

## Rigid Nonmetallic Conduit

### Typical Properties of Conduit Raw Material Compound

#### Thermal

	ASTM Test	Typical Values
Co-efficient of Thermal Expansion (inch/inch/°F) (properties @ 73.4°F)	D696	3.38 x 10 <sup>-5</sup>
Heat Distortion (°F at 264 psi)	D648	160 °F
Thermal Conductivity (BTU in/hour/square foot/°F)	N/A	1.3
Water Absorption (24 hrs. @ 73.4°F)	*UL 651; 6.5	0.5% max

\*UL651 6.5 is similar to ASTM D570 (0.3% max)

#### Electrical

	ASTM Test	Typical Values
Dielectrical Strength (volts/mil)	D149	1100
Dielectric Constant (60 CPS @ 30°C)	D150	4.00
Power Factor (60 CPS @ 30°C)	D150	1.93

#### Mechanical

	ASTM Test	Typical Values
Specific Gravity	D792	1.43 - 1.6
Tensile Strength (psi) @ 73.4°F	D638	5,000 - 6,500
Izod Impact (ft lbs./in. of notch)	D256	0.65 - 1.5
Flexural Strength (psi)	D790	12,500
Compressive Strength (psi)	D695	9,000
Hardness (Durometer D)	D2240	85

#### Impedance

	3φ 90% P.F.	80% P.F.	1φ 90% P.F.	80% P.F.
Steel Conduit	0.0118	0.0123	0.0136	0.0142
Schedule 40	0.0105	0.0106	0.0121	0.0122

Using 250 kcmil copper conductor comparable values for other conductor sizes.

### Wirefill

Per NEC 352.22: Number of Conductors. The number of conductors shall not exceed that permitted by the percentage fill specified in Table 1, Chapter 9.

Cables shall be permitted to be installed where such use is not prohibited by the respective cable articles. The number of cables shall not exceed the allowable percentage fill specified in Table 1, Chapter 9.

NEC Chapter 9, Table 1: Percent of Cross Section of Conduit and Tubing for Conductors

Number of Conductors	All Conductor Types
1	53
2	31
Over 2	40

Read all notes following Chapter 9, Table 1 in the National Electrical Code for complete information and explanation. Conduit and Tubing Fill Tables for Conductors and Fixture Wires of the Same Size for Schedule 40, Schedule 80, and Type EB PVC Conduit is located in the Informative Annex C of the NEC.

### Weight Comparison

Prime Conduit Schedule 40 rigid nonmetallic conduit compared to other rigid conduit in pounds per 100 feet (approx.)

Nom. Size	Prime Conduit Sch. 40 RNC	Prime Conduit Sch. 80 RNC	Aluminum	Electrical Metallic Conduit (EMT)	Intermediate Metal Conduit (IMC)	Rigid Metal Conduit (RMC)
1/2	17	21	27	30	57	79
3/4	23	30	36	46	78	105
1	34	44	53	66	112	153
1-1/4	46	60	70	96	114	201
1-1/2	55	72	86	112	176	246
2	73	101	116	142	230	334
2-1/2	124	154	183	230	393	527
3	163	210	239	270	483	690
3-1/2	196		288	350	561	831
4	232	308	340	400	625	982
5	315	428	465	Not Made	Not Made	1344
6	409	588	612	Not Made	Not Made	1770