

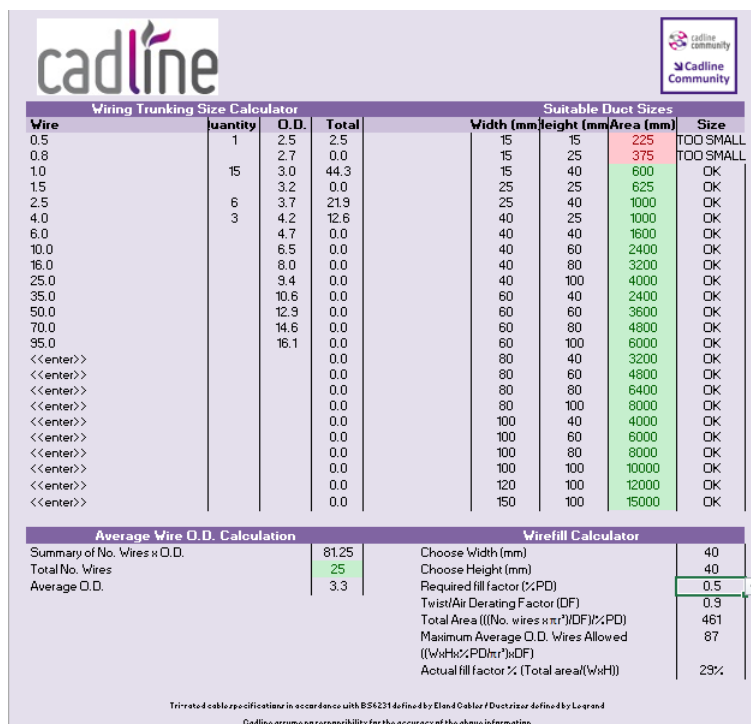
# elecworks™ Tips & Tricks

## Wire Trunking Size Calculator

The *Wire Trunking Size Calculator* is a standalone calculator that can be used externally to elecworks™. By entering the quantity and size of wires passing through a duct/trunk, the user is able to calculate whether the selected trunking / ducting is suitably sized in accordance with fill factor standards such as IEC or NFPA. The calculator also factors into the equation twisting of the wires and how this affects the overall size required.

Cable sizing is based on tri-rated panel wire to BS6231. Additional cables or wires can be added however to your own specification.

The calculator is free to download and the PC specification is listed below:



Wiring Trunking Size Calculator				Suitable Duct Sizes			
Wire	Quantity	O.D.	Total	Width (mm)	Height (mm)	Area (mm)	Size
0.5	1	2.5	2.5	15	15	225	TOO SMALL
0.8		2.7	0.0	15	25	375	TOO SMALL
1.0	15	3.0	44.3	15	40	600	OK
1.5		3.2	0.0	25	25	625	OK
2.5	6	3.7	21.9	25	40	1000	OK
4.0	3	4.2	12.6	40	25	1000	OK
6.0		4.7	0.0	40	40	1600	OK
10.0		6.5	0.0	40	60	2400	OK
16.0		8.0	0.0	40	80	3200	OK
25.0		9.4	0.0	40	100	4000	OK
35.0		10.6	0.0	60	40	2400	OK
50.0		12.9	0.0	60	60	3600	OK
70.0		14.6	0.0	60	80	4800	OK
95.0		16.1	0.0	60	100	6000	OK
<<enter>>			0.0	80	40	3200	OK
<<enter>>			0.0	80	60	4800	OK
<<enter>>			0.0	80	80	6400	OK
<<enter>>			0.0	80	100	8000	OK
<<enter>>			0.0	100	40	4000	OK
<<enter>>			0.0	100	60	6000	OK
<<enter>>			0.0	100	80	8000	OK
<<enter>>			0.0	100	100	10000	OK
<<enter>>			0.0	120	100	12000	OK
<<enter>>			0.0	150	100	15000	OK

Average Wire O.D. Calculation		Wirefill Calculator	
Summary of No. Wires x O.D.	81.25	Choose Width (mm)	40
Total No. Wires	25	Choose Height (mm)	40
Average O.D.	3.3	Required fill factor (% PD)	0.5
		Twist/Air Derating Factor (DF)	0.3
		Total Area ((No. wires x πr²) / (DF) x PD)	461
		Maximum Average O.D. Wires Allowed ((W x H) x PD) / (DF)	87
		Actual fill factor % (Total area / (W x H))	29%

Tri-rated cable specifications in accordance with BS6231 defined by Eland Cable / Duct sizes defined by Legrand  
Cadline assumes no responsibility for the accuracy of the above information

### Requirements:

Microsoft Excel 2010, Microsoft Excel Viewer 2010 or newer

[Download the Wire Trunking Calculator](#)