Rigid Conduit Fill Chart

Rigid metal conduit (RMC) fill chart

Most THHN/THWN-2 conductors of one size at 40% fill.

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 Rigid metal conduit (RMC) 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	11	19	31	53	73	120	172	265	455
12 AWG	0.140	8	14	23	39	53	88	126	194	334
10 AWG	0.170	5	9	15	26	36	60	85	132	227
8 AWG	0.230	3	5	8	14	19	32	46	72	124
6 AWG	0.254	2	4	7	12	16	26	38	59	101
4 AWG	0.330	1	2	4	7	9	15	22	35	60
3 AWG	0.360	1	2	3	5	8	13	19	29	50
2 AWG	0.390	1	1	2	5	6	11	16	25	43
1 AWG	0.450	0	1	2	3	5	8	12	18	32
1/0 AWG	0.500	0	1	1	3	4	6	9	15	26
2/0 AWG	0.540	0	0	1	2	3	5	8	13	22
3/0 AWG	0.600	0	0	1	2	2	4	6	10	18
4/0 AWG	0.660	0	0	1	1	2	3	5	8	15

Intermediate metal conduit (IMC) fill chart

IMC has a slightly larger inside diameter than rigid. Trade size 3/4 is not listed because the sources disagree.

Most THHN/THWN-2 conductors of one size that fit in Intermediate metal conduit (IMC) at the 40% fill limit

Wire size	OD used (in)	1/2"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"
14 AWG	0.120	12	33	58	78	128	181	280	482
12 AWG	0.140	8	24	42	57	94	133	205	354
10 AWG	0.170	6	16	29	39	63	90	139	240
8 AWG	0.230	3	9	15	21	34	49	76	131
6 AWG	0.254	2	7	12	17	28	40	62	107
4 AWG	0.330	1	4	7	10	16	24	37	63
3 AWG	0.360	1	3	6	8	14	20	31	53
2 AWG	0.390	1	3	5	7	12	17	26	45
1 AWG	0.450	0	2	4	5	9	12	19	34
1/0 AWG	0.500	0	1	3	4	7	10	16	27
2/0 AWG	0.540	0	1	2	3	6	8	13	23
3/0 AWG	0.600	0	1	2	3	5	7	11	19
4/0 AWG	0.660	0	1	1	2	4	6	9	15

Rigid and IMC dimensions used

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)
Rigid metal conduit (RMC)	1/2"	0.632	nominal ID	0.314	0.166	0.097	0.125
Rigid metal conduit (RMC)	3/4"	0.836	nominal ID	0.549	0.291	0.170	0.220

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)
Rigid metal conduit (RMC)	6"	6.093	nominal ID	29.158	15.454	9.039	11.663
Intermediate metal conduit (IMC)	1/2"	0.660	nominal ID	0.342	0.181	0.106	0.137
Intermediate metal conduit (IMC)	1"	1.105	nominal ID	0.959	0.508	0.297	0.384

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)
Rigid metal conduit (RMC)	1"	1.063	nominal ID	0.887	0.470	0.275	0.355
Rigid metal conduit (RMC)	1-1/4"	1.394	nominal ID	1.526	0.809	0.473	0.610
Rigid metal conduit (RMC)	1-1/2"	1.624	nominal ID	2.071	1.098	0.642	0.829
Rigid metal conduit (RMC)	2"	2.083	nominal ID	3.408	1.806	1.056	1.363
Rigid metal conduit (RMC)	2-1/2"	2.489	nominal ID	4.866	2.579	1.508	1.946
Rigid metal conduit (RMC)	3"	3.090	nominal ID	7.499	3.975	2.325	3.000
Rigid metal conduit (RMC)	3-1/2"	3.570	nominal ID	10.010	5.305	3.103	4.004
Rigid metal conduit (RMC)	4"	4.050	nominal ID	12.882	6.828	3.994	5.153

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)
Intermediate metal conduit (IMC)	1-1/4"	1.448	nominal ID	1.647	0.873	0.510	0.659
Intermediate metal conduit (IMC)	1-1/2"	1.683	nominal ID	2.225	1.179	0.690	0.890
Intermediate metal conduit (IMC)	2"	2.150	nominal ID	3.631	1.924	1.125	1.452
Intermediate metal conduit (IMC)	2-1/2"	2.557	nominal ID	5.135	2.722	1.592	2.054
Intermediate metal conduit (IMC)	3"	3.176	nominal ID	7.922	4.199	2.456	3.169
Intermediate metal conduit (IMC)	3-1/2"	3.671	nominal ID	10.584	5.610	3.281	4.234
Intermediate metal conduit (IMC)	4"	4.166	nominal ID	13.631	7.224	4.226	5.452

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)
Rigid metal conduit (RMC)	5"	5.073	nominal ID	20.212	10.713	6.266	8.085

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