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^{-5}
Heat Distortion °F at 264 psi	D648	160°F
Thermal Conductivity BTU (hr.) (ft.) (°F/in.)	N/A	1.3

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 (Volts lost per ampere per 100 feet)

	3∅ 90% P.F.	80% P.F.	1∅ 90% P.F.	80% P.F.
Steel Conduit	.0118	.0123	.0136	.0142
Schedule 40®	.0105	.0106	.0121	.0122

Using 250 KCmil Cu. conductor. comparable values for other conductor sizes.

Wire Fill

Maximum number of conductors in Schedule 40 PVC conduit

(Based on Table 1, Chapter 9 of the NEC)

Type Letters	Conductor Size AWG, MCM	Trade Size ½	¾	1	1¼	1½	2	2½	3	3½	4	4¼	5	6	8
THWN	14	13	24	39	69	94	154								
	12	10	18	29	51	79	114	164							
	10	6	11	18	32	44	73	194	160						
	8	3	5	9	19	22	36	51	71	106	136				
THHN	6	1	4	6	11	15	26	37	57	76	98	125	154		
	4	1	2	4	7	9	16	22	35	47	60	75	94	137	236
FEP (14 thru 2)	3	1	1	3	6	8	13	19	29	39	51	64	90	116	201
	2	1	1	3	5	7	11	16	25	33	43	54	67	97	169
FEPB (14 thru 8)	1		1	1	3	5	9	12	18	25	32	49	59	72	125
	1/0		1	1	3	4	7	10	15	21	27	33	42	61	105
PFA (14 thru 4/0)	2/0		1	1	2	3	6	8	13	17	22	28	35	51	88
	3/0		1	1	1	3	5	7	11	14	18	23	29	42	73
PFAH (14 thru 4/0)	4/0		1	1	1	2	4	6	9	12	15	19	24	35	61
	250			1	1	1	3	4	7	10	12	16	20	28	49
Z (14 thru 4/0)	300			1	1	1	3	4	6	8	11	13	17	24	42
	350			1	1	1	2	3	5	7	9	12	15	21	37
XHHW (4 thru 500MCM)	400				1	1	1	3	5	6	8	10	13	19	33
	500				1	1	1	2	4	5	7	9	11	16	27
	600				1	1	1	1	3	4	5	7	9	13	22
	700					1	1	1	3	4	5	6	8	11	19
	750					1	1	1	2	3	4	6	7	11	19
	6	1	3	5	9	13	21	30	47	63	81	102	128	185	320
	600				1	1	1	1	3	4	5	7	9	13	22
XHHW	700					1	1	1	3	4	5	6	7	11	19
	750					1	1	1	2	3	4	6	7	10	18

Maximum number of conductors in Schedule 80 PVC conduit

(Based on Table 1, Chapter 9 of the NEC)

Conductor Size AWG, MCM		Trade Size ½	¾	1	1¼	1½	2	2½	3	4	5
# 14	THW	4	8	13	24	34	57	82	128		
	THHN	10	19	33	58	81	135	194	0		
12	THW	3	6	11	20	28	47	67	105	183	
	THHN	8	14	24	43	60	100	144	0		
10	THW	3	5	9	16	22	37	54	85	148	
	THHN	5	9	15	27	38	64	92	143		
8	THW	1	2	4	8	11	19	28	44	77	121
	THHN	1	4	7	13	18	31	45	70	123	195
6	THW	1	1	3	6	8	14	20	32	56	88
	THHN	1	3	5	9	13	22	32	50	88	140
4	THW	0	1	2	4	6	10	15	24	42	66
	THHN	1	1	3	6	8	13	20	31	54	86
3	THW	0	1	1	4	5	9	13	20	36	57
	THHN	1	1	2	5	7	11	17	26	46	73
2	THW	0	1	1	3	4	8	11	17	31	49
	THHN	1	1	1	4	5	9	14	22	38	61
1	THW	0	1	1	1	3	5	8	13	22	35
	THHN	0	1	1	3	4	7	10	16	28	45
0	THW	0	0	1	1	2	4	7	11	19	30
	THHN	0	1	1	2	3	6	8	13	24	38
00	THW	0	0	1	1	1	4	6	9	16	26
	THHN	0	1	1	1	3	5	7	11	20	32
000	THW	0	0	1	1	1	3	5	8	14	22
	THHN	0	0	1	1	2	4	6	9	16	26
0000	THW	0	0	1	1	1	3	4	6	11	18
	THHN	0	0	1	1	1	3	5	8	14	22
250	THW	0	0	0	1	1	1	3	5	9	14
	THHN	0	0	0	1	1	2	4	6	11	18
300	ThW	0	0	0	1	1	1	3	4	8	13
	THHN	0	0	0	1	1	1	3	5	9	15
350	THW	0	0	0	1	1	1	2	4	7	11
	THHN	0	0	0	1	1	1	3	4	8	13
400	THW	0	0	0	0	1	1	1	3	6	10
	THHN	0	0	0	1	1	1	2	4	7	12
500	THW	0	0	0	0	1	1	1	3	5	8
	THHN	0	0	0	0	1	1	1	3	6	10
600	THW	0	0	0	0	0	1	1	1	4	7
	THHN	0	0	0	0	1	1	1	3	5	8
700	THW	0	0	0	0	0	1	1	1	3	6

Weight Comparison

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

Nom. Size	Carlon Schedule 40® Rigid Nonmetallic Conduit	Carlon Schedule 80® Rigid Nonmetallic Conduit	Aluminum	Electrical Metallic Tubing (EMT)	Intermediate Metal Conduit (IMC)	Rigid Metal Conduit (RMC)
½	18	22	27	30	57	79
¾	23	29	36	46	78	105
1	35	43	53	66	112	153
1¼	48	60	70	96	114	201
1½	57	72	86	112	176	246
2	76	100	116	142	230	334
2½	125	153	183	230	393	527
3	164	212	239	270	483	690
3½	198		288	350	561	831
4	234	310	340	400	625	982
5	317	431	465	Not Made	Not Made	1344
6	412	592	612	Not Made	Not Made	1770