

Calculating EMT Conduit Fill

			1/2"	3/4"	1"	1-1/4"	1-1/2"	2"
AWG	sq.in.		Number of conductors in conduit					
	THHN	XHHN						
14	0.0111	0.0139	12	22	35	61	84	138
12	0.0133	0.0181	9	16	26	45	61	101
10	0.0211	0.0243	5	10	16	28	38	63
8	0.0366	0.0437	3	6	9	16	22	36
6	0.0507	0.059	2	4	7	12	16	26
4	0.0824	0.0814	1	2	4	7	10	16
3	0.0973	0.0962	1	1	3	6	8	13
2	0.1158	0.1146	1	1	3	5	7	11
1	0.1562	0.1534	1	1	1	4	5	8
1/0	0.1855	0.1825	1	1	1	3	4	7
2/0	0.2223	0.219	0	1	1	2	3	6
3/0	0.2679	0.2642	0	1	1	1	3	5
4/0	0.3237	0.3197	0	1	1	1	2	4
Area of conduit								
2 wire fill			0.094	0.165	0.268	0.464	0.631	1.040
>2 wire fill			0.122	0.213	0.346	0.598	0.814	1.342
<p>THHN, THWN are common insulations for copper conductors, XHHN for aluminum. Each wire gauge (AWG) has a cross-sectional area measured in sq.in. And contributes to conduit fill.</p> <p>Formula for determining total area of conductors: (# of wires) x (sq.in. of wire) = total sq.in.</p> <p>Example: To determine conduit size for three #14 AWG THHN conductors and nine #12 AWG XHHN $(3 \times 0.0111) + (9 \times 0.0181) = 0.1962 \text{ sq.in.}$ 0.1962 sq.in. of conductor will fit in 3/4" conduit, which has an area of 0.213</p>								