

Blue Diamond Corrugated HDPE Pipe Installation Instructions



Before You Begin

Blue Diamond by Infiltrator Corr-A-Flex single wall and Corr-A-Flow dual wall HDPE pipe may only be installed according to State and/or local regulations. If unsure of the installation requirements for a particular site, contact the local building department.

The soil and site conditions must be approved prior to installation. Conduct a thorough site evaluation to determine proper sizing and siting of the system before installation. Unusual conditions may require additional investigations, including the recommendations of a qualified geotechnical or soils engineer.

RECEIVING AND UNLOADING

Upon arrival, the pipe should be inspected for potential damage due to shipment. Any damage should be noted on the delivery receipt and the supplier should be notified. While the pipe will withstand normal field handling, it should not be dropped from any appreciable height. Slings or strapping should not be removed before pipe is secured for unloading. Use tractors, forklifts, or construction equipment suitable for unloading with slings and chains rated for the weight of pipe.

STORAGE

BDC pipe is manufactured with an integral bell on one end. Since the bell wall is less stiff than the corrugated pipe profile, some deflection, or “flowering” of the bell may occur. The bell end will regain shape when the spigot end of the pipe is driven home and snapped into place. To prevent excessive “flowering” stacked pipe should be placed with the bell ends staggered, so the pipe is not laying directly on another piece of pipe or the ground.

Gasketing pipe for “silt tight” connections is covered with a protective wrap and should not be removed until the pipe is ready for lubrication and assembly.

Materials and Equipment Needed

- Corr-A-Flex Single Wall or Corr-A-Flow Dual Wall HDPE pipe
- Soil or silt tight joints
- Gaskets (if necessary)
- Backhoe
- Laser, Transit, or Level
- Shovel and Rake
- Tape Measure
- Screwdriver or Knife

SELECTING FOUNDATION, BEDDING AND BACKFILL MATERIAL

Pipe must be surrounded by compacted material in order to distribute vertical loads. Only native materials that meet class I, II, or III are acceptable. Sand, Silt or Clay mixtures (Class III) should not be used where water conditions can cause instability. Class II and III materials must be compacted. Please refer to Table 1 in the next column for class definitions.

**Note: IVA is unacceptable material.*

Table 1: Foundation, Bedding, and Backfill Material Classes

ASTM D2321		ASTM D2487		Min. Compaction Required (%)
Class	Type	Notation	Description	
IA	Manufactured Aggregates: clean open-graded	N/A	Angular crushed stone or rock, gravel, coral, crushed slag, cinders or shells, large voids with little or no fines	Dumped
			Angular crushed stone or other Class IA material and stone/sand mixtures; little or no fines	
II	Coarse-Grained Soils; clean	GW	Well graded gravel, gravel/sand mixtures; little or no fines	85%
		GP	Poorly-graded gravel, gravel/sand mixtures; little or no fines	85%
		SW	Well graded sands, gravelly sands; little or no fines	85%
		SP	Poorly-graded sands, gravel sands; little or no fines	85%
		eg. GW-GC, SP-SM	Sand and gravels which are borderline between clean and with fines	85%
III	Coarse-grained soils with fines	GM	Silty, gravels, gravel/sand/silt mixtures	90%
		GC	Clayey gravels, gravel/sand/clay mixtures	90%
		SM	Silty sands, sand/silt mixtures	90%
		SC	Clayey sands, sand/clay mixtures	90%
IVA*	Fine-Grained Soils (inorganic)	MH CL	Inorganic silts and very fine sands, low to medium plasticity clays	Not Recommended

Excavating and Preparing the Site

Note: Underlying pipe material must be uniform and provide resistance to load.

1. Stake out the location of the trench.
2. Excavate the trench to ensure walls are stable under all conditions. Trench width should be just large enough so that backfill can be compacted completely around the pipe. Use **Table 2** below to determine trench depth and width.

Table 2: Minimum Trench Dimensions

Pipe Size	Min. Trench Depth	Min. Trench Width
3"	16-20"	8"
4"	17-21"	21"
6"	19-23"	23"
8"	22-26"	25"
10"	24-28"	28"
12"	26-30"	30"
15"	30-34"	34"
18"	34-38"	40"
24"	42-46"	50"

Note: Minimum width should be the pipes outside diameter plus 16 inches (400 mm), or pipe outside diameter times 1.25, plus 12 inches (300 mm) to allow working room for compaction equipment.

Note: For parallel pipes, allow 12 inches (300 mm) between pipes.

4. Remove any large stones and other debris. Do not use the bucket teeth to rake the trench bottom.

Note: If foundation material is soft, it must be removed to maintain grade. Remove for a depth of 2 feet (0.6 m) and replace with suitable compacted material.

5. Verify that each trench is level or has the prescribed slope per design or application using a level, transit or laser.

CONSTRUCTION LOADS

The pipe must be protected from equipment loads during construction. Heavy equipment should not be allowed near or over buried pipes. Extra cover may be required to support loads. For shallow installations, it may be necessary to mound fill material to provide proper minimum cover to handle the load. The mound can be removed after construction to achieve final grade. **Table 3** below explains load covers needed.

Table 3: Minimum Cover for 12" - 24" Pipe Bearing Construction Loads

Axle Load, kips	Cover, in.
18.0 - 50.0	24.0
51.0 - 75.0	30.0
76.0 - 110.0	36.0
110.0 - 150.0	36.0

Installing the System

1. Lay and assemble pipe in trench per design. Pipe should be placed with the bell end pointed in the direction of the work progress.

2. Pipe must be securely surrounded by bedding material. Evenly compact bedding material on each side of the pipe. The haunch zone should be no more than 6 inches up to the spring line of the pipe. Ensure that the material is fully compacted without voids.

Note: Haunching should be completed as the pipe is installed.

Note: Bedding material should be free of large stones and be the same material as the backfill material.

3. Place initial backfill around pipe at least 6" (150 mm) above the crown of the pipe. Each layer must be compacted before the next lift is placed.

Note: Pipes laid in a parallel installation require the same backfill support.

Note: Backfill must be evenly compacted.

4. The final cover shall be 1' (300 mm) for 3"-24" (75-600 mm) pipe, measured from the crown of the pipe to final grade.

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