



Specifications

Solid Wall HDPE (High Density Polyethylene Pipe) with B-Tech Connections™ provide:

An Extremely Pull-able, Mechanically Connected System

Characteristics of HDPE, with B-Tech Connections™

- Economical to Install Utilizing Engineered Mechanical Means
- Strong and Flexible Through Bends and Dips
- Impact Resistant and Abrasion Resistant
- Chemical Corrosion and Freeze Resistant
- Long Design Life / Extremely Reliable
- Listed and Approved in Small and Large Diameters
- Watertight Elastomeric Seals
- Outperforms push only systems

Fusion of B-Tech Connections™

HDPE pipe provides extremely smooth interior and exterior surfaces. B-Tech Connections™ do not increase or decrease either ID or OD (Inside or Outside Diameter) of the pipe. Fusion Melt Beads may be removed while fusion joints are still warm. To do so, reach into the end of the connection during the fusion process cool down period, with an offset knife to remove the internal beads.

B-Tech Connections™ for HDPE do not limit capacity of the pipe as seen using other methods! This is possible because of HDPE's smooth walls and non-wetting characteristics enabling higher flow capacities and reduced friction losses.

B-Tech Connections™ can be fused to custom lengths of HDPE to create end to end spools or ordered in short lengths for confined space applications. Long spools are easily stackable for shipping due to **no increase** in the outside dimension and can be pulled down tight pipe corridors during trenchless installations.



B-Tech Connections™ Assembly Procedures

Threaded Connection:

- 1.5 to 3 revolutions to make-up
- O-ring Seals (One or two)
- Low torque to shoulder & lock
- Just over double of assembly torque to un-lock
- Pressure **restrained** same as pipe's design pressure
- Temporary or Permanent installation Options

Push Together Connection:

- Approximately 4,000 pounds of force to engage
- O-ring Seals (One or two)
- Tapered for easy alignment
- Allows for 360° Rotation
- Pressure **restrained** same as pipe's design pressure
- Permanent installations only

B-Tech Connections™ meet these ASTM Industry Standards

Related to manufacturing sizes and tolerances.

ASTM D3350

Standard Specification for Polyethylene Plastics Pipe and Fittings Materials. This standard defines the physical properties of the resin.

ASTM F714

Standard Specification for Polyethylene (PE) Pipe (SDR-PR) Based on Outside Diameter. This standard is used for most large diameter HDPE pipe (6" to 63") Applications.

ASTM D2321

Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity Flow Applications.

ASTM F585

Standard Practice for Insertion of Flexible Polyethylene Pipe into Existing Sewers.

ASTM D3212

Standard Specification for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals.



B-Tech Connections™ Capabilities

HDPE Pipe Sizes Machine-able For B-Tech Connections™

Manufactured in These Design Types:

- LPCT** (Locking Push Connection Tapered) 4" to 48" (above 54" Special Order)
- LTC** (Locking Thread Connection) 4" to 36"
- RTC** (Rotational Thread Connection) 4" to 36"

Commonly in IPS (DIPS are Special Order)

Pipe Size Inches	SDR - Minimum Wall Thickness						
	9	11	13.5	17	21	26	32.5
4 (100)	**0.53						
6 (150)	0.77	0.63					
8 (200)	1.01	0.82	0.67				
10 (250)	1.23	1.01	0.82	0.65			
12 (300)	1.47	1.20	0.98	0.78	0.63		
14 (350)	1.70	1.39	1.13	0.90	0.73	0.59	
16 (400)	1.93	1.58	1.29	1.02	0.83	0.67	
18 (450)	2.17	1.77	1.44	1.15	0.93	0.75	0.60
20 (500)	2.40	1.96	1.60	1.27	1.03	0.83	0.66
24 (600)	2.87	2.35	1.91	1.52	1.23	0.99	0.79
30 (750)		2.91	2.37	1.88	1.52	1.23	0.98
36 (900)			2.84	2.25	1.82	1.47	1.18
42 (1,050)				2.62	2.12	1.71	1.37
48 (1,200)					2.42	1.95	1.56



Lowest wall thicknesses we can produce in LTC, LPTC at this time



Range of sizes Possible for LTC, LPTC

RTC is available in all SDRs from 2" to 36"



LTC – A Permanent or Temporary Threaded Connection

1. Locking Threaded Connections are sold in sets (1- PIN & 1- BOX). Each piece is sold with fusion read extensions.
2. Short Pin to Box Spools, 36 inches (910mm) overall are also available. Lay Length of 2.5 Feet (762mm).
3. LTC contains O-Rings located on the PIN, which can be easily replaced if damaged.
4. To assemble, push PIN into Box on a level plane or in “V” blocks until thread starts to engage.
5. Rotate clockwise by hand with slight pressure inward, the multi lead thread will engage easily. Rotate 85% until snug, at this point you have reached the locking mechanism. A strap wrench or chain tong is needed to turn the remaining 15% until fully locked.
6. Once the pipe is shouldered up, the inside and outside will show little or no gapping.
7. It is possible to un-lock this connection. Unlock by rotating the connection *counterclockwise*, with a strap wrench or chain tong, at a force which is nearly double the Make Up torque. Un-locking the connection renders it non-locking and non-permanent.

LPCT – A Permanent Push Together Connection

1. Locking Push Connections are Tapered and sold in sets (1 PIN & 1 BOX). Each Piece is +/- 12 inches, with a Lay Length of +/- 18 inches (455mm).
2. LPCT contains 2 - O-Rings located on the PIN.
3. Mating this connection is aided by its Engineered Tapered Design.
4. To assemble slip PIN into Box on a level plane or in “V” blocks until taper engages.
5. A positive force is needed to overcome the tapered upsets in this connection. The force required will increase in colder ambient temperatures.
6. Mechanical force is required to make up this connection (see suggestions below).



There are several means available to push this connection together, depending on the equipment on hand. Suggestions include:

- Doubled up chains or straps wrapped around the pipe in choke, and 2 – come-a-longs at 180° offsets to pull joint together. This method is best utilized on larger sizes 48” (1,200mm) and up.
- If one of the ends is dead headed, it is possible to pull or push with an excavator or backhoe, with or without specially designed pipe pushers.
- Most fusion machines have hydraulic pistons with sufficient pressure to make up the connection.
- Excavators, with pipe handlers (Deck Hand or Tong Hand) equipped have hydraulic cylinders specially designed to push joints together.

Once the Connection is fully assembled and locked, the pipe will relax, and small gaps will be present at the connection shoulders. This is normal and expected.

RTC– Rotational Threaded Connection

This hybrid connection was designed for long length spools where rotating the entire length of pipe would not be possible. As with large diameters and or long spools.

By combining our two patented connections into one fitting, user can make-up connections with less complications. Simply line up the threads and rotate the box/female side of the fitting. The fitting will rotate independently of the fused-on pipe allowing threads to make-up without either pipe having to rotate.

The B-Tech Rotational Threaded Connection is preferred by many industry professionals who deal with long length spools found in Dredging, Mining, Dewatering, By-Pass, and Temporary water systems. It allows them to dis-assemble and re-assemble time after time with very little assembly equipment.

Because of its unique design we can provide it in all SDRs from 2” to 36” on a per job basis. The RTC is designed with a 2” oversized Outside Diameter (not recommended for trenchless applications). This will allow inside wear from abrasives to be equal to the remainder of the pipe system. This Concentric threaded design will allow ease of connection time after time.



**** As is with all HDPE Fittings & Connections it is not recommended to lift in the center of these fittings or connections!**

However, lifting the adjacent pipe 4 feet or more in either direction, will reduce the radial stresses on All HDPE Connection. **

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