

When Your Pipe Arrives

Slings should be used to lift the pipe off the trailer and for positioning pipes into the trench.

All pipes should be lifted off the trailer to avoid damage while unloading.

-  **SAFETY WARNING:** Never drag or roll pipe from truck.
-  Stack the pipe on the trailer or ground with proper blocking or strapping.
-  Be careful when removing binders or strapping on pipe bundles, either on the trailer or ground.
-  No person should be beneath or near a lifted pipe.
-  Pipe ends may be sharp. Handle with care. Use gloves and other proper protective clothing and equipment.

Before unloading a nested pipe shipment, make sure that the delivery site has ample room for unnesting the various pipe sizes.

To unnest a pipe, use a section of 2" x 4" lumber that is 1" to 2" longer than the pipe's inside diameter. Wedge it into rib valley and then pull on the 2" x 4" with a chain or wire rope.

For more detailed information consult Contech publication **SAFETY Instructions for Unloading and Handling Contech Corrugated Metal Pipe.**

Trench Installation

ULTRA FLO® Pipe

Overview

Millions of feet of ULTRA FLO® have been installed in a variety of storm sewer projects across the United States. Like all pipe products, proper installation is important for long-term performance. Your Contech sales engineer will be glad to assist you if you have any questions.

Bedding and Backfill

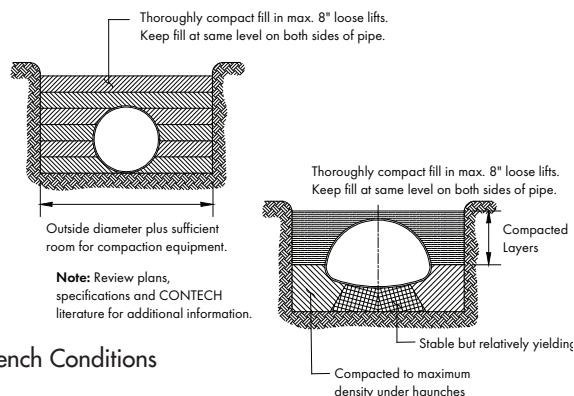
Typical ULTRA FLO® installation requirements are the same as for any other corrugated steel pipe installed in a trench. Bedding and backfill materials follow the requirements of the Corrugated Steel Pipe (CSP) installation specification, ASTM A 798; and must be free from stones, frozen lumps or other debris.

Table 1 H 20 and H 25 Live Load				
ALUMINIZED STEEL Type 2 or Galvanized Steel ULTRA FLO®				
Diameter (in.)	Minimum/Maximum Cover (ft.)			
	Specified Thickness (in.) and Gage			
	(0.064") 16	(0.079") 14	(0.109") 12	(0.138") 10
18	1.0 / 108	1.0 / 151		
21	1.0 / 93	1.0 / 130	1.0 / 216	
24	1.0 / 81	1.0 / 113	1.0 / 189	
30	1.0 / 65	1.0 / 91	1.0 / 151	
36	1.0 / 54	1.0 / 75	1.0 / 126	
42	1.0 / 46	1.0 / 65	1.0 / 108	
48	1.0 / 40	1.0 / 56	1.0 / 94	
54	1.25 / 36	1.25 / 50	1.0 / 84	
60		1.25 / 45	1.0 / 75	1.0 / 109
66		1.5 / 41	1.25 / 68	1.25 / 99
72			1.25 / 63	1.25 / 91
78			1.5 / 58	1.5 / 84
84			1.75 / 54	1.75 / 78
90			2.0* / 50*	2.0 / 73
96			2.0* / 47*	2.0 / 68
102			2.5* / 43*	2.5 / 61

NOTES

- Allowable minimum cover is measured from top of pipe to bottom of flexible pavement or top of pipe to top of rigid pavement. Minimum cover in unpaved areas must be maintained.
- All heights of cover are based on trench conditions. If embankment conditions exist, there may be restrictions on gages for large diameter pipes. Your Contech Sales Engineer can provide further guidance for a project in embankment conditions.
- Table 1 is for H20/H25 loading only. For heavy construction loads, higher minimum compacted cover may be needed. See Table 2.
- Heights of cover are for 3/4" x 3/4" x 7-1/2" external rib corrugation.

*These sizes and gage combinations are installed in accordance with ASTM A796 paragraph 17.2.3 and ASTM A798. For aluminum ULTRA FLO refer to ASTM B790 and B788. These sizes marked with an * require a clean, easily compacted granular backfill.
- For heights of cover tables for steel pipe arch, aluminum round pipe and aluminum pipe arch refer to the other Contech literature.
- For larger diameters, please check with your local Contech Representative.



Trench Conditions

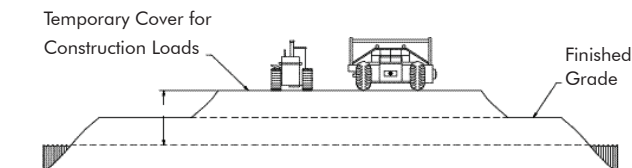
Embankment Conditions

ULTRA FLO[®] is a superior CSP storm sewer product that is normally installed in a trench condition. In those unusual embankment installation conditions, pipe sizes and gages may be restricted. Your Contech sales engineer can provide you with further guidance.

Construction Loads

For temporary construction vehicle loads, an extra amount of compacted cover may be required over the top of the pipe. The height-of-cover shall meet the minimum requirements shown below in Table 2. The contractor must provide the additional cover required to avoid damaging the pipe, Minimum cover is measured from the top of the pipe to the top of the maintained roadway surface. Contact your local Contech representative for tracked construction equipment loading guidance.

Table 2 Heavy Construction Loads Min. Height of Cover Requirements for Construction Loads ULTRA FLO[®] Pipe*				
Diameter (in.)	Minimum Cover (ft.) for Indicated Axle Loads (kips)			
	18-50	50-75	75-110	110-150
	Steel 3/4" x 3/4" x 7-1/2"			
15-42	2.0	2.5	3.0	3.0
48-72	3.0	3.0	3.5	4.0
78-108	3.0	3.5	4.0	4.5
	Aluminum 3/4" x 3/4" x 7-1/2"			
15-42	3.0	3.5	4.0	4.0



Pipe Spacing

For multiple runs of ULTRA FLO[®], ample spacing must be used between runs to allow proper backfill placement and compaction. Pipe spacing will change depending upon pipe diameter, backfill material and compaction methods. General guidelines for spacing between runs of pipe are as shown below in Table 3:

Table 3 Diameters Spacing*	
Up to 24"	1/2 diameter of pipe
24" to 72"	1/2 diameter of pipe
Over 72"	36" space
*Spacing may be reduced if using controlled, low-strength material (flowable fill) for the backfill.	

NOTHING IN THIS CATALOG SHOULD BE CONSTRUED AS A WARRANTY. APPLICATIONS SUGGESTED HEREIN ARE DESCRIBED ONLY TO HELP READERS MAKE THEIR OWN EVALUATIONS AND DECISIONS, AND ARE NEITHER GUARANTEES NOR WARRANTIES OF SUITABILITY FOR ANY APPLICATION. CONTECH MAKES NO WARRANTY WHATSOEVER, EXPRESS OR IMPLIED, RELATED TO THE APPLICATIONS, MATERIALS, COATINGS, OR PRODUCTS DISCUSSED HEREIN. ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND ALL IMPLIED WARRANTIES OF FITNESS FOR ANY PARTICULAR PURPOSE ARE DISCLAIMED BY CONTECH. SEE CONTECH'S CONDITIONS OF SALE (AVAILABLE AT WWW.CONTECHES.COM/COS) FOR MORE INFORMATION.