

WIRE FILL

Maximum allowable percentage wire fill per National Electric Code 2011 (Chapter 9, Table 1)

IPS sizes						
Trade Size	Internal Diameter in (mm)	Total Area 100% in ² (mm ²)	Percent of cross section of conduit & tubing for conductors			
			1 Wire 53% in ² (mm ²)	2 Wire 31% in ² (mm ²)	Over 2 Wire 40% in ² (mm ²)	
¾ (19)	0.910 (23)	0.650 (419)	0.345 (222)	0.202 (130)	0.260 (168)	
1 (25)	1.175 (30)	1.084 (697)	0.574 (370)	0.336 (216)	0.434 (279)	
1¼ (32)	1.520 (39)	1.815 (1170)	0.962 (620)	0.563 (363)	0.726 (468)	
1½ (38)	1.760 (45)	2.433 (1569)	1.289 (832)	0.754 (486)	0.973 (628)	
2 (51)	2.235 (57)	3.923 (2525)	2.079 (1338)	1.216 (783)	1.569 (1010)	
2½ (64)	2.740 (70)	5.896 (3805)	3.125 (2016)	1.828 (1179)	2.359 (1522)	
3 (76)	3.360 (85)	8.867 (5715)	4.699 (3029)	2.749 (1772)	3.547 (2286)	
4 (102)	4.320 (110)	14.657 (9452)	7.768 (5009)	4.544 (2930)	5.863 (3781)	
5 (127)	5.380 (137)	22.733 (14677)	12.048 (7779)	7.047 (4550)	9.093 (5871)	
6 (152)	6.435 (163)	32.523 (20970)	17.237 (11114)	10.082 (6501)	13.009 (8388)	

ID sizes					
Trade Size	Internal Diameter in (mm)	Total Area in ² (mm ²)	Percent of cross section of conduit & tubing for conductors		
			1 Wire 53% in ² (mm ²)	2 Wire 31% in ² (mm ²)	Over 2 Wire 40% in ² (mm ²)
2 (51)	2.000 (51)	3.142 (2027)	1.665 (1074)	0.974 (628)	1.257 (811)
2½ (64)	2.500 (64)	4.909 (3167)	2.602 (1678)	1.522 (982)	1.963 (1267)
3 (76)	3.000 (76)	7.069 (4560)	3.746 (2417)	2.191 (1414)	2.827 (1824)
3½ (89)	3.500 (89)	9.621 (6207)	5.099 (3290)	2.983 (1924)	3.848 (2483)
4 (102)	4.00 (102)	12.566 (8107)	6.660 (4297)	3.896 (2513)	5.027 (3243)
5 (127)	5.000 (127)	19.635 (12668)	10.407 (6714)	6.087 (3927)	7.854 (5067)
6 (152)	6.000 (152)	28.274 (18241)	14.985 (9668)	8.765 (5655)	11.310 (7297)