

# Conduit and Cable

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## 1. Purpose

This specification covers plastic utility duct requirements (per NEMA Publication No. TC6, unless otherwise specified) for polyvinylchloride (PVC) plastic conduit used for underground installation. This specification covers type DB (also known as Type II) Plastic conduit which is designed primarily for direct burial without encasement in concrete.

## 2. Terminology

The terminology used in this specification is in accordance with the definitions given in ASTM D883 and/or ASTM F412, Relating to Plastics, unless otherwise specified.

## 3. Materials

1. Plastic utility ducts shall comply with the NEMA TC6-1.02A material requirements. PVC conduits and fittings shall be manufactured from a virgin homopolymer PVC compound which meets the minimum cell classification of PVC 12254-A,B, or C as defined in ASTM D 1784.
2. Other PVC compounds, which have a different cell classification because one or more properties are superior to those of the compounds specified above, may be used.
3. Reworked material may be used provided the duct produced meets all of the requirements of these standards.

## 4. Workmanship

All conduits and fittings shall be homogeneous throughout and free from visible cracks, holes, burrs, foreign inclusions or other defects which could damage conductors or cables. The conduit shall be as uniform as commercially practicable in color, opacity, density and other physical properties.

## 5. Packaging and Marking

1. The conduit shall be bundled, packed or racked in packages so constructed as to insure acceptance by common or other carriers at the lowest rate to the point of delivery unless otherwise specified.
2. All ducts shall be marked per NEMA Standard Publication No. TC6 or ASTM F512.

## 6. Belled Ends


Plastic ducts with belled ends shall be manufactured per NEMA Standard Publication No. TC6. Plastic ducts without belled ends shall be supplied with a coupling cemented to one end.

## 7. Fittings

Fittings for PVC plastic conduits shall be manufactured per NEMA Standard Publication No. TC9.

## 8. Conduits

Conduit shall be a minimum rating of DB-120 for 2" and 3" conduit, DB-60 for 4" and 6" conduits, all conduits are in 20' sections.

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## 9. Conduit Applications

### 9.1 Underground Straight Lengths:

A minimum rating of DB-120 for 2" and 3" conduits and DB-60 for 4" and 6" conduits shall be the preferred conduit for buried conduit applications. No portion of a PVC conduit/sweep may be exposed above ground. Each conduit shall be one size conduit continuously, no reducers allowed.

### 9.2 Radius of Conduit Sweeps:

- A. 36" radius sweeps shall be the minimum for 2", 3", and 4" conduits.
- B. 48" radius sweeps shall be the minimum for 6" conduit.
- C. Note: The larger the radius sweep, the better for cable pulling.

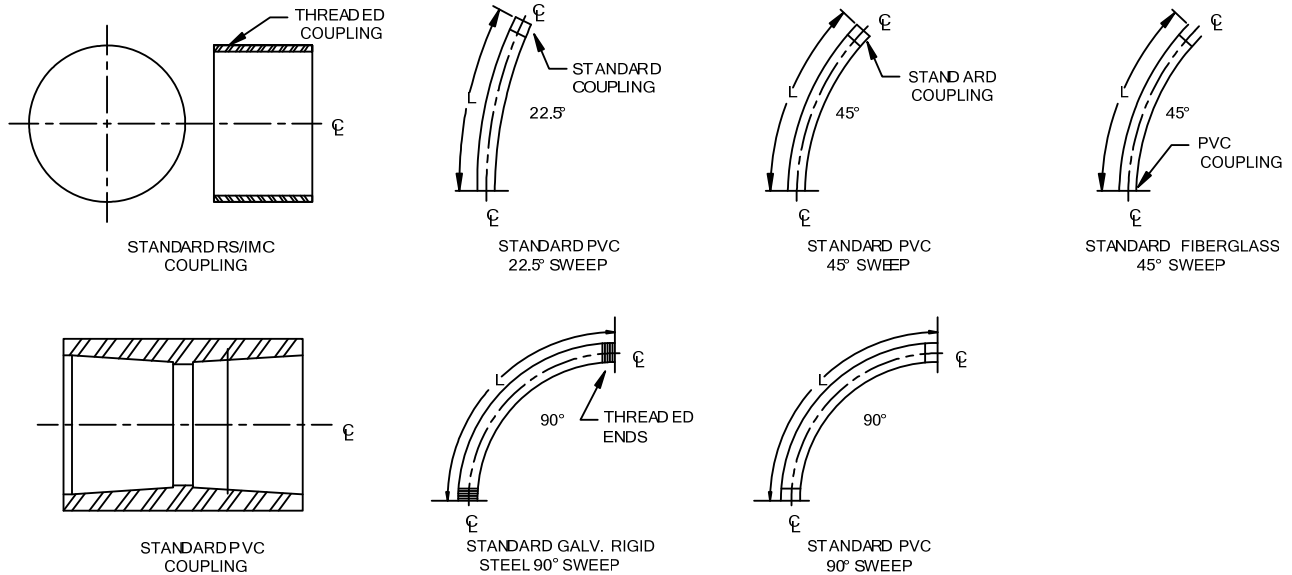
### 9.3 Selection criteria for 2", 90° Elbows:

- A. For pulling lengths of less than 500', schedule 40 elbows shall be utilized.
- B. For pulling lengths greater than or equal to 500', fiberglass elbows shall be utilized.

### 9.4 Selection criteria for 3", 4" and 6" 90° Elbows:

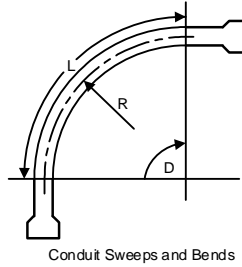
- A. For pulling lengths of less than 100', schedule 40 elbows shall be utilized except in instances NVE determines galvanized rigid steel is required.
- B. For pulling lengths greater than or equal to 100', galvanized rigid steel elbows shall be utilized.

### Conduit Applications



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**Table 1. Conduit Sweeps and Bends**

Conduit Size	Degree Bend	Radius (Inches)	Length* (Inches)	Stock No.		
				Galv. Steel	Schedule 40	Fiberglass
2"	22.5°	36	14 1/8			
		48	18 7/8			
	45°	36	28 1/4			243335
		48	37 11/16		240915	243336
	90°	36	56 9/16	243304 / 240350	240837	243334
		48	75 3/8		243309	243337
3"	22.5°	36	14 1/8			
		48	18 7/8			
	45°	36	28 1/4			
		48	37 11/16			
	90°	36	56 9/16	240360	243311	
		48	75 3/8	240370	243312	
4"	22.5°	36	14 1/8			
		48	18 7/8			
	45°	36	28 1/4			240351
		48	37 11/16			240352
	90°	36	56 9/16	243326 / 240380	243313	
		48	75 3/8	240390	243327	240354
6"	11.25°	150	29 7/16		243332	
	22.5°	36	14 1/8			
		48	18 7/8			
	30°	48	25 1/8		243331	
		48	37 11/16	243325	243330	
	45°	60	47 1/8		240355	
		48	75 3/8	240400	243314	
	90°	60	94 1/4		240356	

\*Length = Bend angle (converted to radians) multiplied by the radius.

**NOTES:**


1. Do not use stock number 240360 or 240370 with primary cable.
2. Length does not include tangent ends which vary in type and length per manufacturer.

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**Table 2. Service Conductors**

# of Runs	Conductor Size	Ampacity				Conduit	
		100% LF	Total	50% LF	Total	Size	Qty.
1	4-#2/0	172		191		2"	1 ea
	4-#4/0	226		255		4"	1 ea
	4-350 MCM	304		346		4"	1 ea
	4-500 MCM	372		429		4"	1 ea
	3-500 MCM	340		381		4"	1 ea
	3-750 MCM	426		483		4"	1 ea
2	4-#2/0	167	334	190	379	2"	2 ea
	4-#4/0	219	437	253	506	4"	2 ea
	4-350 MCM	293	585	343	685	4"	2 ea
	4-500 MCM	357	714	424	848	4"	2 ea
	3-500 MCM	329	659	378	756	4"	2 ea
	3-750 MCM	411	823	479	957	4"	2 ea
3	4-#2/0	143	429	175	525	2"	3 ea
	4-#4/0	185	555	232	696	4"	3 ea
	4-350 MCM	245	735	312	936	4"	3 ea
	4-500 MCM	297	891	383	1149	4"	3 ea
	3-500 MCM	280	840	348	1044	4"	3 ea
	3-750 MCM	347	1041	437	1311	4"	3 ea
4	4-#2/0	138	553	173	693	2"	4 ea
	4-#4/0	179	715	229	916	4"	4 ea
	4-350 MCM	236	942	308	1230	4"	4 ea
	4-500 MCM	285	1141	377	1580	4"	4 ea
	3-500 MCM	270	1081	344	1375	4"	4 ea
	3-750 MCM	334	1338	431	1725	4"	4 ea
6	4-#2/0	117	702	158	948	2"	6 ea
	4-#4/0	151	906	206	1236	4"	6 ea
	4-350 MCM	197	1182	275	1650	4"	6 ea
	4-500 MCM	238	1428	335	2010	4"	6 ea
	3-500 MCM	228	1368	310	1860	4"	6 ea
	3-750 MCM	281	1686	387	2322	4"	6 ea
9	4-#2/0	107	963	149	1341	2"	8 ea
	4-#4/0	137	1233	194	1746	4"	8 ea
	4-350 MCM	179	1611	257	2313	4"	8 ea
	4-500 MCM	215	1935	313	2817	4"	8 ea
	3-500 MCM	208	1872	293	2637	4"	8 ea
	3-750 MCM	255	2295	364	3276	4"	8 ea

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