

Pipe and Wire Area Chart

These charts are used to calculate the appropriate raceway, when multiple wire sizes are involved.

NOTE: The column with the 60% area is used for pipe nipples (raceways less than 24 inches long).

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EMT	Area		1	2	> 2
	100%	60%	Wire	Wires	Wires
			53%	31%	40%
1/2	0.304	0.182	0.161	0.094	0.122
3/4	0.533	0.32	0.283	0.165	0.213
1	0.864	0.519	0.458	0.268	0.346
1 1/4	1.496	0.897	0.793	0.464	0.598
1 1/2	2.036	1.221	1.079	0.631	0.814
2	3.356	2.013	1.778	1.04	1.342
2 1/2	5.858	3.515	3.105	1.816	2.343
3	8.846	5.307	4.688	2.742	3.538
3 1/2	11.545	6.927	6.119	3.579	4.618
4	14.753	8.852	7.819	4.573	5.901

IMC	Area		1	2	> 2
	100%	60%	Wire	Wires	Wires
			53%	31%	40%
1/2	0.342	0.205	0.181	0.106	0.137
3/4	0.586	0.352	0.311	0.182	0.235
1	0.959	0.575	0.508	0.297	0.384
1 1/4	1.647	0.988	0.873	0.51	0.659
1 1/2	2.225	1.335	1.179	0.69	0.89
2	3.63	2.178	1.924	1.125	1.452
2 1/2	5.135	3.081	2.722	1.592	2.054
3	7.922	4.753	4.199	2.456	3.169
3 1/2	10.584	6.351	5.61	3.281	4.234
4	13.631	8.179	7.224	4.226	5.452

RMC	Area		1	2	> 2
	100%	60%	Wire	Wires	Wires
			53%	31%	40%
1/2	0.314	0.188	0.166	0.097	0.126
3/4	0.549	0.329	0.291	0.170	0.220
1	0.887	0.532	0.470	0.275	0.355
1 1/4	1.526	0.916	0.809	0.473	0.610
1 1/2	2.071	1.243	1.098	0.642	0.828
2	3.408	2.045	1.806	1.056	1.363
2 1/2	4.866	2.920	2.579	1.508	1.946
3	7.499	4.499	3.974	2.325	3.000
3 1/2	10.01	6.006	5.305	3.103	4.004
4	12.882	7.729	6.827	3.993	5.153

FMC	Area		1	2	> 2
	100%	60%	Wire	Wires	Wires
			53%	31%	40%
3/8	0.116	0.070	0.061	0.036	0.046
1/2	0.317	0.190	0.168	0.098	0.127
3/4	0.533	0.320	0.282	0.165	0.213
1	0.817	0.490	0.433	0.253	0.327
1 1/4	1.277	0.766	0.677	0.396	0.511
1 1/2	1.858	1.115	0.985	0.576	0.743
2	3.269	1.961	1.733	1.013	1.308
2 1/2	4.909	2.945	2.602	1.522	1.964
3	7.069	4.241	3.747	2.191	2.828
3 1/2	9.621	5.773	5.099	2.983	3.848
4	12.566	7.540	6.660	3.895	5.026

LFMC	Area		1	2	> 2
	100%	60%	Wire	Wires	Wires
			53%	31%	40%
3/8	0.192	0.115	0.102	0.060	0.077
1/2	0.314	0.188	0.166	0.097	0.126
3/4	0.541	0.325	0.287	0.168	0.216
1	0.873	0.524	0.463	0.271	0.349
1 1/4	1.528	0.917	0.810	0.474	0.611
1 1/2	1.981	1.189	1.050	0.614	0.792
2	3.246	1.948	1.720	1.006	1.298
2 1/2	4.881	2.929	2.587	1.513	1.952
3	7.475	4.485	3.962	2.317	2.990
3 1/2	9.731	5.839	5.157	3.017	3.892
4	12.692	7.615	6.727	3.935	5.077

LFNC-B	Area		1	2	> 2
	100%	60%	Wire	Wires	Wires
			53%	31%	40%
3/8	0.192	0.115	0.102	0.060	0.077
1/2	0.314	0.188	0.166	0.097	0.126
3/4	0.541	0.325	0.287	0.168	0.216
1	0.873	0.524	0.463	0.271	0.349
1 1/4	1.528	0.917	0.810	0.474	0.611
1 1/2	1.981	1.189	1.050	0.614	0.792
2	3.246	1.948	1.720	1.006	1.298

PVC-40	Area		1 Wire	2 Wires	> 2 Wires
	100%	60%	53%	31%	40%
1/2	0.285	0.171	0.151	0.088	0.114
3/4	0.508	0.305	0.269	0.157	0.203
1	0.832	0.499	0.441	0.258	0.333
1 1/4	1.453	0.872	0.770	0.450	0.581
1 1/2	1.986	1.192	1.053	0.616	0.794
2	3.291	1.975	1.744	1.020	1.316
2 1/2	4.695	2.817	2.488	1.455	1.878
3	7.268	4.361	3.852	2.253	2.907
3 1/2	9.737	5.842	5.161	3.018	3.895
4	12.554	7.532	6.654	3.892	5.022

THHN	Area	Example		
14	0.0097	3	0.0097	0.0291
12	0.0133	3	0.0133	0.0399
10	0.0211	2	0.0211	0.0422
8	0.0366			
6	0.0507	3	0.0507	0.1521
4	0.0824	TOTAL		0.2633
3	0.0973			
2	0.1158			
1	0.1562			
0	0.1855			
2/0	0.2223			
3/0	0.2679			
4/0	0.3237			
250	0.3970			
300	0.4608			
350	0.5242			
400	0.5863			
500	0.7073			

In the example above, 3 #14's, 3 #12's, 2 #10's & 3 #6 conductors are to be installed in an EMT conduit. Since there are more than 2 wires, the right hand column is used. A conduit with an area greater than 0.2633 is selected. A 1" conduit has an area of 0.346, which exceeds the total wire area of 0.2633.