAPACITIES INCLUDE 33% OVERSTRESS FOR TEMPORARY LOADING CONDITIONS.

Double Slide Rail Corner & Linear Post Tabulated Data



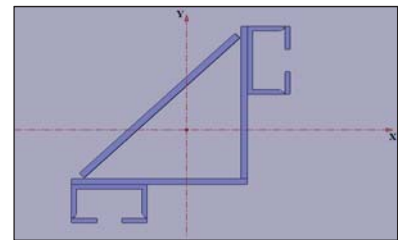
685 Hull Road, Mason, MI - (517) 676-8800

Name	Double Slide Rail Corner Post
Model No	SR-CPOST-14 to 26
Moment Capacity	465 k-ft
Shear Capacity	454 k
Moment of Inertia	1423 in ⁴



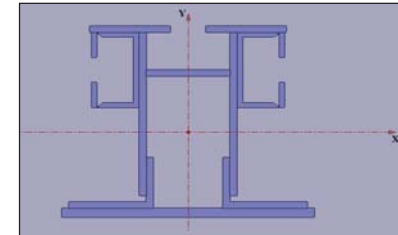
Lower 12' of Post

Name	Double Slide Rail Corner Post
Model No	SR-CPOST-14 to 26
Moment Capacity	366 k-ft
Shear Capacity	322 k
Moment of Inertia	916 in ⁴



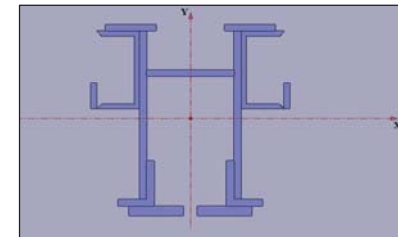
Remainder of Post (Not 12' Lower Section)

Name	Double Slide Rail Linear Post
Model No	SR-LPOST-14 to 28
Moment Capacity	783 k-ft
Shear Capacity	629 k
Moment of Inertia	1143 in ⁴

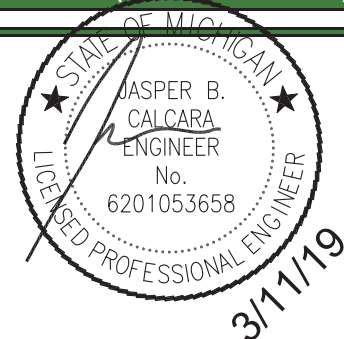


Lower 12' of Post

Name	Double Slide Rail Linear Post
Model No	SR-LPOST-14 to 28
Moment Capacity	516 k-ft
Shear Capacity	483 k
Moment of Inertia	1017 in ⁴



Remainder of Post (Not 12' Lower Section)

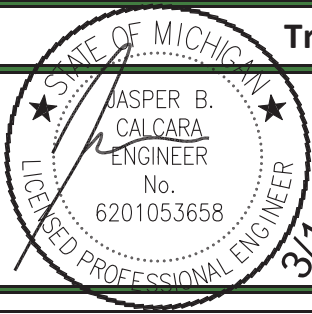


Notes & Limitations:

Rev 0, 8/28/18

- 1.) THIS DATA SHEET IS TO PROVIDE PROPERTIES OF EFFICIENCY SLIDE RAIL LINEAR AND CORNER POSTS FOR USE IN THE PREPARATION OF SITE SPECIFIC ENGINEERING.
- 2.) THIS DATA SHEET IS NOT A STAND-ALONE TABULATED DATA DOCUMENT.
- 3.) SITE SPECIFIC PLANS MUST BE PREPARED AND STAMPED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE IN WHICH THE SHORING IS BEING INSTALLED.
- 4.) MOMENT AND SHEAR CAPACITIES INCLUDE 33% OVERSTRESS FOR TEMPORARY LOADING CONDITIONS.

Triple Slide Rail Corner & Linear Post Tabulated Data

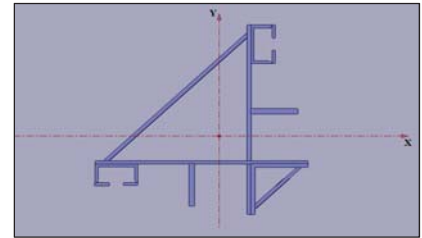


3/11/19



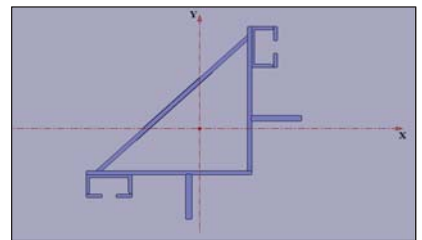
685 Hull Road, Mason, MI - (517) 676-8800

Name	Triple Slide Rail Corner Post
Model No	SR-TRIP-CP-32
Moment Capacity	1050 k-ft
Shear Capacity	761 k
Moment of Inertia	5025 in ⁴



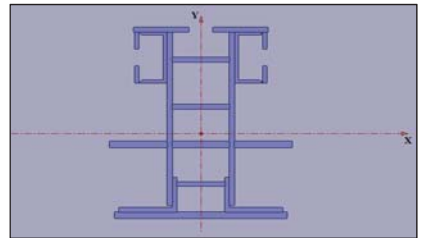
Lower 12' of Post

Name	Triple Slide Rail Corner Post
Model No	SR-TRIP-CP-32
Moment Capacity	870 k-ft
Shear Capacity	497 k
Moment of Inertia	3602 in ⁴



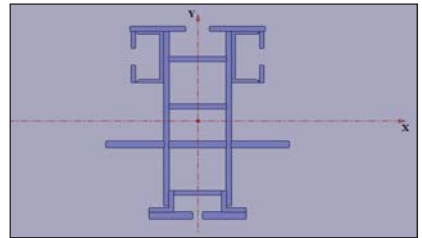
Remainder of Post (Not 12' Lower Section)

Name	Triple Slide Rail Linear Post
Model No	SR-TRIP-LP-28 & 32
Moment Capacity	1408 k-ft
Shear Capacity	761 k
Moment of Inertia	4755 in ⁴



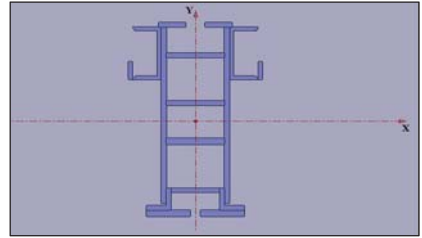
Lower 14' of Post

Name	Triple Slide Rail Linear Post
Model No	SR-TRIP-LP-28 & 32
Moment Capacity	1192 k-ft
Shear Capacity	761 k
Moment of Inertia	3700 in ⁴



Middle 10' of Post

Name	Triple Slide Rail Linear Post
Model No	SR-TRIP-LP-28 & 32
Moment Capacity	1020 k-ft
Shear Capacity	761 k
Moment of Inertia	3148 in ⁴



Top Section of Post

Notes & Limitations:

Rev 0, 8/28/18

- 1.) THIS DATA SHEET IS TO PROVIDE PROPERTIES OF EFFICIENCY SLIDE RAIL LINEAR AND CORNER POSTS FOR USE IN THE PREPARATION OF SITE SPECIFIC ENGINEERING.
- 2.) THIS DATA SHEET IS NOT A STAND-ALONE TABULATED DATA DOCUMENT.
- 3.) SITE SPECIFIC PLANS MUST BE PREPARED AND STAMPED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE IN WHICH THE SHORING IS BEING INSTALLED.
- 4.) MOMENT AND SHEAR CAPACITIES INCLUDE 33% OVERSTRESS FOR TEMPORARY LOADING CONDITIONS.

Rail & Strut Tabulated Data - Single Rail With Either 4' or 7' Parallel Beams

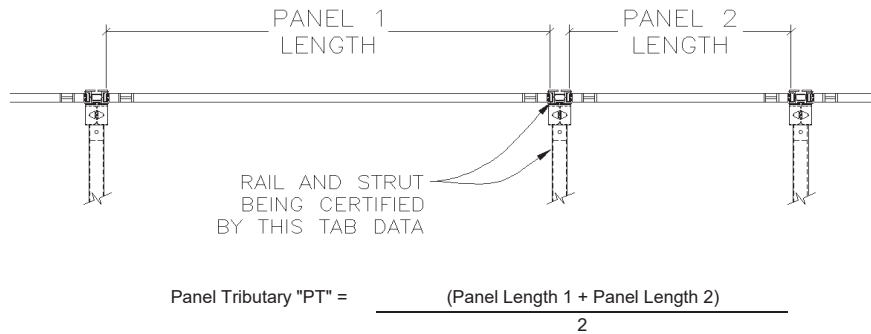


685 Hull Road, Mason, MI - (517) 676-8800

Depth Rating (ft)

Parallel Beam Configuration	Rail Type	Shoring Height (ft)	Strut Type	Max Strut Length (ft)	Max Panel Tributary "PT" (ft)	Clear to Bottom Strut "CS" (ft)	Depth Rating (ft)			
							Type B-45	Type C-60	Type C-80	
7' or 4' Parallel Beams	Single Linear Rail (SR-LPOST-S)	12	8" Sch. 80 Grade 50 Pipe	20	12	5.0	25	20	15	
						6.0	23	18	15	
						7.0	16	13	11	
						16	5.0	23	18	15
							6.0	17	14	12
							7.0	12	10	9
					20	5.0	20	16	13	
						6.0	15	12	10	
						7.0	11	9	8	

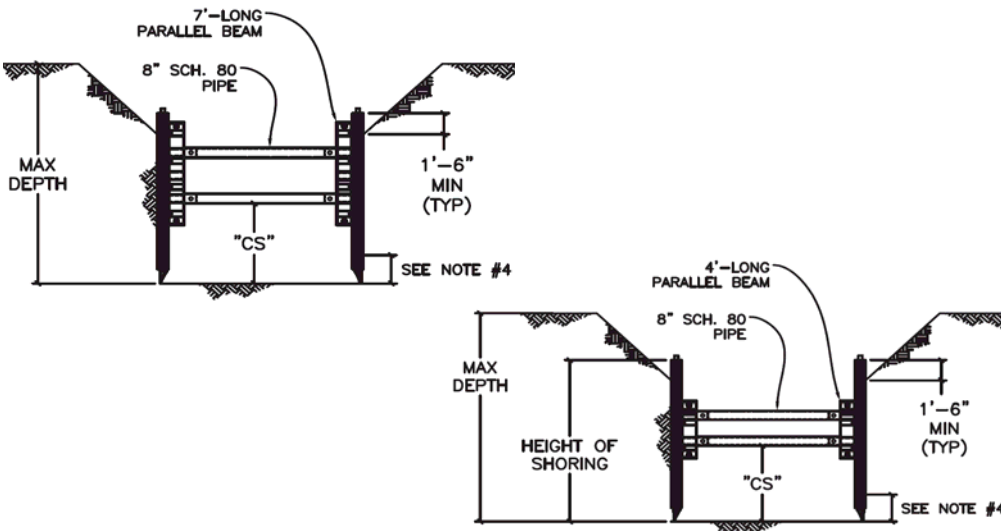
Clay with unconfined compressive strength greater than 0.5 TSF but less than 1.5 TSF, cohesionless gravel, silt, silty loam or sandy loam.	Soft cohesive soil with an unconfined compressive strength greater than 0.2 TSF, but less than 0.5 TSF, sand and loamy sand; saturated soil that is stable, dry sand, or dewatered soils.	Soft cohesive soil with an unconfined compressive strength less than 0.2 TSF. Fractured rock that is not stable, submerged soils or soils with freely seeping water.
--	---	--



NOTES & LIMITATIONS:

- 1) ALL EXCAVATIONS SHALL BE IN ACCORDANCE WITH OSHA CFR 29, PART 1926, SUBPART P.
- 2) SLIDE RAIL SYSTEM SHALL BE USED IN STRICT ACCORDANCE WITH THE INSTALLATION AND USE GUIDELINES OF THE MANUFACTURER.
- 3) 100 PSF UNIFORM SURCHARGE LOAD HAS BEEN INCLUDED IN ALL DEPTH RATINGS. DEPTH RATINGS SHALL BE REDUCED TO ACCOUNT FOR ANY SURCHARGE LOADING WHICH EXCEEDS 100 PSF. OTHERWISE SITE SPECIFIC ENGINEERING IS REQUIRED.
- 4) BOTTOM OF PANEL MUST NOT BE MORE THAN TWO FEET ABOVE BASE OF EXCAVATION PER OSHA 29 CFR PART 1926.652(g)(2).
- 5) NEVER LEAN PLATES, SHEETS OR MATERIALS OF ANY KIND AGAINST PIPE SPREADERS, AND NEVER SUSPEND LOAD FROM PIPE SPREADERS AT ANY TIME.
- 6) SOILS SHALL BE SLOPED IN ACCORDANCE WITH OSHA GUIDELINES, AND MUST EXTEND TO NO LESS THAN 18" BELOW THE TOP OF THE SHORING PANELS. ANY EXCAVATIONS WITH SLOPING THAT EXCEED 20' IN DEPTH, REQUIRE SITE SPECIFIC ENGINEERING.
- 7) THIS TABULATED DATA IS NOT INTENDED TO BE USED AS A JOB SPECIFIC SAFETY PLAN.
- 8) MEANS AND METHODS ASSOCIATED WITH THE EXCAVATION, INSTALLATION & REMOVAL OF THE SHORING SYSTEM, EVALUATION OF SURCHARGES, AND DEWATERING ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- 9) ANY MODIFICATIONS TO ANY COMPONENTS OF THE SLIDE RAIL SYSTEM, WHICH ARE NOT APPROVED IN WRITING BY EFFICIENCY PRODUCTION VOIDS THIS CERTIFICATION.
- 10) CERTIFICATION IS NOT VALID IF THE SHORING SYSTEM SHOWS EXCESSIVE WEAR, IS PERMANENTLY DAMAGED, IS NOT MAINTAINED OR REPAIRED PROPERLY.
- 11) FILL VOIDS BETWEEN FACE OF EXCAVATION AND SHORING PANELS.
- 12) THIS TABULATED DATA IS A GENERAL SET OF GUIDELINES & CHARTS TO ASSIST THE COMPETENT PERSON IN SELECTING A SAFETY SYSTEM WITH PROPER SHORING EQUIPMENT. COMPETENT PERSON HAS SOLE RESPONSIBILITY FOR JOB SITE SAFETY & THE PROPER SELECTION OF THE SHORING EQUIPMENT.
- 13) DEPTH RATINGS ACCOUNT FOR 33% OVERSTRESS FOR TEMPORARY LOADING CONDITIONS.

Note: Depth ratings of all panels being used must meet or exceed depth of shoring, otherwise limit excavation to lowest depth rating of any components being used



Rev 0, 9/5/18

ANY USE OF THIS PRODUCT NOT SPECIFICALLY DESCRIBED ON THIS CERTIFICATE AND MANUFACTURER USE GUIDELINES COULD CAUSE CAVE-IN, COLLAPSE, OR STRUCTURAL FAILURE RESULTING IN SERIOUS INJURY OR DEATH.

Rail & Strut Tabulated Data - Double Rail With 7' Parallel Beams

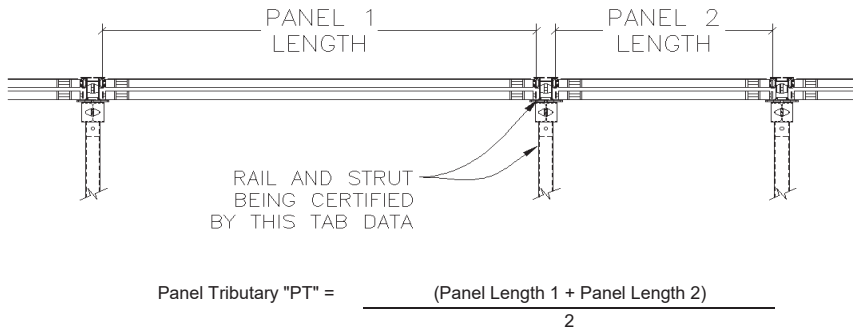


685 Hull Road, Mason, MI - (517) 676-8800

Depth Rating (ft)

Parallel Beam Configuration	Rail Type	Shoring Height (ft)	Strut Type	Max Strut Length (ft)	Max Panel Tributary "PT" (ft)	Clear to Bottom Strut "CS" (ft)	Depth Rating (ft)			
							Type B-45	Type C-60	Type C-80	
7' Parallel Beams	Double Linear Rail (SR-LPOST)	20	8" Sch. 80 Grade 50 Pipe	20	16	7.5	32	25	20	
						8.0	32	25	20	
						8.5	29	23	18	
						20	7.5	25	20	16
							8.0	25	20	16
							8.5	24	19	15
					24	7.5	21	17	14	
						8.0	21	17	14	
						8.5	20	16	13	

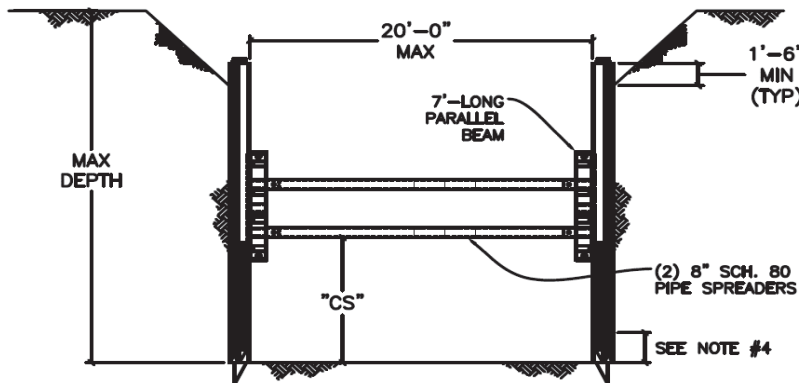
Clay with unconfined compressive strength greater than 0.5 TSF but less than 1.5 TSF, cohesionless gravel, silt, silty loam or sandy loam.	Soft cohesive soil with an unconfined compressive strength greater than 0.2 TSF, but less than 0.5 TSF, sand and loamy sand; saturated soil that is stable, dry sand, or dewatered soils.	Soft cohesive soil with an unconfined compressive strength less than 0.2 TSF. Fractured rock that is not stable, submerged soils or soils with freely seeping water.
--	---	--



NOTES & LIMITATIONS:

- 1) ALL EXCAVATIONS SHALL BE IN ACCORDANCE WITH OSHA CFR 29, PART 1926, SUBPART P.
- 2) SLIDE RAIL SYSTEM SHALL BE USED IN STRICT ACCORDANCE WITH THE INSTALLATION AND USE GUIDELINES OF THE MANUFACTURER.
- 3) 100 PSF UNIFORM SURCHARGE LOAD HAS BEEN INCLUDED IN ALL DEPTH RATINGS. DEPTH RATINGS SHALL BE REDUCED TO ACCOUNT FOR ANY SURCHARGE LOADING WHICH EXCEEDS 100 PSF. OTHERWISE SITE SPECIFIC ENGINEERING IS REQUIRED.
- 4) BOTTOM OF PANEL MUST NOT BE MORE THAN TWO FEET ABOVE BASE OF EXCAVATION PER OSHA 29 CFR PART 1926.652(g)(2).
- 5) NEVER LEAN PLATES, SHEETS OR MATERIALS OF ANY KIND AGAINST PIPE SPREADERS, AND NEVER SUSPEND LOAD FROM PIPE SPREADERS AT ANY TIME.
- 6) SOILS SHALL BE SLOPED IN ACCORDANCE WITH OSHA GUIDELINES, AND MUST EXTEND TO NO LESS THAN 18" BELOW THE TOP OF THE SHORING PANELS. ANY EXCAVATIONS WITH SLOPING THAT EXCEED 20' IN DEPTH, REQUIRE SITE SPECIFIC ENGINEERING.
- 7) THIS TABULATED DATA IS NOT INTENDED TO BE USED AS A JOB SPECIFIC SAFETY PLAN.
- 8) MEANS AND METHODS ASSOCIATED WITH THE EXCAVATION, INSTALLATION & REMOVAL OF THE SHORING SYSTEM, EVALUATION OF SURCHARGES, AND DEWATERING ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- 9) ANY MODIFICATIONS TO ANY COMPONENTS OF THE SLIDE RAIL SYSTEM, WHICH ARE NOT APPROVED IN WRITING BY EFFICIENCY PRODUCTION VOIDS THIS CERTIFICATION.
- 10) CERTIFICATION IS NOT VALID IF THE SHORING SYSTEM SHOWS EXCESSIVE WEAR, IS PERMANENTLY DAMAGED, IS NOT MAINTAINED OR REPAIRED PROPERLY.
- 11) FILL VOIDS BETWEEN FACE OF EXCAVATION AND SHORING PANELS.
- 12) THIS TABULATED DATA IS A GENERAL SET OF GUIDELINES & CHARTS TO ASSIST THE COMPETENT PERSON IN SELECTING A SAFETY SYSTEM WITH PROPER SHORING EQUIPMENT. COMPETENT PERSON HAS SOLE RESPONSIBILITY FOR JOB SITE SAFETY & THE PROPER SELECTION OF THE SHORING EQUIPMENT.
- 13) DEPTH RATINGS ACCOUNT FOR 33% OVERSTRESS FOR TEMPORARY LOADING CONDITIONS.

Note: Depth ratings of all panels being used must meet or exceed depth of shoring, otherwise limit excavation to lowest depth rating of any components being used



Rev 0, 9/5/18

ANY USE OF THIS PRODUCT NOT SPECIFICALLY DESCRIBED ON THIS CERTIFICATE AND MANUFACTURER USE GUIDELINES COULD CAUSE CAVE-IN, COLLAPSE, OR STRUCTURAL FAILURE RESULTING IN SERIOUS INJURY OR DEATH.

Rail & Strut Tabulated Data - Double Rail With 11' Parallel Beams

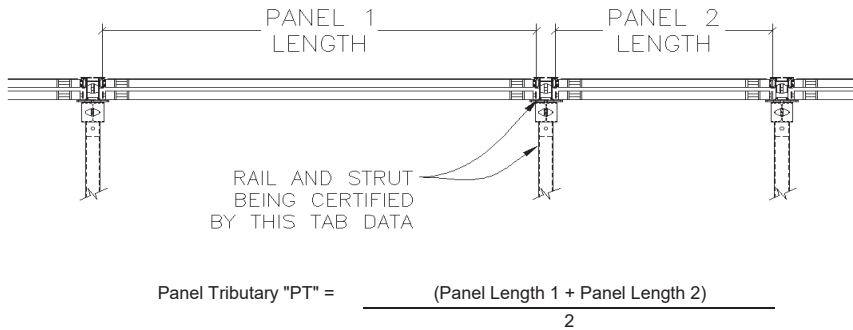


685 Hull Road, Mason, MI - (517) 676-8800

Depth Rating (ft)

Parallel Beam Configuration	Rail Type	Shoring Height (ft)	Strut Type	Max Strut Length (ft)	Max Panel Tributary "PT" (ft)	Clear to Bottom Strut "CS" (ft)	Depth Rating (ft)			
							Type B-45	Type C-60	Type C-80	
11' Parallel Beams	Double Linear Rail (SR-LPOST)	24	8" Sch. 80 Grade 50 Pipe	20	16	7.5	31	24	19	
						8.0	31	24	19	
						8.5	29	23	18	
						20	7.5	25	20	16
							8.0	25	20	16
							8.5	23	18	15
					24	7.5	21	17	14	
						8.0	21	17	14	
						8.5	20	16	13	

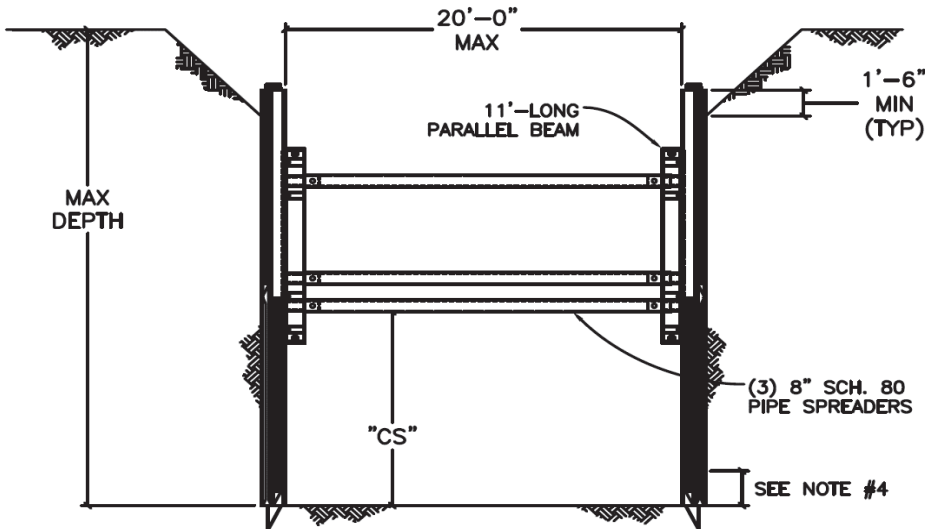
Clay with unconfined compressive strength greater than 0.5 TSF but less than 1.5 TSF, cohesionless gravel, silt, silty loam or sandy loam.	Soft cohesive soil with an unconfined compressive strength greater than 0.2 TSF, but less than 0.5 TSF, sand and loamy sand; saturated soil that is stable, dry sand, or dewatered soils.	Soft cohesive soil with an unconfined compressive strength less than 0.2 TSF. Fractured rock that is not stable, submerged soils or soils with freely seeping water.
--	---	--



NOTES & LIMITATIONS:

- 1) ALL EXCAVATIONS SHALL BE IN ACCORDANCE WITH OSHA CFR 29, PART 1926, SUBPART P.
- 2) SLIDE RAIL SYSTEM SHALL BE USED IN STRICT ACCORDANCE WITH THE INSTALLATION AND USE GUIDELINES OF THE MANUFACTURER.
- 3) 100 PSF UNIFORM SURCHARGE LOAD HAS BEEN INCLUDED IN ALL DEPTH RATINGS. DEPTH RATINGS SHALL BE REDUCED TO ACCOUNT FOR ANY SURCHARGE LOADING WHICH EXCEEDS 100 PSF. OTHERWISE SITE SPECIFIC ENGINEERING IS REQUIRED.
- 4) BOTTOM OF PANEL MUST NOT BE MORE THAN TWO FEET ABOVE BASE OF EXCAVATION PER OSHA 29 CFR PART 1926.652(g)(2).
- 5) NEVER LEAN PLATES, SHEETS OR MATERIALS OF ANY KIND AGAINST PIPE SPREADERS, AND NEVER SUSPEND LOAD FROM PIPE SPREADERS AT ANY TIME.
- 6) SOILS SHALL BE SLOPED IN ACCORDANCE WITH OSHA GUIDELINES, AND MUST EXTEND TO NO LESS THAN 18" BELOW THE TOP OF THE SHORING PANELS. ANY EXCAVATIONS WITH SLOPING THAT EXCEED 20' IN DEPTH, REQUIRE SITE SPECIFIC ENGINEERING.
- 7) THIS TABULATED DATA IS NOT INTENDED TO BE USED AS A JOB SPECIFIC SAFETY PLAN.
- 8) MEANS AND METHODS ASSOCIATED WITH THE EXCAVATION, INSTALLATION & REMOVAL OF THE SHORING SYSTEM, EVALUATION OF SURCHARGES, AND DEWATERING ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- 9) ANY MODIFICATIONS TO ANY COMPONENTS OF THE SLIDE RAIL SYSTEM, WHICH ARE NOT APPROVED IN WRITING BY EFFICIENCY PRODUCTION VOIDS THIS CERTIFICATION.
- 10) CERTIFICATION IS NOT VALID IF THE SHORING SYSTEM SHOWS EXCESSIVE WEAR, IS PERMANENTLY DAMAGED, IS NOT MAINTAINED OR REPAIRED PROPERLY.
- 11) FILL VOIDS BETWEEN FACE OF EXCAVATION AND SHORING PANELS.
- 12) THIS TABULATED DATA IS A GENERAL SET OF GUIDELINES & CHARTS TO ASSIST THE COMPETENT PERSON IN SELECTING A SAFETY SYSTEM WITH PROPER SHORING EQUIPMENT. COMPETENT PERSON HAS SOLE RESPONSIBILITY FOR JOB SITE SAFETY & THE PROPER SELECTION OF THE SHORING EQUIPMENT.
- 13) DEPTH RATINGS ACCOUNT FOR 33% OVERSTRESS FOR TEMPORARY LOADING CONDITIONS.

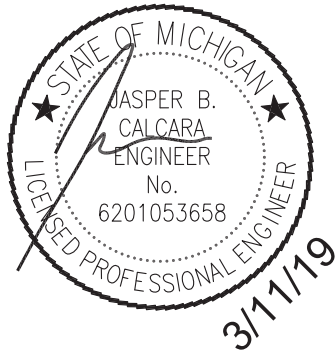
Note: Depth ratings of all panels being used must meet or exceed depth of shoring, otherwise limit excavation to lowest depth rating of any components being used



Rev 0, 9/5/18

ANY USE OF THIS PRODUCT NOT SPECIFICALLY DESCRIBED ON THIS CERTIFICATE AND MANUFACTURER USE GUIDELINES COULD CAUSE CAVE-IN, COLLAPSE, OR STRUCTURAL FAILURE RESULTING IN SERIOUS INJURY OR DEATH.

Rail & Strut Tabulated Data - Triple Rail With 16' Parallel Beams

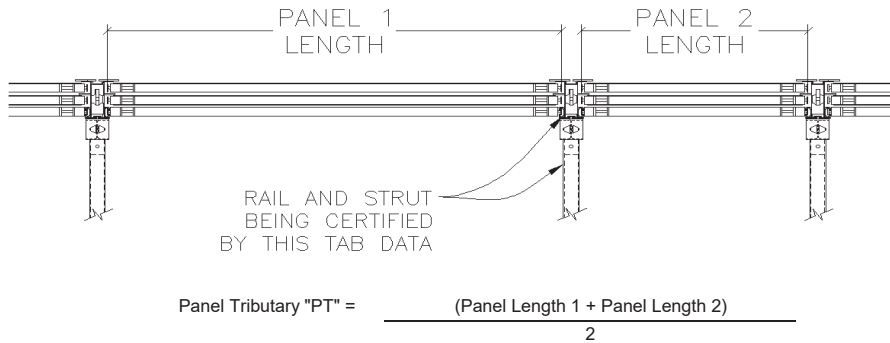


685 Hull Road, Mason, MI - (517) 676-8800

Depth Rating (ft)

Parallel Beam Configuration	Rail Type	Shoring Height (ft)	Strut Type	Max Strut Length (ft)	Max Panel Tributary "PT" (ft)	Clear to Bottom Strut "CS" (ft)	Depth Rating (ft)			
							Type B-45	Type C-60	Type C-80	
16' Parallel Beams	Triple Linear Rail (SR-TRIP)	24	8" Sch. 80 Grade 50 Pipe	20	16	7.5	32	32	20	
						8.0	32	32	20	
						8.5	32	30	20	
						20	7.5	32	31	20
							8.0	32	28	20
							8.5	32	25	20
					24	7.5	32	26	20	
						8.0	31	24	19	
						8.5	25	20	16	

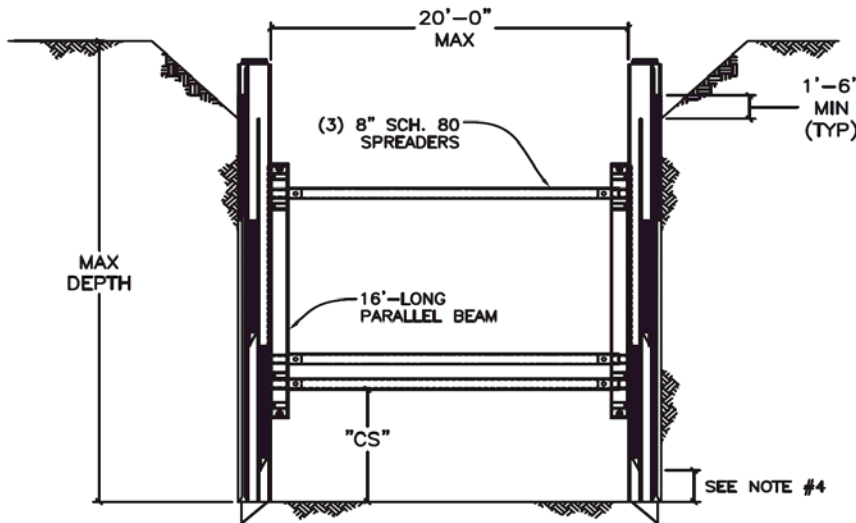
Clay with unconfined compressive strength greater than 0.5 TSF but less than 1.5 TSF, cohesionless gravel, silt, silty loam or sandy loam.	Soft cohesive soil with an unconfined compressive strength greater than 0.2 TSF, but less than 0.5 TSF, sand and loamy sand; saturated soil that is stable, dry sand, or dewatered soils.	Soft cohesive soil with an unconfined compressive strength less than 0.2 TSF. Fractured rock that is not stable, submerged soils or soils with freely seeping water.
--	---	--



NOTES & LIMITATIONS:

- 1) ALL EXCAVATIONS SHALL BE IN ACCORDANCE WITH OSHA CFR 29, PART 1926, SUBPART P.
- 2) SLIDE RAIL SYSTEM SHALL BE USED IN STRICT ACCORDANCE WITH THE INSTALLATION AND USE GUIDELINES OF THE MANUFACTURER.
- 3) 100 PSF UNIFORM SURCHARGE LOAD HAS BEEN INCLUDED IN ALL DEPTH RATINGS. DEPTH RATINGS SHALL BE REDUCED TO ACCOUNT FOR ANY SURCHARGE LOADING WHICH EXCEEDS 100 PSF. OTHERWISE SITE SPECIFIC ENGINEERING IS REQUIRED.
- 4) BOTTOM OF PANEL MUST NOT BE MORE THAN TWO FEET ABOVE BASE OF EXCAVATION PER OSHA 29 CFR PART 1926.652(g)(2).
- 5) NEVER LEAN PLATES, SHEETS OR MATERIALS OF ANY KIND AGAINST PIPE SPREADERS, AND NEVER SUSPEND LOAD FROM PIPE SPREADERS AT ANY TIME.
- 6) SOILS SHALL BE SLOPED IN ACCORDANCE WITH OSHA GUIDELINES, AND MUST EXTEND TO NO LESS THAN 18" BELOW THE TOP OF THE SHORING PANELS. ANY EXCAVATIONS WITH SLOPING THAT EXCEED 20' IN DEPTH, REQUIRE SITE SPECIFIC ENGINEERING.
- 7) THIS TABULATED DATA IS NOT INTENDED TO BE USED AS A JOB SPECIFIC SAFETY PLAN.
- 8) MEANS AND METHODS ASSOCIATED WITH THE EXCAVATION, INSTALLATION & REMOVAL OF THE SHORING SYSTEM, EVALUATION OF SURCHARGES, AND DEWATERING ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- 9) ANY MODIFICATIONS TO ANY COMPONENTS OF THE SLIDE RAIL SYSTEM, WHICH ARE NOT APPROVED IN WRITING BY EFFICIENCY PRODUCTION VOIDS THIS CERTIFICATION.
- 10) CERTIFICATION IS NOT VALID IF THE SHORING SYSTEM SHOWS EXCESSIVE WEAR, IS PERMANENTLY DAMAGED, IS NOT MAINTAINED OR REPAIRED PROPERLY.
- 11) FILL VOIDS BETWEEN FACE OF EXCAVATION AND SHORING PANELS.
- 12) THIS TABULATED DATA IS A GENERAL SET OF GUIDELINES & CHARTS TO ASSIST THE COMPETENT PERSON IN SELECTING A SAFETY SYSTEM WITH PROPER SHORING EQUIPMENT. COMPETENT PERSON HAS SOLE RESPONSIBILITY FOR JOB SITE SAFETY & THE PROPER SELECTION OF THE SHORING EQUIPMENT.
- 13) DEPTH RATINGS ACCOUNT FOR 33% OVERSTRESS FOR TEMPORARY LOADING CONDITIONS.

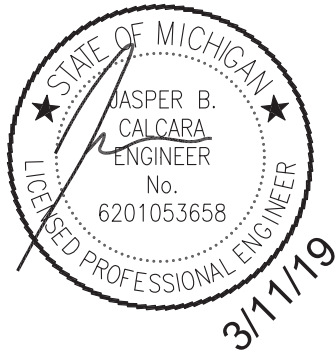
Note: Depth ratings of all panels being used must meet or exceed depth of shoring, otherwise limit excavation to lowest depth rating of any components being used



Rev 0, 9/5/18

ANY USE OF THIS PRODUCT NOT SPECIFICALLY DESCRIBED ON THIS CERTIFICATE AND MANUFACTURER USE GUIDELINES COULD CAUSE CAVE-IN, COLLAPSE, OR STRUCTURAL FAILURE RESULTING IN SERIOUS INJURY OR DEATH.

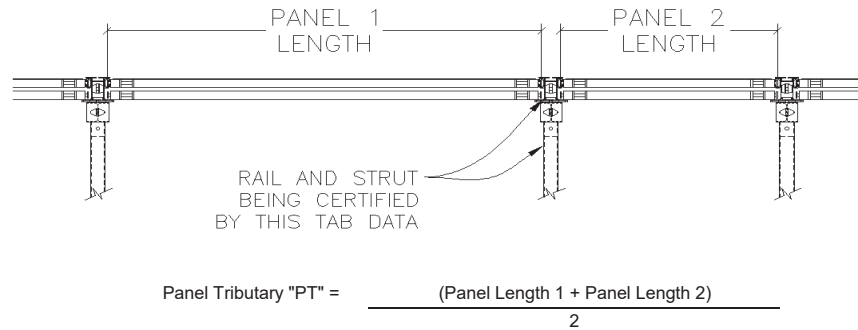
Rail & Strut Tabulated Data - Double Rail With 7' & 4' Parallel Beams



685 Hull Road, Mason, MI - (517) 676-8800

Depth Rating (ft)

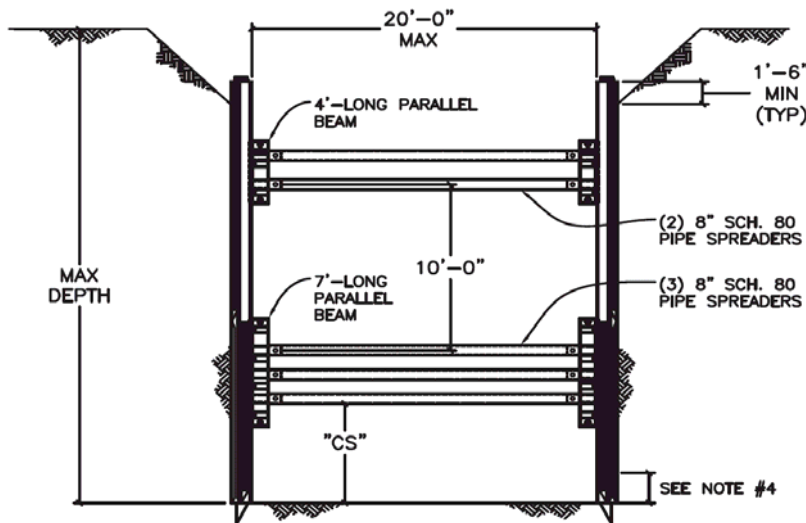
Parallel Beam Configuration	Rail Type	Shoring Height (ft)	Strut Type	Max Strut Length (ft)	Max Panel Tributary "PT" (ft)	Clear to Bottom Strut "CS" (ft)	Depth Rating (ft)				
							Type B-45	Type C-60	Type C-80		
7' + 4' Parallel Beams	Double Linear Rail (SR-LPOST)	28	8" Sch. 80 Grade 50 Pipe	20	16	7.5	Clay with unconfined compressive strength greater than 0.5 TSF but less than 1.5 TSF, cohesionless gravel, silt, silty loam or sandy loam.				
							8.0	32	29	20	
							8.5	29	23	18	
							20	7.5	31	24	19
								8.0	25	20	16
								8.5	23	18	15
					24	7.5	25	20	16		
						8.0	23	18	15		
						8.5	20	16	13		



NOTES & LIMITATIONS:

- 1) ALL EXCAVATIONS SHALL BE IN ACCORDANCE WITH OSHA CFR 29, PART 1926, SUBPART P.
- 2) SLIDE RAIL SYSTEM SHALL BE USED IN STRICT ACCORDANCE WITH THE INSTALLATION AND USE GUIDELINES OF THE MANUFACTURER.
- 3) 100 PSF UNIFORM SURCHARGE LOAD HAS BEEN INCLUDED IN ALL DEPTH RATINGS. DEPTH RATINGS SHALL BE REDUCED TO ACCOUNT FOR ANY SURCHARGE LOADING WHICH EXCEEDS 100 PSF. OTHERWISE SITE SPECIFIC ENGINEERING IS REQUIRED.
- 4) BOTTOM OF PANEL MUST NOT BE MORE THAN TWO FEET ABOVE BASE OF EXCAVATION PER OSHA 29 CFR PART 1926.652(g)(2).
- 5) NEVER LEAN PLATES, SHEETS OR MATERIALS OF ANY KIND AGAINST PIPE SPREADERS, AND NEVER SUSPEND LOAD FROM PIPE SPREADERS AT ANY TIME.
- 6) SOILS SHALL BE SLOPED IN ACCORDANCE WITH OSHA GUIDELINES, AND MUST EXTEND TO NO LESS THAN 18" BELOW THE TOP OF THE SHORING PANELS. ANY EXCAVATIONS WITH SLOPING THAT EXCEED 20' IN DEPTH, REQUIRE SITE SPECIFIC ENGINEERING.
- 7) THIS TABULATED DATA IS NOT INTENDED TO BE USED AS A JOB SPECIFIC SAFETY PLAN.
- 8) MEANS AND METHODS ASSOCIATED WITH THE EXCAVATION, INSTALLATION & REMOVAL OF THE SHORING SYSTEM, EVALUATION OF SURCHARGES, AND DEWATERING ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- 9) ANY MODIFICATIONS TO ANY COMPONENTS OF THE SLIDE RAIL SYSTEM, WHICH ARE NOT APPROVED IN WRITING BY EFFICIENCY PRODUCTION VOIDS THIS CERTIFICATION.
- 10) CERTIFICATION IS NOT VALID IF THE SHORING SYSTEM SHOWS EXCESSIVE WEAR, IS PERMANENTLY DAMAGED, IS NOT MAINTAINED OR REPAIRED PROPERLY.
- 11) FILL VOIDS BETWEEN FACE OF EXCAVATION AND SHORING PANELS.
- 12) THIS TABULATED DATA IS A GENERAL SET OF GUIDELINES & CHARTS TO ASSIST THE COMPETENT PERSON IN SELECTING A SAFETY SYSTEM WITH PROPER SHORING EQUIPMENT. COMPETENT PERSON HAS SOLE RESPONSIBILITY FOR JOB SITE SAFETY & THE PROPER SELECTION OF THE SHORING EQUIPMENT.
- 13) DEPTH RATINGS ACCOUNT FOR 33% OVERSTRESS FOR TEMPORARY LOADING CONDITIONS.

Note: Depth ratings of all panels being used must meet or exceed depth of shoring, otherwise limit excavation to lowest depth rating of any components being used



Rev 0, 9/5/18

ANY USE OF THIS PRODUCT NOT SPECIFICALLY DESCRIBED ON THIS CERTIFICATE AND MANUFACTURER USE GUIDELINES COULD CAUSE CAVE-IN, COLLAPSE, OR STRUCTURAL FAILURE RESULTING IN SERIOUS INJURY OR DEATH.

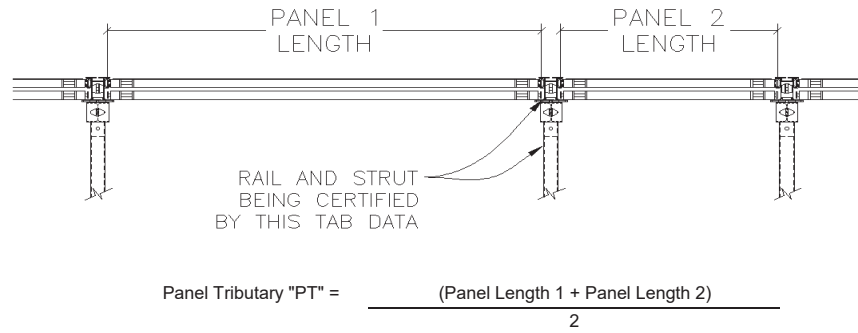
Rail & Strut Tabulated Data - Double Rail With 11' & 4' Parallel Beams



685 Hull Road, Mason, MI - (517) 676-8800

Depth Rating (ft)

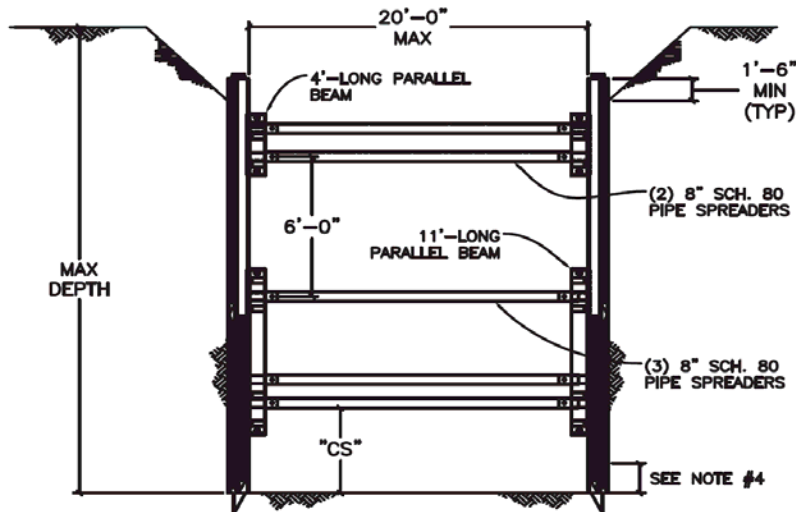
Parallel Beam Configuration	Rail Type	Shoring Height (ft)	Strut Type	Max Strut Length (ft)	Max Panel Tributary "PT" (ft)	Clear to Bottom Strut "CS" (ft)	Depth Rating (ft)				
							Type B-45	Type C-60	Type C-80		
11' + 4' Parallel Beams	Double Linear Rail (SR-LPOST)	28	8" Sch. 80 Grade 50 Pipe	20	16	7.5	Clay with unconfined compressive strength greater than 0.5 TSF but less than 1.5 TSF, cohesionless gravel, silt, silty loam or sandy loam.				
							8.0	32	29	20	
							8.5	29	23	18	
							20	7.5	31	24	19
								8.0	25	20	16
								8.5	23	18	15
					24	7.5	25	20	16		
						8.0	23	18	15		
						8.5	20	16	13		



NOTES & LIMITATIONS:

- 1) ALL EXCAVATIONS SHALL BE IN ACCORDANCE WITH OSHA CFR 29, PART 1926, SUBPART P.
- 2) SLIDE RAIL SYSTEM SHALL BE USED IN STRICT ACCORDANCE WITH THE INSTALLATION AND USE GUIDELINES OF THE MANUFACTURER.
- 3) 100 PSF UNIFORM SURCHARGE LOAD HAS BEEN INCLUDED IN ALL DEPTH RATINGS. DEPTH RATINGS SHALL BE REDUCED TO ACCOUNT FOR ANY SURCHARGE LOADING WHICH EXCEEDS 100 PSF. OTHERWISE SITE SPECIFIC ENGINEERING IS REQUIRED.
- 4) BOTTOM OF PANEL MUST NOT BE MORE THAN TWO FEET ABOVE BASE OF EXCAVATION PER OSHA 29 CFR PART 1926.652(g)(2).
- 5) NEVER LEAN PLATES, SHEETS OR MATERIALS OF ANY KIND AGAINST PIPE SPREADERS, AND NEVER SUSPEND LOAD FROM PIPE SPREADERS AT ANY TIME.
- 6) SOILS SHALL BE SLOPED IN ACCORDANCE WITH OSHA GUIDELINES, AND MUST EXTEND TO NO LESS THAN 18" BELOW THE TOP OF THE SHORING PANELS. ANY EXCAVATIONS WITH SLOPING THAT EXCEED 20' IN DEPTH, REQUIRE SITE SPECIFIC ENGINEERING.
- 7) THIS TABULATED DATA IS NOT INTENDED TO BE USED AS A JOB SPECIFIC SAFETY PLAN.
- 8) MEANS AND METHODS ASSOCIATED WITH THE EXCAVATION, INSTALLATION & REMOVAL OF THE SHORING SYSTEM, EVALUATION OF SURCHARGES, AND DEWATERING ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- 9) ANY MODIFICATIONS TO ANY COMPONENTS OF THE SLIDE RAIL SYSTEM, WHICH ARE NOT APPROVED IN WRITING BY EFFICIENCY PRODUCTION VOIDS THIS CERTIFICATION.
- 10) CERTIFICATION IS NOT VALID IF THE SHORING SYSTEM SHOWS EXCESSIVE WEAR, IS PERMANENTLY DAMAGED, IS NOT MAINTAINED OR REPAIRED PROPERLY.
- 11) FILL VOIDS BETWEEN FACE OF EXCAVATION AND SHORING PANELS.
- 12) THIS TABULATED DATA IS A GENERAL SET OF GUIDELINES & CHARTS TO ASSIST THE COMPETENT PERSON IN SELECTING A SAFETY SYSTEM WITH PROPER SHORING EQUIPMENT. COMPETENT PERSON HAS SOLE RESPONSIBILITY FOR JOB SITE SAFETY & THE PROPER SELECTION OF THE SHORING EQUIPMENT.
- 13) DEPTH RATINGS ACCOUNT FOR 33% OVERSTRESS FOR TEMPORARY LOADING CONDITIONS.

Note: Depth ratings of all panels being used must meet or exceed depth of shoring, otherwise limit excavation to lowest depth rating of any components being used



Rev 0, 9/5/18

ANY USE OF THIS PRODUCT NOT SPECIFICALLY DESCRIBED ON THIS CERTIFICATE AND MANUFACTURER USE GUIDELINES COULD CAUSE CAVE-IN, COLLAPSE, OR STRUCTURAL FAILURE RESULTING IN SERIOUS INJURY OR DEATH.

Rail & Strut Tabulated Data - Triple Rail With (2) 7' Parallel Beams

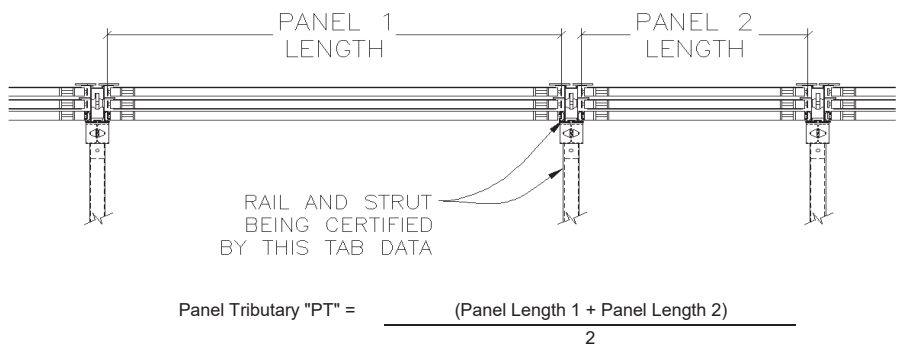


685 Hull Road, Mason, MI - (517) 676-8800

Depth Rating (ft)

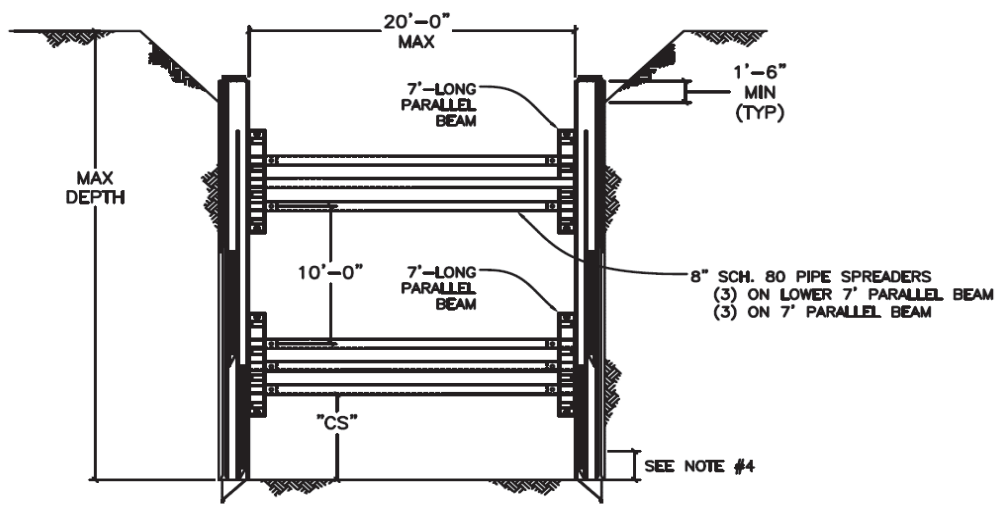
Type B-45	Type C-60	Type C-80
Clay with unconfined compressive strength greater than 0.5 TSF but less than 1.5 TSF, cohesionless gravel, silt, silty loam or sandy loam.	Soft cohesive soil with an unconfined compressive strength greater than 0.2 TSF, but less than 0.5 TSF, sand and loamy sand; saturated soil that is stable, dry sand, or dewatered soils.	Soft cohesive soil with an unconfined compressive strength less than 0.2 TSF. Fractured rock that is not stable, submerged soils or soils with freely seeping water.

Parallel Beam Configuration	Rail Type	Shoring Height (ft)	Strut Type	Max Strut Length (ft)	Max Panel Tributary "PT" (ft)	Clear to Bottom Strut "CS" (ft)
7' + 7' Parallel Beams	Triple Linear Rail (SR-TRIP)	32	8" Sch. 80 Grade 50 Pipe	20	16	7.5
						8.0
						8.5
					20	7.5
						8.0
						8.5
					24	7.5
						8.0
						8.5



NOTES & LIMITATIONS:

- 1) ALL EXCAVATIONS SHALL BE IN ACCORDANCE WITH OSHA CFR 29, PART 1926, SUBPART P.
- 2) SLIDE RAIL SYSTEM SHALL BE USED IN STRICT ACCORDANCE WITH THE INSTALLATION AND USE GUIDELINES OF THE MANUFACTURER.
- 3) 100 PSF UNIFORM SURCHARGE LOAD HAS BEEN INCLUDED IN ALL DEPTH RATINGS. DEPTH RATINGS SHALL BE REDUCED TO ACCOUNT FOR ANY SURCHARGE LOADING WHICH EXCEEDS 100 PSF. OTHERWISE SITE SPECIFIC ENGINEERING IS REQUIRED.
- 4) BOTTOM OF PANEL MUST NOT BE MORE THAN TWO FEET ABOVE BASE OF EXCAVATION PER OSHA 29 CFR PART 1926.652(g)(2).
- 5) NEVER LEAN PLATES, SHEETS OR MATERIALS OF ANY KIND AGAINST PIPE SPREADERS, AND NEVER SUSPEND LOAD FROM PIPE SPREADERS AT ANY TIME.
- 6) SOILS SHALL BE SLOPED IN ACCORDANCE WITH OSHA GUIDELINES, AND MUST EXTEND TO NO LESS THAN 18" BELOW THE TOP OF THE SHORING PANELS. ANY EXCAVATIONS WITH SLOPING THAT EXCEED 20' IN DEPTH, REQUIRE SITE SPECIFIC ENGINEERING.
- 7) THIS TABULATED DATA IS NOT INTENDED TO BE USED AS A JOB SPECIFIC SAFETY PLAN.
- 8) MEANS AND METHODS ASSOCIATED WITH THE EXCAVATION, INSTALLATION & REMOVAL OF THE SHORING SYSTEM, EVALUATION OF SURCHARGES, AND DEWATERING ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- 9) ANY MODIFICATIONS TO ANY COMPONENTS OF THE SLIDE RAIL SYSTEM, WHICH ARE NOT APPROVED IN WRITING BY EFFICIENCY PRODUCTION VOIDS THIS CERTIFICATION.
- 10) CERTIFICATION IS NOT VALID IF THE SHORING SYSTEM SHOWS EXCESSIVE WEAR, IS PERMANENTLY DAMAGED, IS NOT MAINTAINED OR REPAIRED PROPERLY.
- 11) FILL VOIDS BETWEEN FACE OF EXCAVATION AND SHORING PANELS.
- 12) THIS TABULATED DATA IS A GENERAL SET OF GUIDELINES & CHARTS TO ASSIST THE COMPETENT PERSON IN SELECTING A SAFETY SYSTEM WITH PROPER SHORING EQUIPMENT. COMPETENT PERSON HAS SOLE RESPONSIBILITY FOR JOB SITE SAFETY & THE PROPER SELECTION OF THE SHORING EQUIPMENT.
- 13) DEPTH RATINGS ACCOUNT FOR 33% OVERSTRESS FOR TEMPORARY LOADING CONDITIONS.



Rev 0, 9/5/18

ANY USE OF THIS PRODUCT NOT SPECIFICALLY DESCRIBED ON THIS CERTIFICATE AND MANUFACTURER USE GUIDELINES COULD CAUSE CAVE-IN, COLLAPSE, OR STRUCTURAL FAILURE RESULTING IN SERIOUS INJURY OR DEATH.

Rail & Strut Tabulated Data - Triple Rail With 16' & 4' Parallel Beams

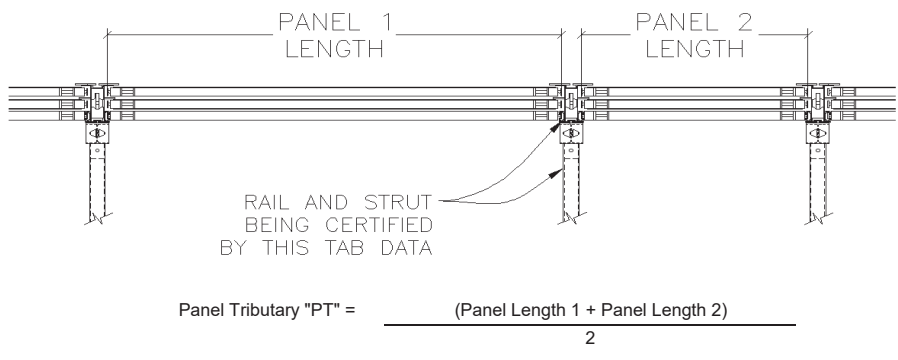


685 Hull Road, Mason, MI - (517) 676-8800

Depth Rating (ft)

Parallel Beam Configuration	Rail Type	Shoring Height (ft)	Strut Type	Max Strut Length (ft)	Max Panel Tributary "PT" (ft)	Clear to Bottom Strut "CS" (ft)	Depth Rating (ft)			
							Type B-45	Type C-60	Type C-80	
16' + 4' Parallel Beams	Triple Linear Rail (SR-TRIP)	32	8" Sch. 80 Grade 50 Pipe	20	16	7.5	32	32	20	
						8.0	32	32	20	
						8.5	32	30	20	
						20	7.5	32	28	20
							8.0	32	27	20
							8.5	32	25	20
					24	7.5	31	24	19	
						8.0	29	23	18	
						8.5	27	21	17	

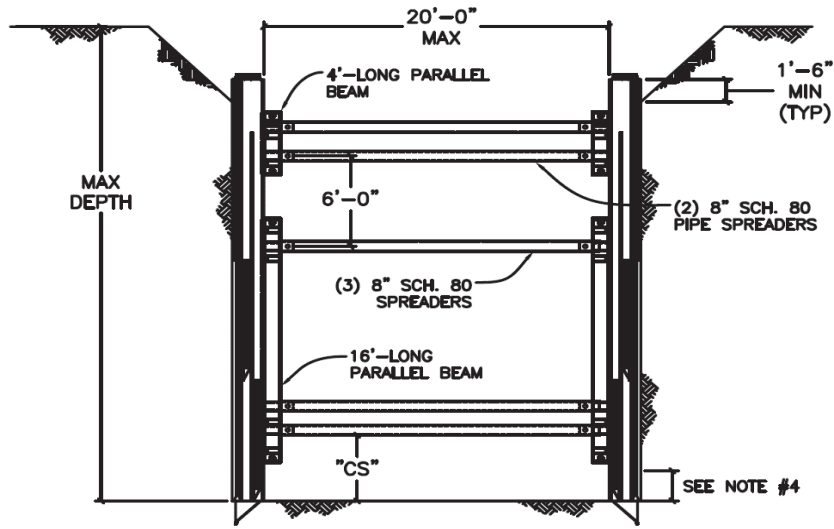
Clay with unconfined compressive strength greater than 0.5 TSF but less than 1.5 TSF, cohesionless gravel, silt, silty loam or sandy loam.	Soft cohesive soil with an unconfined compressive strength greater than 0.2 TSF, but less than 0.5 TSF, sand and loamy sand; saturated soil that is stable, dry sand, or dewatered soils.	Soft cohesive soil with an unconfined compressive strength less than 0.2 TSF. Fractured rock that is not stable, submerged soils or soils with freely seeping water.
--	---	--



NOTES & LIMITATIONS:

- 1) ALL EXCAVATIONS SHALL BE IN ACCORDANCE WITH OSHA CFR 29, PART 1926, SUBPART P.
- 2) SLIDE RAIL SYSTEM SHALL BE USED IN STRICT ACCORDANCE WITH THE INSTALLATION AND USE GUIDELINES OF THE MANUFACTURER.
- 3) 100 PSF UNIFORM SURCHARGE LOAD HAS BEEN INCLUDED IN ALL DEPTH RATINGS. DEPTH RATINGS SHALL BE REDUCED TO ACCOUNT FOR ANY SURCHARGE LOADING WHICH EXCEEDS 100 PSF. OTHERWISE SITE SPECIFIC ENGINEERING IS REQUIRED.
- 4) BOTTOM OF PANEL MUST NOT BE MORE THAN TWO FEET ABOVE BASE OF EXCAVATION PER OSHA 29 CFR PART 1926.652(g)(2).
- 5) NEVER LEAN PLATES, SHEETS OR MATERIALS OF ANY KIND AGAINST PIPE SPREADERS, AND NEVER SUSPEND LOAD FROM PIPE SPREADERS AT ANY TIME.
- 6) SOILS SHALL BE SLOPED IN ACCORDANCE WITH OSHA GUIDELINES, AND MUST EXTEND TO NO LESS THAN 18" BELOW THE TOP OF THE SHORING PANELS. ANY EXCAVATIONS WITH SLOPING THAT EXCEED 20' IN DEPTH, REQUIRE SITE SPECIFIC ENGINEERING.
- 7) THIS TABULATED DATA IS NOT INTENDED TO BE USED AS A JOB SPECIFIC SAFETY PLAN.
- 8) MEANS AND METHODS ASSOCIATED WITH THE EXCAVATION, INSTALLATION & REMOVAL OF THE SHORING SYSTEM, EVALUATION OF SURCHARGES, AND DEWATERING ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- 9) ANY MODIFICATIONS TO ANY COMPONENTS OF THE SLIDE RAIL SYSTEM, WHICH ARE NOT APPROVED IN WRITING BY EFFICIENCY PRODUCTION VOIDS THIS CERTIFICATION.
- 10) CERTIFICATION IS NOT VALID IF THE SHORING SYSTEM SHOWS EXCESSIVE WEAR, IS PERMANENTLY DAMAGED, IS NOT MAINTAINED OR REPAIRED PROPERLY.
- 11) FILL VOIDS BETWEEN FACE OF EXCAVATION AND SHORING PANELS.
- 12) THIS TABULATED DATA IS A GENERAL SET OF GUIDELINES & CHARTS TO ASSIST THE COMPETENT PERSON IN SELECTING A SAFETY SYSTEM WITH PROPER SHORING EQUIPMENT. COMPETENT PERSON HAS SOLE RESPONSIBILITY FOR JOB SITE SAFETY & THE PROPER SELECTION OF THE SHORING EQUIPMENT.
- 13) DEPTH RATINGS ACCOUNT FOR 33% OVERSTRESS FOR TEMPORARY LOADING CONDITIONS.

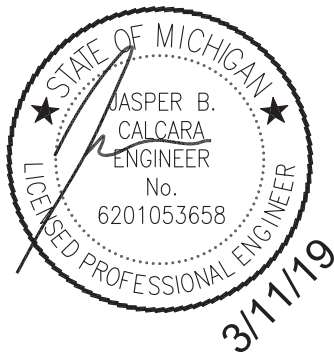
Note: Depth ratings of all panels being used must meet or exceed depth of shoring, otherwise limit excavation to lowest depth rating of any components being used



Rev 0, 9/5/18

ANY USE OF THIS PRODUCT NOT SPECIFICALLY DESCRIBED ON THIS CERTIFICATE AND MANUFACTURER USE GUIDELINES COULD CAUSE CAVE-IN, COLLAPSE, OR STRUCTURAL FAILURE RESULTING IN SERIOUS INJURY OR DEATH.

Rail & Strut Tabulated Data - Triple Rail With 11' & 4' Parallel Beams

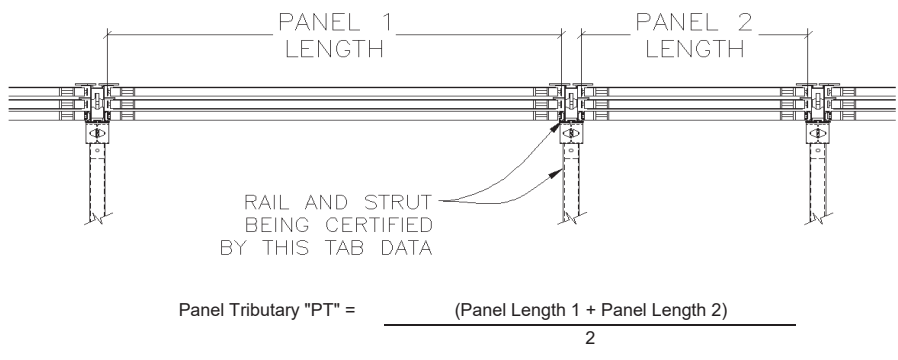


685 Hull Road, Mason, MI - (517) 676-8800

Depth Rating (ft)

Parallel Beam Configuration	Rail Type	Shoring Height (ft)	Strut Type	Max Strut Length (ft)	Max Panel Tributary "PT" (ft)	Clear to Bottom Strut "CS" (ft)	Depth Rating (ft)			
							Type B-45	Type C-60	Type C-80	
11' + 4' Parallel Beams	Triple Linear Rail (SR-TRIP)	32	8" Sch. 80 Grade 50 Pipe	20	16	7.5	32	32	20	
						8.0	32	32	20	
						8.5	32	30	20	
						20	7.5	32	28	20
							8.0	32	27	20
							8.5	32	25	20
					24	7.5	31	24	19	
						8.0	29	23	18	
						8.5	27	21	17	

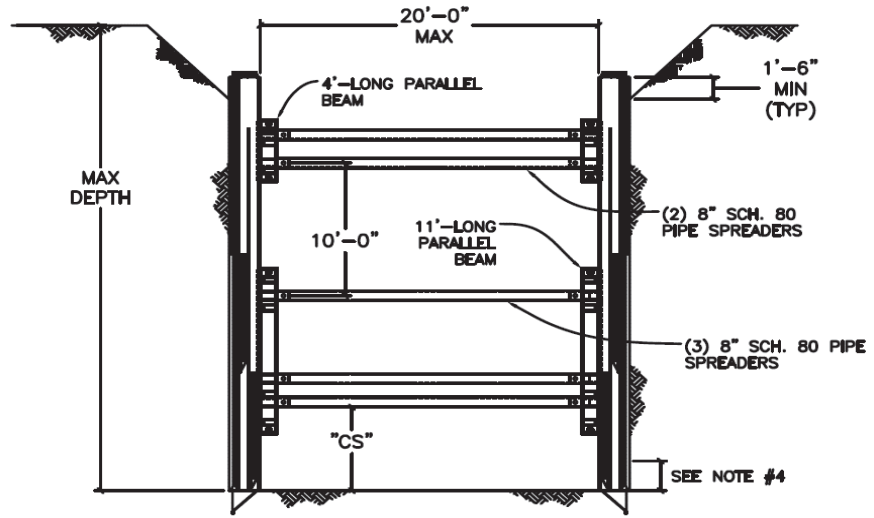
Clay with unconfined compressive strength greater than 0.5 TSF but less than 1.5 TSF, cohesionless gravel, silt, silty loam or sandy loam.	Soft cohesive soil with an unconfined compressive strength greater than 0.2 TSF, but less than 0.5 TSF, sand and loamy sand; saturated soil that is stable, dry sand, or dewatered soils.	Soft cohesive soil with an unconfined compressive strength less than 0.2 TSF. Fractured rock that is not stable, submerged soils or soils with freely seeping water.
--	---	--



NOTES & LIMITATIONS:

- 1) ALL EXCAVATIONS SHALL BE IN ACCORDANCE WITH OSHA CFR 29, PART 1926, SUBPART P.
- 2) SLIDE RAIL SYSTEM SHALL BE USED IN STRICT ACCORDANCE WITH THE INSTALLATION AND USE GUIDELINES OF THE MANUFACTURER.
- 3) 100 PSF UNIFORM SURCHARGE LOAD HAS BEEN INCLUDED IN ALL DEPTH RATINGS. DEPTH RATINGS SHALL BE REDUCED TO ACCOUNT FOR ANY SURCHARGE LOADING WHICH EXCEEDS 100 PSF. OTHERWISE SITE SPECIFIC ENGINEERING IS REQUIRED.
- 4) BOTTOM OF PANEL MUST NOT BE MORE THAN TWO FEET ABOVE BASE OF EXCAVATION PER OSHA 29 CFR PART 1926.652(g)(2).
- 5) NEVER LEAN PLATES, SHEETS OR MATERIALS OF ANY KIND AGAINST PIPE SPREADERS, AND NEVER SUSPEND LOAD FROM PIPE SPREADERS AT ANY TIME.
- 6) SOILS SHALL BE SLOPED IN ACCORDANCE WITH OSHA GUIDELINES, AND MUST EXTEND TO NO LESS THAN 18" BELOW THE TOP OF THE SHORING PANELS. ANY EXCAVATIONS WITH SLOPING THAT EXCEED 20' IN DEPTH, REQUIRE SITE SPECIFIC ENGINEERING.
- 7) THIS TABULATED DATA IS NOT INTENDED TO BE USED AS A JOB SPECIFIC SAFETY PLAN.
- 8) MEANS AND METHODS ASSOCIATED WITH THE EXCAVATION, INSTALLATION & REMOVAL OF THE SHORING SYSTEM, EVALUATION OF SURCHARGES, AND DEWATERING ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- 9) ANY MODIFICATIONS TO ANY COMPONENTS OF THE SLIDE RAIL SYSTEM, WHICH ARE NOT APPROVED IN WRITING BY EFFICIENCY PRODUCTION VOIDS THIS CERTIFICATION.
- 10) CERTIFICATION IS NOT VALID IF THE SHORING SYSTEM SHOWS EXCESSIVE WEAR, IS PERMANENTLY DAMAGED, IS NOT MAINTAINED OR REPAIRED PROPERLY.
- 11) FILL VOIDS BETWEEN FACE OF EXCAVATION AND SHORING PANELS.
- 12) THIS TABULATED DATA IS A GENERAL SET OF GUIDELINES & CHARTS TO ASSIST THE COMPETENT PERSON IN SELECTING A SAFETY SYSTEM WITH PROPER SHORING EQUIPMENT. COMPETENT PERSON HAS SOLE RESPONSIBILITY FOR JOB SITE SAFETY & THE PROPER SELECTION OF THE SHORING EQUIPMENT.
- 13) DEPTH RATINGS ACCOUNT FOR 33% OVERSTRESS FOR TEMPORARY LOADING CONDITIONS.

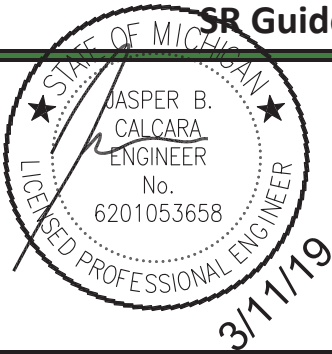
Note: Depth ratings of all panels being used must meet or exceed depth of shoring, otherwise limit excavation to lowest depth rating of any components being used



Rev 0, 9/5/18

ANY USE OF THIS PRODUCT NOT SPECIFICALLY DESCRIBED ON THIS CERTIFICATE AND MANUFACTURER USE GUIDELINES COULD CAUSE CAVE-IN, COLLAPSE, OR STRUCTURAL FAILURE RESULTING IN SERIOUS INJURY OR DEATH.

SR Guide Frame Tab Data - Slide Rail Panels Behind Guide Frame



685 Hull Road, Mason, MI - (517) 676-8800

Model Number	Panel Height (ft)	Panel Length (ft)	Inside Panel Moment of Inertia (in ⁴)	Moment Rating (k-ft)	Shear Rating (k)	Uniform Load Rating (klf)
SR-GUIDE-48KE	4	8	452	395	250	63.5
SR-GUIDE-410KE	4	10	452	395	250	45.9
SR-GUIDE-412KE	4	12	452	395	250	29.8
SR-GUIDE-414KE	4	14	452	395	250	20.9
SR-GUIDE-416KE	4	16	452	395	250	15.5
SR-GUIDE-418KE	4	18	531	465	300	14.0
SR-GUIDE-420KE	4	20	645	563	300	13.5
SR-GUIDE-424KE	4	24	936	805	400	15.6
SR-GUIDE-426KE	4	26	975	805	400	10.9

	Model Number	"X" Distance Under SR-GUIDE (ft)	Max Depth (ft) in Configuration Shown		
			Type B-45	Type C-60	Type C-80
			SR-GUIDE-48KE Thru SR-GUIDE-426KE	5	32
	5.5	32	32	20	
	6	32	29	20	
	6.5	31	25	19	
	7	26	21	16	
	7.5	23	19	14	
	8	20	17	13	
	8.5	18	15	11	
	9	16	14	11	

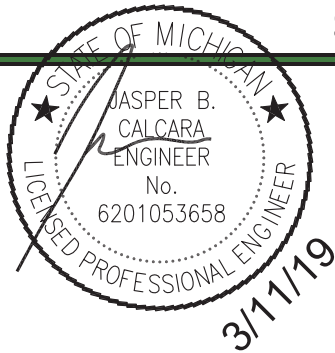
Notes & Limitations:

Rev 0, 10/4/18

- 1.) ALL EXCAVATIONS SHALL BE IN ACCORDANCE WITH OSHA CFR 29, PART 1926, SUBPART P.
- 2.) SLIDE RAIL SYSTEM SHALL BE USED IN STRICT ACCORDANCE WITH THE INSTALLATION AND USE GUIDELINES OF THE MANUFACTURER.
- 3.) 100 PSF UNIFORM SURCHARGE LOAD HAS BEEN INCLUDED IN ALL DEPTH RATINGS. DEPTH RATINGS SHALL BE REDUCED TO ACCOUNT FOR ANY SURCHARGE LOADING WHICH EXCEEDS 100 PSF, OTHERWISE SITE SPECIFIC ENGINEERING IS REQUIRED.
- 4.) BOTTOM OF SHORING MUST NOT BE MORE THAN TWO FEET ABOVE BASE OF EXCAVATION PER OSHA 29 CFR PART 1926.652(g)(2).
- 5.) SOILS SHALL BE SLOPED IN ACCORDANCE WITH OSHA GUIDELINES, AND MUST EXTEND TO NO LESS THAN 18" BELOW THE TOP OF THE SHORING PANELS. ANY EXCAVATIONS WITH SLOPING THAT EXCEED 20' IN DEPTH, REQUIRE SITE SPECIFIC ENGINEERING.
- 6.) ALL OTHER COMPONENTS OF THE SLIDE RAIL SYSTEM, INCLUDING PANELS, RAILS, STRUTS, MUST BE CERTIFIED FOR INTENDED USE AND DEPTH UNDER SEPARATE PE STAMPED TABULATED DATA, OTHERWISE PE STAMPED SITE SPECIFIC ENGINEERING IS REQUIRED. THIS TABULATED DATA IS NOT INTENDED TO BE USED AS A JOB SPECIFIC SAFETY PLAN.
- 7.) MEANS AND METHODS ASSOCIATED WITH THE EXCAVATION, INSTALLATION & REMOVAL OF THE SHORING SYSTEM, EVALUATION OF SURCHARGES, AND DEWATERING ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- 8.) ANY MODIFICATIONS TO SHORING WHICH ARE NOT APPROVED IN WRITING BY EFFICIENCY PRODUCTION, VOIDS THIS CERTIFICATION.
- 9.) CERTIFICATION IS NOT VALID IF SHORING SYSTEM SHOWS EXCESSIVE WEAR, IS PERMANENTLY DAMAGED, IS NOT MAINTAINED PROPERLY.
- 10.) FILL VOIDS BETWEEN FACE OF EXCAVATION AND SHORING.
- 11.) THIS TAB DATA IS A GENERAL SET OF GUIDELINES & CHARTS TO ASSIST THE COMPETENT PERSON IN SELECTING A SAFETY SYSTEM WITH PROPER SHORING. COMPETENT PERSON HAS SOLE RESPONSIBILITY FOR JOB SITE SAFETY & THE PROPER SELECTION OF SHORING EQUIPMENT.
- 12.) DEPTH AND PRESSURE RATINGS ACCOUNT FOR 33% OVERSTRESS FOR TEMPORARY LOADING CONDITIONS.

ANY USE OF THIS PRODUCT NOT SPECIFICALLY DESCRIBED ON THIS CERTIFICATE AND MANUFACTURER USE GUIDELINES COULD CAUSE CAVE-IN, COLLAPSE, OR STRUCTURAL FAILURE RESULTING IN SERIOUS INJURY OR DEATH.

SR Guide Frame Tab Data - No Slide Rail Panels



685 Hull Road, Mason, MI - (517) 676-8800

Model Number	Panel Height (ft)	Panel Length (ft)	Inside Panel Moment of Inertia (in ⁴)	Moment Rating (k-ft)	Shear Rating (k)	Uniform Load Rating (klf)
SR-GUIDE-48KE	4	8	452	395	250	63.5
SR-GUIDE-410KE	4	10	452	395	250	45.9
SR-GUIDE-412KE	4	12	452	395	250	29.8
SR-GUIDE-414KE	4	14	452	395	250	20.9
SR-GUIDE-416KE	4	16	452	395	250	15.5
SR-GUIDE-418KE	4	18	531	465	300	14.0
SR-GUIDE-420KE	4	20	645	563	300	13.5
SR-GUIDE-424KE	4	24	936	805	400	15.6
SR-GUIDE-426KE	4	26	975	805	400	10.9

	Model Number	"X" Distance Under SR-GUIDE (ft)	Max Depth (ft) in Configuration Shown		
			Type B-45	Type C-60	Type C-80
			SR-GUIDE-48KE	9	15
SR-GUIDE-410KE	9	15	13	10	
SR-GUIDE-412KE	9	15	13	10	
SR-GUIDE-414KE	9	15	13	10	
SR-GUIDE-416KE	9	15	13	10	
SR-GUIDE-418KE	9	15	13	10	
SR-GUIDE-420KE	9	15	13	10	
SR-GUIDE-424KE	9	15	13	10	
SR-GUIDE-426KE	9	15	13	10	

Notes & Limitations:

Rev 0, 10/4/18

- 1.) ALL EXCAVATIONS SHALL BE IN ACCORDANCE WITH OSHA CFR 29, PART 1926, SUBPART P.
- 2.) SLIDE RAIL SYSTEM SHALL BE USED IN STRICT ACCORDANCE WITH THE INSTALLATION AND USE GUIDELINES OF THE MANUFACTURER.
- 3.) 100 PSF UNIFORM SURCHARGE LOAD HAS BEEN INCLUDED IN ALL DEPTH RATINGS. DEPTH RATINGS SHALL BE REDUCED TO ACCOUNT FOR ANY SURCHARGE LOADING WHICH EXCEEDS 100 PSF, OTHERWISE SITE SPECIFIC ENGINEERING IS REQUIRED.
- 4.) BOTTOM OF SHORING MUST NOT BE MORE THAN TWO FEET ABOVE BASE OF EXCAVATION PER OSHA 29 CFR PART 1926.652(g)(2).
- 5.) SOILS SHALL BE SLOPED IN ACCORDANCE WITH OSHA GUIDELINES, AND MUST EXTEND TO NO LESS THAN 18" BELOW THE TOP OF THE SHORING PANELS. ANY EXCAVATIONS WITH SLOPING THAT EXCEED 20' IN DEPTH, REQUIRE SITE SPECIFIC ENGINEERING.
- 6.) ALL OTHER COMPONENTS OF THE SLIDE RAIL SYSTEM, INCLUDING PANELS, RAILS, STRUTS, MUST BE CERTIFIED FOR INTENDED USE AND DEPTH UNDER SEPARATE PE STAMPED TABULATED DATA, OTHERWISE PE STAMPED SITE SPECIFIC ENGINEERING IS REQUIRED. THIS TABULATED DATA IS NOT INTENDED TO BE USED AS A JOB SPECIFIC SAFETY PLAN.
- 7.) MEANS AND METHODS ASSOCIATED WITH THE EXCAVATION, INSTALLATION & REMOVAL OF THE SHORING SYSTEM, EVALUATION OF SURCHARGES, AND DEWATERING ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- 8.) ANY MODIFICATIONS TO SHORING WHICH ARE NOT APPROVED IN WRITING BY EFFICIENCY PRODUCTION, VOIDS THIS CERTIFICATION.
- 9.) CERTIFICATION IS NOT VALID IF SHORING SYSTEM SHOWS EXCESSIVE WEAR, IS PERMANENTLY DAMAGED, IS NOT MAINTAINED PROPERLY.
- 10.) FILL VOIDS BETWEEN FACE OF EXCAVATION AND SHORING.
- 11.) THIS TAB DATA IS A GENERAL SET OF GUIDELINES & CHARTS TO ASSIST THE COMPETENT PERSON IN SELECTING A SAFETY SYSTEM WITH PROPER SHORING. COMPETENT PERSON HAS SOLE RESPONSIBILITY FOR JOB SITE SAFETY & THE PROPER SELECTION OF SHORING EQUIPMENT.
- 12.) DEPTH AND PRESSURE RATINGS ACCOUNT FOR 33% OVERSTRESS FOR TEMPORARY LOADING CONDITIONS.

ANY USE OF THIS PRODUCT NOT SPECIFICALLY DESCRIBED ON THIS CERTIFICATE AND MANUFACTURER USE GUIDELINES COULD CAUSE CAVE-IN, COLLAPSE, OR STRUCTURAL FAILURE RESULTING IN SERIOUS INJURY OR DEATH.