Wiring Duct Systems

As part of the business development efforts, RAAD Manufacturing Co. is now in a position to offer high-quality "WIRING DUCTS" to customers.

These series of wiring ducts, feature an excellent assembly and are ideal for any type of power and control panels preferably for control panels where performance remains unaltered over time even under the heaviest operating conditions.

The reliability and durability of these products are guaranteed by a very severe selection of raw materials employed for their production and rigorous process controls.

Correct installation by qualified staff, proper use, and periodical maintenance contribute to the safety and safeguarding of people and property.

Slotted Wiring Ducts (RWD)

Construction Specifications

- Slotted wiring duct for installation in cabinets based on standards EN 50085–1+A1 and EN–50085-2-3 (IEC 61084-1+A1).
- The base perforation of the wiring duct allows mounting on the panel.
- Duct material as Rigid PVC, self-extinguishing (non-flame propagating) and resistant to abnormal heat and fire up to 850°C (glow-wire test) in conforming with IEC/EN 60695-2-1standards.
- Product without Lead (Pb) in accordance with RoHS requirements.
- Technical characteristics of PVC duct as shown in Table 5.
- Complementary construction details as illustrated in Figure 1 to 4.
- Duct dimensional details, as shown in Figures 6.
- Nominal sizes and dimensions as shown in Table 1.
- The thickness of wall, bottom and cover as shown in Table 3.
- Standard length as 2 meters.

Operating Instruction

- The maximum application (operating) temperature is +60°C in accordance with IEC/EN standards.
- The minimum storage/ transport temperature is -45°C.
- The minimum installation/ application temperature is -25°C.
- The number of conductors must not exceed the recommended values, considering 60% stuffing coefficient (Table 2).
- Suitable for small sized wires employed in electric and electronic control panels.
- The deformation of horizontal duct walls under recommended conductor loading has been considered.
- The acceptability of deformation under more rigorous conditions such as load bearing cover or required mechanical spacing must be evaluated in the end-use investigation.
- High quality products conforming to international standards.
- Designed to meet the needs of panel builders regarding to advanced and time-saving panel assembling.
- Complying with international certificates KEMA, CE

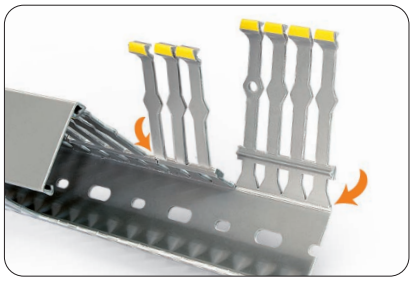


Figure 1

• Two predetermined break lines for breaking off and removal of sidewall finger segments, sidewall finger, and base segments.

Figure 2

• The possibility of making different distinct levels, by using special pins inside the holes contrived in the duct fingers.

It is mentionable that ducts with the height up to 40 (mm), have only one hole in the middle, while for duct height including 60 (mm) and more, two holes provide the above - mentioned possibility.

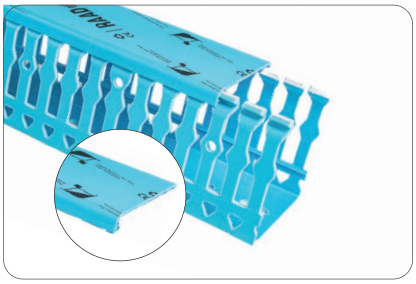


Figure 3

• Provided with a soft yellow PVC strip (white PVC strip in Blue wire ducts) for handling purposes to avoid hand-accidents during the cabling and making the cover very steady.

• Burr-free edges.

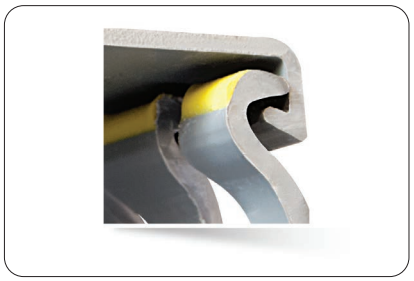


Figure 4

• These products are designed to provide maximum grip with the minimum involved surface.

Figure 5

This label is designed to protect wire ducts' cover from scratches during the product transportation and electrical panel internal parts' installation. It is made of highly durable plastic material.

It should be mentioned that the customer should remove the tape after the final installation of the cover.

Table 1- Nominal Sizes

Nominal size (mm) Width	Height	color	Ordering No.	Ordering No.	Total Length in Carton (m)	Qty.
25	40		6110105008	6110105108	60	30
	60		6110105012	6110105112	40	20
	80		6110105016	6110105116	20	10
	Cover		6115050005	6115050105	40	20
40	40		6110108008	6110108208	40	20
	60		6110108012	6110108212	36	18
	80		6110108016	6110108216	28	14
	Cover		6115050008	6115050108	40	20
60	40		6110112008	6110112108	32	16
	60*		6110112012	6110112112	24	12
	80		6110112016	6110112116	16	8
	Cover		6115050012	6115050112	40	20
80	60		6110116012	6110116112	20	10
	80		6110116016	6110116116	16	8
	100		6110116020	6110116120	8	4
	Cover		6115050016	6115050116	20	10
100	60		6110120012	6110120112	12	6
	80		6110120016	6110120116	8	4
	100		6110120020	6110120120	8	4
	Cover		6115050020	6115050120	20	10

* This size granted KEMA KEUR standard.

- Each standard length is 2 meters.
- For dimensional details see Figure 6.
- Standard unit as duct complete with cover.

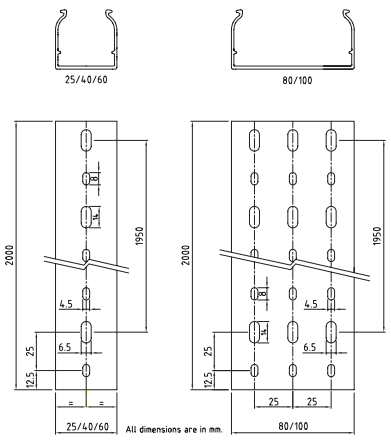


Figure 6

Duct Base Dimensional Details

Table 2

Recommended maximum number of wires to be used per wiring duct is 60% duct total capacity (Wire fill capacity)

Nominal size (mm)	Nominal Cross-Section of Conductors		
	1 (mm^2) (O.D=2.717 mm)	1.5 (mm^2) (O.D=3.168 mm)	2.5 (mm^2) (O.D=3.768 mm)
25x40	81	60	42
25x60	122	90	63
25x80	163	120	84
40x40	130	96	67
40x60	195	144	101
40x80	260	192	134
60x40	195	144	101
60x60*	293	216	151
60x80	390	288	201
80x60	390	288	201
80x80	521	384	269
80x100	651	480	336
100x60	488	360	252
100x80	651	480	336
100x100	813	600	420

* O.D =Outter Diameter

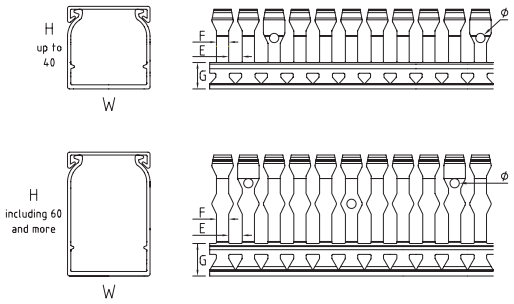
* The number of conductors in table 2 is calculated by: 60%×[(W×H)/(O.D)^2]

Table 3 - Standard cross-sections of round copper conductors

For comparison of standard cross-sections between AWG and metric sizes, refer to Table 3 (see IEC 60947-7-1,Table 1)

Metric size ISO (mm^2)	Comparison between AWG and metric sizes	
	Size (AWG)	Equivalent metric area (mm^2)
0.2	24	0.205
0.34	22	0.324
0.5	20	0.519
0.75	18	0.82
1	-	-
1.5	16	1.3
2.5	14	2.1
4	12	3.3
6	10	5.3

Table 4 - Wall, Bottom, Cover Thickness and Dimension



The declared dimensions in table 4 is shown in figure 7.

Duct Nominal Size (WxH) mm	Dimensions (mm)						Thickness (mm)		
	W	H	E	F	G	φ	Walls	Bottom	Cover
25x40	25	40	6.6	5.9	12.8	4.5	1.6	2.0	1.35
25x60	25	60	6.6	5.9	15.8	4.5	1.6	2.0	1.35
25x80	25	80	6.6	5.9	19.8	4.5	1.6	2.0	1.35
40x40	40	40	6.6	5.9	12.8	4.5	1.6	2.0	1.35
40x60	40	60	6.6	5.9	15.8	4.5	1.6	2.0	1.35
40x80	40	80	6.6	5.9	19.8	4.5	1.9	2.0	1.35
60x40	60	40	6.6	5.9	12.8	4.5	1.6	2.0	1.35
60x60*	60	60	6.6	5.9	15.8	4.5	1.9	2.0	1.35
60x80	60	80	6.6	5.9	19.8	4.5	1.9	2.0	1.35
80x60	80	60	6.6	5.9	15.8	4.5	1.9	2.0	1.5
80x80	80	80	6.6	5.9	19.8	4.5	1.9	2.0	1.5
80x100	80	100	6.6	5.9	19.8	4.5	1.9	2.0	1.5
100x60	100	60	6.6	5.9	15.8	4.5	1.9	2.0	1.5
100x80	100	80	6.6	5.9	19.8	4.5	2	2.0	1.5
100x100	100	100	6.6	5.9	19.8	4.5	1.9	2.0	1.5

Non-slotted Wiring Duct

Using RAAD Non-slotted wiring duct (HWD type) makes your room look more appealing by hiding and safely storing the wires that go across walls, and ceilings . HWDs are widely used in buildings, offices and residential properties, just to name a few. Using the HWDs will provide your wires with an appropriate casing, helping you to place your cables into pre-determined paths. This product comes with a cover to simplify the process of purchasing. The use of heat-resistant PVC avoids any damage caused by the heat-emitting equipments.

Nominal Size (WxH) mm	Ordering No.	Qty. in Package	Total Length in Package (m)
20 x 12	6110204003	65	130
20 x 20	6110204004	42	84
25 x 20	6110205004	36	72
30 x 30	6110206006	20	40
40 x 40	6110208008	20	40
60 x 40	6110212008	16	32
60 x 60	6110212012	12	24
100 x 60	6110220020	6	12

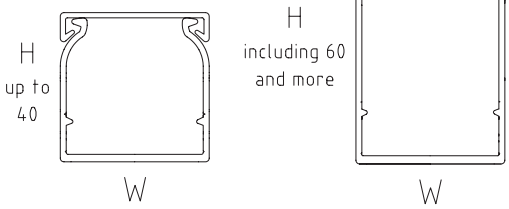


Figure 1

Duct Base Dimensional Details

Self-Adhesive Non-Slotted Wiring Duct

Using RAAD Self-adhesive non-slotted wiring duct (HWDS type) makes your room look more appealing by hiding and safely storing the wires that go across walls, and ceilings.

HWDS duct is made of HWD duct with a self-adhesive sticker, which is provided for faster and easier installation.

Using the HWDSs will provide your wires with an appropriate casing, helping you to place your cables into pre-determined paths. This product comes with a cover to simplify the process of purchasing. The use of heat-resistant PVC avoids any damage caused by the heat-emitting equipments.

Nominal Size (WxH) mm	Ordering No.	Qty. in Package	Total Length in Package (m)
20 x 12	6110204001	65	130
20 x 20	6110204002	42	84
25 x 20	6110205001	36	72
30 x 30	6110206001	20	40

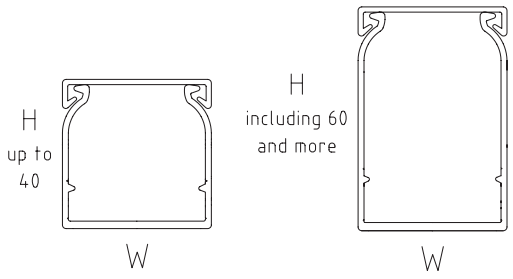
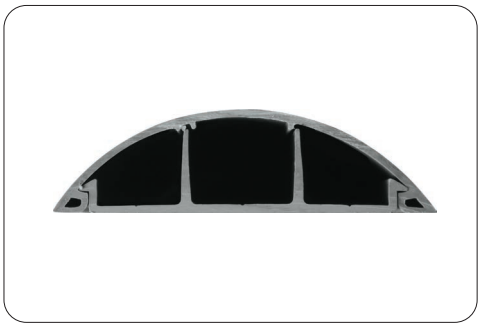


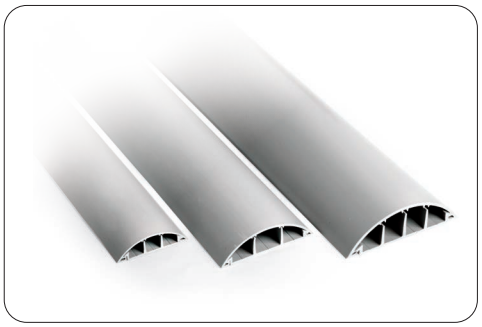
Figure 1

Duct Base Dimensional Details

Onfloor Wiring Duct (OWD)

- Insulating, shock-proof, self-extinguishing material
- Standard 2-meter long base complete with cover
- Complying with the EN 50085-2-2 European Standard
- Residential and commercial application
- Special design giving high resistance to pressure
- Degree of protection IP40
- Various compartments suitable for housing electric, telephone, and data transmission cables separately
- Providing optimum reliability and safety through compliance with relevant standards
- Providing high cable retention

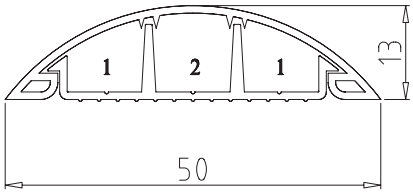




Nominal Size (WxH) mm	Ordering No.	Qty. in carton	Total Length in carton
50 x 13	6110310010	30	60
70 x 18	6110310014	14	28
90 x 24	6110310018	8	16

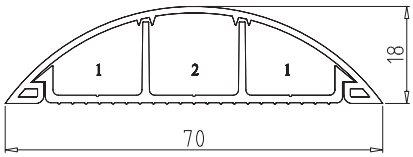
RAAD Onfloor Wiring Ducts can be ordered in 3 sizes as follows.

OWD 50 x 13



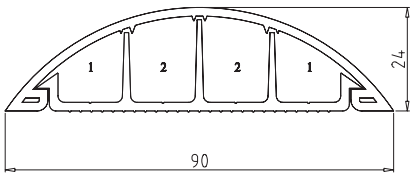
Duct Size		50 x 13	
Technical Information		Compartment	
		1	2
Useful cross section (mm²)		76	103
Cable Ø Max (mm)		9.1	11
Usable cross section area (mm²)	1.5	6	8
	2.5	5	6
	4	3	4
	6	2	3

OWD 70 x 18



Duct Size		70 x 18	
Technical Information		Compartment	
		1	2
Useful cross section (mm²)		174	244
Cable Ø Max (mm)		11	16.2
Usable cross section area (mm²)	1.5	11	15
	2.5	9	13
	4	6	10
	6	4	6

OWD 90 x 24



Duct Size		90 x 24	
Technical Information		Compartment	
		1	2
Useful cross section (mm²)		195.5	298
Cable Ø Max (mm)		12.9	16.2
Usable cross section area (mm²)	1.5	13	19
	2.5	10	16
	4	7	11
	6	5	7