PVC Conduit Fill Chart

PVC Schedule 40 conduit fill chart

Most THHN/THWN-2 conductors of one size at 40% fill, using minimum inside diameter.

The usual fill rule limits the wires to 53% of the conduit's internal area for one conductor, 31% for two and 40% for three or more. This page works out the area of the conduit and of each wire from the manufacturer dimensions below, then counts how many wires fit under the limit.

Most THHN/THWN-2 conductors of one size that fit in PVC Schedule 40 at the 40% fill limit

Wire size	OD used (in)	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"
14 AWG	0.120	9	16	28	49	67	113	161	251	435
12 AWG	0.140	6	12	20	36	49	83	118	184	320
10 AWG	0.170	4	8	13	24	33	56	80	125	217
8 AWG	0.230	2	4	7	13	18	30	44	68	118
6 AWG	0.254	2	3	6	11	15	25	36	56	97
4 AWG	0.330	1	2	3	6	8	15	21	33	57
3 AWG	0.360	1	1	3	5	7	12	17	27	48
2 AWG	0.390	0	1	2	4	6	10	15	23	41
1 AWG	0.450	0	1	1	3	4	8	11	17	30
1/0 AWG	0.500	0	0	1	2	3	6	9	14	25
2/0 AWG	0.540	0	0	1	2	3	5	7	12	21
3/0 AWG	0.600	0	0	1	1	2	4	6	10	17
4/0 AWG	0.660	0	0	0	1	2	3	5	8	14

PVC Schedule 80 conduit fill chart

Schedule 80 has thicker walls, so less room inside. Only trade sizes with two sources are listed.

Most THHN/THWN-2 conductors of one size that fit in PVC Schedule 80 at the 40% fill limit

Wire size	OD used (in)	1/2"	3/4"	1"	2"	3"	4"
14 AWG	0.120	7	13	23	98	220	387
12 AWG	0.140	5	9	16	72	162	285
10 AWG	0.170	3	6	11	48	110	193
8 AWG	0.230	1	3	6	26	60	105
6 AWG	0.254	1	3	5	21	49	86
4 AWG	0.330	0	1	3	12	29	51
3 AWG	0.360	0	1	2	10	24	43
2 AWG	0.390	0	1	2	9	20	36
1 AWG	0.450	0	0	1	6	15	27
1/0 AWG	0.500	0	0	1	5	12	22
2/0 AWG	0.540	0	0	1	4	10	19
3/0 AWG	0.600	0	0	0	3	8	15
4/0 AWG	0.660	0	0	0	3	7	12

PVC conduit dimensions used

Nominal and minimum inside diameters differ. The minimum is used where a maker publishes one.

Conduit type	Trade size	Inside diameter used (in)	ID basis	Internal area (in²)	One wire, 53% (in²)	Two wires, 31% (in²)	Three or more, 40% (in²)
PVC Schedule 40	1/2"	0.578	minimum ID	0.262	0.139	0.081	0.105
PVC Schedule 40	3/4"	0.780	minimum ID	0.478	0.253	0.148	0.191

Conduit type	Trade size	Inside diameter used (in)	ID basis	Internal area (in²)	One wire, 53% (in²)	Two wires, 31% (in²)	Three or more, 40% (in²)
PVC Schedule 40	5"	4.975	minimum ID	19.439	10.303	6.026	7.776
PVC Schedule 40	6"	5.986	minimum ID	28.143	14.916	8.724	11.257

Conduit type	Trade size	Inside diameter used (in)	ID basis	Internal area (in²)	One wire, 53% (in²)	Two wires, 31% (in²)	Three or more, 40% (in²)
PVC Schedule 40	1"	1.004	minimum ID	0.792	0.420	0.245	0.317
PVC Schedule 40	1-1/4"	1.335	minimum ID	1.400	0.742	0.434	0.560
PVC Schedule 40	1-1/2"	1.564	minimum ID	1.921	1.018	0.596	0.768
PVC Schedule 40	2"	2.021	minimum ID	3.208	1.700	0.994	1.283
PVC Schedule 40	2-1/2"	2.414	minimum ID	4.577	2.426	1.419	1.831
PVC Schedule 40	3"	3.008	minimum ID	7.106	3.766	2.203	2.843
PVC Schedule 40	3-1/2"	3.486	minimum ID	9.544	5.058	2.959	3.818
PVC Schedule 40	4"	3.961	minimum ID	12.323	6.531	3.820	4.929

Conduit type	Trade size	Inside diameter used (in)	ID basis	Internal area (in²)	One wire, 53% (in²)	Two wires, 31% (in²)	Three or more, 40% (in²)
PVC Schedule 80	1/2"	0.502	minimum ID	0.198	0.105	0.061	0.079
PVC Schedule 80	3/4"	0.698	minimum ID	0.383	0.203	0.119	0.153
PVC Schedule 80	1"	0.910	minimum ID	0.650	0.345	0.202	0.260
PVC Schedule 80	2"	1.881	minimum ID	2.779	1.473	0.861	1.112
PVC Schedule 80	3"	2.820	minimum ID	6.246	3.310	1.936	2.498
PVC Schedule 80	4"	3.737	minimum ID	10.968	5.813	3.400	4.387
PVC Schedule 80	5"	4.713	minimum ID	17.446	9.246	5.408	6.978

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