
Engineering Specification Sheet



CertainTeed Certa-Com™

Restrained Joint Polyvinyl Chloride (PVC) Conduit

1.0 Scope

This Specification describes the minimum features and test procedures required for CertainTeed Certa-Com™ Conduit polyvinyl chloride (PVC) conduit and accessories used on the underground distribution system to convey, support, and mechanically protect primary and secondary distribution cables.

2.0 Standards (Applicable to all Products)

ASTM D1784	STANDARD SPECIFICATIONS FOR RIGID POLY (VINYL CHLORIDE)(PVC) COMPOUNDS AND CHLORINATED POLY (VINYL CHLORIDE) (CPVC) COMPOUNDS
ASTM D1785	STANDARD SPECIFICATION FOR POLY (VINYL CHLORIDE) (PVC) PLASTIC PIPE, SCHEDULES 40, 80, AND 120
ASTM D3139	(2005) STANDARD SPECIFICATION FOR JOINTS FOR PLASTIC PRESSURE PIPES USING FLEXIBLE ELASTOMERIC SEALS
ASTM F512	STANDARD SPECIFICATION FOR SMOOTH-WALL POLY (VINYL CHLORIDE) (PVC) CONDUIT AND FITTINGS FOR UNDERGROUND INSTALLATION

3.0 CERTIFICATIONS (Not applicable to all Products)

NEMA TC 2	Electrical Polyvinyl Chloride (PVC) Tubing And Conduit
UL 651	Schedule 40 and 80 Rigid PVC Conduit and Fittings ¹

4.0 MATERIALS

Certa-Com™ Conduit shall be in accordance with the latest revision of CertainTeed Product Specification 220 Certa-Com™ Conduit and Accessories (Note: Applies to All Products) and Underwriters Laboratories Standard 651 (Applies to 3" – 6" Products only); and the dimensions shall also meet NEMA Standards Publication No. TC 2 for schedule 40 and/or schedule 80.

The material used for this conduit shall be virgin PVC plastic except that reworked material from the manufacturers own production facility may be used providing that the end product is equal in quality to virgin PVC. The cell classification of the Certa-Com™ Conduit shall be 12454 as described in ASTM D1784.

Conduit color is GREY.

5.0 WORKMANSHIP

Conduit shall be homogenous throughout and free from voids, cracks, inclusions and other defects, and shall be as uniform as commercially practicable in color, density and other physical characteristics.

¹ Does not apply to 8" SCH80 product

6.0 DESIGN

Conduits will be provided with one restrained, gasketed, integral belled end as specified in CertainTeed Product Specification 220 – Certa-Com™ Conduit and Accessories. A spline groove around the circumference of the conduit on the spigot end is located such that when the spigot end is fully inserted into the gasketed bell end, the groove aligns with a matching spline groove on the ID of the bell end. A nylon spline is then fully inserted through a hole in the bell which is tangent to and in alignment with the spline groove, effectively locking the joint together.

Conduits will be provided with the inside edge of the spigot-end chamfered in accordance with ASTM F-512.

O-rings used with the Certa-Com conduit are manufactured from a UL Recognized component elastomeric material and provide a watertight joint.

7.0 DIMENSIONS

Conduits shall be 20 feet (+0.5" – 0.0) in length, and shall conform to the dimensions in Table 1 of this specification and the specifications published in Table 3-1 of NEMA publications TC 2.

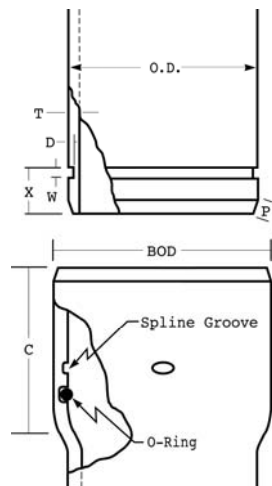
The conduit's restrained integral belled ends conform to the dimensions shown in CertainTeed Product Specification 220 - Certa-Com™ Conduit and Accessories.

Size	O.D.	T (Min)	I.D. at Min. Wall	Max Tensile Pull ^②		Min. Bend Radius, ft. ^④	Pressure Rating, psi	Approx. Weight, lbs/ft	BOD ^⑤	C	X	W	D	P
				Straight ^③	At 65' Bend Radius									
3" SCH40	3.500	0.216	3.068	10,200	9,000	65	80	1.38	3.98	5.25	3.00	0.500	0.095	0.250
4" SCH40	4.500	0.237	4.026	12,700	9,500	75	80	2.09	5.02	5.25	3.00	0.500	0.095	0.250
5" SCH40	5.563	0.258	5.047	13,900	10,000	95	80	2.83	6.10	5.25	3.00	0.500	0.095	0.250
6" SCH40	6.625	0.280	6.065	16,700	12,000	115	80	3.67	7.24	5.25	3.00	0.500	0.095	0.250
8" SCH80	8.625	0.500	7.625	30,000	25,000	135	80	8.08	9.66	5.00	3.16	0.500	0.145	0.625

Table 1^①

Notes:

- ① All dimensions are in inches and are subject to normal manufacturing tolerances
- ② An appropriate safety factor must be applied during pullback; use rig instrumentation to insure that this target pulling value is not exceeded
- ③ Value shown is effective end load at failure developed as a result of pressure and/or pulling (3"-6" based on UL requirements).
- ④ All UL and other tests indicate joint is leak free at a 65' minimum bend radius.
- ⑤ Bore hole should be back-reamed to a minimum of 1.5" of bell O.D.



NOTE: For proper installation, pipe should be cut off at least 2" behind the spline groove before attaching the puller eye. Pulling eye should be tightened in accordance with manufacturer's recommendations.

CAUTION: Do not over-tighten.

8.0 MARKINGS

Conduit shall be marked in accordance with the latest revisions of UL 651 (Note: applies to 3" – 6" products only) and NEMA TC-2 (applies to all products). They shall be traceable to plant location, country of origin, date, time, shift, and machine of manufacture. The markings shall be legible and permanent.

Examples:

3" – 6" SCH40

CERTAINTEED 4" CERTA-COM RACEWAY LISTED 8XA8 RIGID NONMETALLIC CONDUIT UNDERGROUND POLYVINYL CHLORIDE SCHEDULE 40 MAX 90°C WIRE DIRECTIONAL BORING NEMA TC 2 B 09-25-08 BL6B 2:15PM MADE IN USA 667039 CAUTION INSTALL O-RING IN REAR GROOVE

8" SCH80

CERTAINTEED 8" CERTA-COM RACEWAY SCHEDULE 80 RIGID PVC CONDUIT NEMA TC-2 MAX 90°C WIRE DIRECTIONAL BORING B 09-25-08 BL6B 2:15PM MADE IN USA 667077 CAUTION INSTALL O-RING IN REAR GROOVE

9.0 TESTING METHODS AND PROCEDURES

When conditioning is required for referee tests or quality control tests, test specimens shall be conditioned in accordance with NEMA Standards Publication TC 2.

Tests shall be conducted at $73.4^{\circ}\text{F} \pm 3.6^{\circ}\text{F}$ without regard to humidity. Samples shall be selected at random.

3" – 6" Certa-Com™ Conduit shall be qualified and Listed to UL 651. Qualification testing to UL 651 includes dimensional measurements, tensile strength, deflection under heat and load, adequacy of fusion in the extrusion process by acetone immersion, low temperature handling, water absorption, resistance to crushing, flame resistance, identification of compound by specific gravity measurement, conduit for use with 90°C wiring, sunlight resistance, pipe stiffness, joint water tightness, elastomeric materials accelerated aging, permanency of printing and pull strength testing for use in directional boring applications. The maximum pull limits are stated in Table 1.

Note: 8" Certa-Com™ Conduit is not certified to UL 651.

Routine quality checks for Certa-Com™ Conduit ensure that the product meets the performance standards. The quality checks consist of dimensional measurements of the conduit and integral bell, spline groove alignment, color, marking, resistance to crushing, impact, extrusion quality and heat reversion. The frequency of testing and procedures are contained in CertainTeed Product Specification 220 – Certa-Com™ Conduit and Accessories.

10.0 PACKAGING

Conduit and fittings shall be packaged in accordance with ASTM Standard Specification F512.

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