



**TDR**ULTRA

**HDPE CORRUGATED PIPE**



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TDR™ ULTRA is our corrugated HDPE pipe product line. Engineered with exceptional strength, water-tight joints, and advanced technology. Its dual layer, co-extruded integrated bell, corrugated exterior with reinforced double-arch corrugations, and smooth interior liner generates the optimal hydraulic performance for your project.



### SCOPE

This specification designates the requirements for 4" through 60" TDR™ ULTRA pipe and fittings for use in gravity-flow drainage applications.

### PIPE REQUIREMENTS

TDR™ ULTRA pipe shall have dual wall - Corrugated exterior with reinforced double-arch corrugations and smooth interior black liner and dual layer co-extruded integrated bell. Manning's n value for use in design shall be 0.010

- 4" through 10" shall meet AASHTO M252, ASTM F2648 and ASTM F667
- 12" through 60" shall meet AASHTO M294, ASTM F2306, ASTM F2648 and ASTM F667

### MATERIALS

TDR™ ULTRA pipe and fittings must be manufactured using high-density polyethylene (HDPE) meeting the minimum requirements of cell classification 435420C/E for all pipe sizes as defined and described in ASTM D3350. Carbon black content shall be between 2 and 4%. Material for 12" through 60" inch pipe sizes shall comply with NCLS test according to sections 9.4 and 5.1 of AASHTO M294 and ASTM F2306 respectively.

### JOINT PERFORMANCE

TDR™ ULTRA pipe shall be joined using a watertight dual wall integrated bell and spigot joint meeting the requirements of AASHTO M252, AASHTO M294, ASTM F2306 and ASTM F2648. The joint shall be watertight according to ASTM D3212. Pre-installed gaskets shall meet the requirements of ASTM F477. A joint lubricant provided by TDR or any other water-based lubricant shall be used during the joint assembly. Please refer to TDR Installation Guideline for more details.

### INSTALLATION

Pipe and fittings shall be installed in accordance with ASTM D2321 and TDR's published Installations Guideline. Minimum cover for trafficked areas shall be 12" (0.3m). Maximum cover height depends on materials used for embedment and haunching. Please refer to TDR's Technical Service for more detail. Contact your TDR's representative for the latest installations guideline and recommendations.

### PERFORATION

When requested, the water inlet minimum area shall be 20 cm<sup>2</sup>/m (1 in<sup>2</sup>/ft) for 3- through 10- inch pipe; 30 cm<sup>2</sup>/m (1.5 in<sup>2</sup>/ft) for 12" through 18" pipe; and 40 cm<sup>2</sup>/m (1 in<sup>2</sup>/ft) of pipe larger than 18". Please refer to your TDR's representative for more detail on the perforation patterns.

### DIMENSIONS

Nominal ID	Typical Internal Diameter		Min. Wall Thickness		Min. Pipe Stiffness @ 5% Deflection	
	in (mm)	in mm	in mm	mm	psi	kPa
4" (100mm)	4.09"	104	0.02"	0.60	50	345
6" (150mm)	6.02"	153	0.04"	1.00	50	345
8" (200mm)	8.00"	203	0.04"	1.10	50	345
10" (250mm)	10.04"	255	0.06"	1.50	50	345
12" (300mm)	12.28"	312	0.07"	1.70	50	345
15" (375mm)	15.04"	382	0.08"	2.00	42	290
18" (450mm)	18.11"	460	0.09"	2.20	40	275
24" (600mm)	24.25"	616	0.10"	2.50	34	235
30" (750mm)	30.04"	763	0.10"	2.50	29	200
36" (900mm)	36.02"	915	0.12"	3.00	22	155
42" (1050mm)	42.05"	1068	0.13"	3.20	21	145
48" (1200mm)	48.74"	1238	0.14"	3.50	20	135
60" (1500mm)	60.04"	1525	0.16"	4.00	15	105

Note: Values provided for references purposes only. Contact a technical representative for additional information.