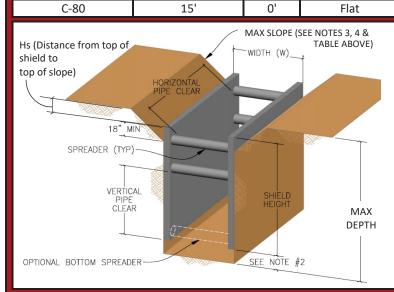


trench shield



(980) 689-4389 18805 W Catawba - Cornelius, NC

Model Number	TSB4-820	Spreader Size		8" Sch. 80	Pressure Rating	971 psf
Serial Number	TSB4820-2008A	Spread	er Yield Strength	35 ksi	Weight	10,000 lb.
Height	8'	Max S	preader Length	20'	Vert. Pipe Clear	60"
Length	20'	Spread	der Pin Diameter	2"	Horiz. Pipe Clear	17'-11"
Wall Thickness	4"	Pin	Yield Strength	100 ksi		
SOIL TYPE Max Depth		Hs	Max Slope	Sloping & Shoring		
30IL TTPE	Max Depth	пэ	iviax Slope	'	exceed limits outlined in table t	or corresponding soil
A-25	40'	10.5'	3/4(Horiz.): 1(Vert.)	types.		
B-45	24'	8.5'	5' 1(Horiz.): 1(Vert.) 3) If "Max Depth" is 20' or less, slope and shore per OSHA guide 3) If "Max Depth" exceeds 20', slope angle shall not exceed "Max Depth" exceeds 20', slope angle shall not exceed "Max Depth" exceeds 20', slope angle shall not exceed "Max Depth" exceeds 20', slope angle shall not exceed "Max Depth" exceeds 20', slope angle shall not exceed "Max Depth" exceeds 20', slope angle shall not exceed "Max Depth" exceeds 20', slope angle shall not exceed "Max Depth" exceeds 20', slope angle shall not exceed "Max Depth" exceeds 20', slope angle shall not exceed "Max Depth" exceeds 20', slope angle shall not exceed "Max Depth" exceeds 20', slope angle shall not exceed "Max Depth" exceeds 20', slope angle shall not exceed "Max Depth" exceeds 20', slope angle shall not exceed "Max Depth" exceeds 20', slope angle shall not exceed "Max Depth" exceeds 20', slope angle shall not exceed "Max Depth" exceeds 20'.		9	
C-60	19'	6.5' 1.5(Horiz.): 1(Vert.)		'	d to top of slope shall not exce	' '



33% Shoring Use Factor Included in Max Depth Ratings	Yes
Surcharge Pressure Included in Max Depth Ratings*	72 psf

table for corresponding soil types.

*All equipment and materials shall be kept a sufficient distance clear of the shoring, as directed by a licensed Professional Engineer, to ensure this surcharge limit is not exceeded.

Soil shall be classified by a Competent Person as type A, B or C, as defined by OSHA regulations, except as noted below:

- 1) A type C-60 soil is defined as a clay or moist granular soil that is not flowing or submerged. This soil can be cut vertically and will stand long enough to safely install protective system.
- 2) If the soil is submerged or has freely seeping water, it shall be classified as a
- 3) Shielding shall never be used in soft clays, organic peat or other flowing materials.

NOTES & LIMITATIONS:

- 1) Refer to page 2 for manufacturer's assembly instructions
- 2) Excavation 2' below bottom of shield is only permitted when there is no indication of possible loss of soil from behind or below the bottom of the shield.
- 3) Sloped soils must extend to no less than 18" below the top of the shield, as shown in diagram above. Shield need not extend above soil when soils are flat and level with top of shield.
- 4) Except as approved in table above (Hs), any excavations over 20'-deep with sloping require site specific approval by a Licensed Professional Engineer
- 5) User is responsible for safe support of shield to ensure it cannot shift vertically or horizontally at any
- 6) Shield may be stacked, provided that appropriate connections are made between the stacked shields to prevent lateral movement.
- 7) Shield must be used in strict compliance with all applicable OSHA guidelines and limitations outlined in this document
- 8) This document has been prepared by a P.E., as required by OSHA 29 CRF, Part 1926, Subpart P.

- 9) Shield shall be used under the supervision and direction of a Competent Person as defined by CRF, Part 1926, Subpart P. Among other qualifications, the Competent Person shall be trained in the use of trench shields and have practical field experience with the use of shields, soil classification, and recognizing hazardous conditions.
- 10) All spreaders shall be secured to sockets with pins or other mechanical connections approved by the manufacturer, prior to shield use. Do not apply side load or vertical load to the spreaders at any time (such as leaning plates/sheeting for soil support), unless approved in writing by a P.E. or the Manufacturer.
- 11) Shield shall be installed in a manner to restrict lateral or other hazardous movement of the shield in the event of the application of sudden lateral loads.
- 12) Shield shall be inspected prior to each use, to ensure they are in good condition and free of any damage or visual defects.
- 13) Any repairs or modifications to the shield, such as extending height or length with plates, are strictly prohibited, unless approved in writing by a P.E.
- 14) Pressure rating of shield is a uniform rectangular pressure over full height of shield.



D.H. CHARLES ENGINEERING, INC. 135 LIVERPOOL DRIVE, SUITE C CARDIFF, CA 92007 (760) 436-9756

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TRENCH SHIELD TABULATED DATA

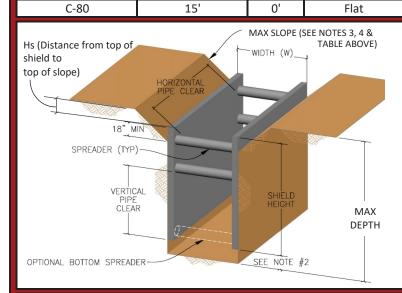


971 psf 10,000 lb. 60" 17'-11"

(980) 689-4389 18805 W Catawba - Cornelius, NC

Model Number	TSB4-820	Sp	reader Size	8" Sch. 80	Pressure Rating
Serial Number	TSB4820-2008B	Spread	er Yield Strength	35 ksi	Weight
Height	8'	Max S	preader Length	20'	Vert. Pipe Clea
Length	20'	Spread	ler Pin Diameter	2"	Horiz. Pipe Clea
Wall Thickness	4"	Pin '	Yield Strength	100 ksi	
SOIL TYPE	Max Depth	Hs	May Slane	Sloping & Shoring	
SOIL TIPE	iviax Deptii	Hs Max Slope -		1) "Max Depth" shall not e	exceed limits outlined in to
A-25	40'	10.5'	3/4(Horiz.): 1(Vert.)	types.	
B-45	24'	8.5'	1(Horiz.): 1(Vert.)	2) If "Max Depth" is 20' or	, ,
C-60	19'	6.5'	1.5(Horiz.): 1(Vert.)	3) If "Max Depth" exceeds distance from top of shield	, ,

- table for corresponding soil
- er OSHA guidelines.
- ot exceed "Max Slope", and ot exceed "Hs", as outlined in table for corresponding soil types.



33% Shoring Use Factor Included in Max Depth Ratings		Yes
J	Pressure Included in Depth Ratings*	72 psf

*All equipment and materials shall be kept a sufficient distance clear of the shoring, as directed by a licensed Professional Engineer, to ensure this surcharge limit is not exceeded.

Soil shall be classified by a Competent Person as type A, B or C, as defined by OSHA regulations, except as noted below:

- 1) A type C-60 soil is defined as a clay or moist granular soil that is not flowing or submerged. This soil can be cut vertically and will stand long enough to safely install protective system.
- 2) If the soil is submerged or has freely seeping water, it shall be classified as a C-80 soil.
- 3) Shielding shall never be used in soft clays, organic peat or other flowing materials.

NOTES & LIMITATIONS:

- 1) Refer to page 2 for manufacturer's assembly instructions
- 2) Excavation 2' below bottom of shield is only permitted when there is no indication of possible loss of soil from behind or below the bottom of the shield.
- 3) Sloped soils must extend to no less than 18" below the top of the shield, as shown in diagram above. Shield need not extend above soil when soils are flat and level with top of shield.
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- 11) Shield shall be installed in a manner to restrict lateral or other hazardous movement of the shield in the event of the application of sudden lateral loads.
- 12) Shield shall be inspected prior to each use, to ensure they are in good condition and free of any damage or visual defects.
- 13) Any repairs or modifications to the shield, such as extending height or length with plates, are strictly prohibited, unless approved in writing by a P.E.
- 14) Pressure rating of shield is a uniform rectangular pressure over full height of shield.



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