

# CABLE DUCTS

## Wiring Channels



FRLS



## PVC - FRLS DUCTS

The flammability and smoke performance of rigid PVC (RPVC) plays a significant role in its selection for wiring duct applications. One of the most serious problems of general RPVC cable duct combustion is that it produces large volume of smoke and toxic gases which became the main cause of fire related death. Apart from the irritant effect of HCl gas on the eyes and respiratory system, smoke can cause disorientation and hinder escape from the scene of the fire, which impedes the entry of fire fighters. Hence the reduction of smoke emissions is clearly desirable.

Salzer PVC FRLS Cable Ducts efficiently carries and protects wires and cables, which are manufactured from specially compounded, low smoke, flame retarded and high impact rigid polyvinyl chloride (RPVC) resin. We modified RPVC wiring duct formulations and used low doses of plasticizer and lubricants to get higher limiting oxygen index (LOI) and low smoke density rating (SDR) with excellent flame retardant (V0) characteristics. Our wiring duct offers an effective resistance against fire propagation and emits very negligible amount of smokes during fire catching.

Salzer PVC FRLS cable duct has a flammability rating of V0, REACH and RoHS compliant and has a continuous use temperature upto 60 °C (140°F).

Wide range of colour, sizes and different slotting styles to meet the customer requirements.

PVC FRLS CABLE DUCTS TESTS				
Test	Test Purpose	Test Standard	Criteria	Typical Values
Limiting Oxygen index (LOI)	Minimum Oxygen concentration for supporting combustion of wiring duct insulation at normal temperature	ASTM D 2863	Min. 29	Min. 40
Temperature index	Temperature Index at which normal Oxygen content (21%) of Air will support combustion of wiring duct material	ASTM D 2863	>200°C	>200°C
Maximum Smoke density rating (SDR)	Indicates the visibility under fire	ASTM D 2843	< 60%	< 45%
Flammability class	Should be highly Flame retardant	UL - 94	V-0	Passed

PVC FRLS WIRING DUCT : RAW MATERIAL SPECIFICATIONS			
Properties	Units	Test Standard	Typical values
General Characteristics			
Specific gravity	g/cc	ASTM D 792	< 1.48
Heat Deflection temperature (HDT) @18.2Mpa	°F	ASTM D 648	Up to 160
Vicat softening point (VSP) at 5 Kg load	°F	ASTM D 1525	Up to 185
Water absorption	%	ASTM D 570	0.045
Hardness – Shore	D	D ASTM D 2240	Max. 78
Burning Characteristics			
Flammability class	-	UL - 94	V-0
Oxygen index test (LOI)	%	ASTM D 2863	Min. 40
Maximum Smoke density rating (SDR)	%	ASTM D 2843	< 50
Mechanical Characteristics			
Tensile modulus	Kg/cm <sup>2</sup>	ASTM D 638	>12000
Tensile strength at break	Kg/cm <sup>2</sup>	ASTM D 638	>390
Izod impact strength (Notched)	Kg.cm/cm	ASTM D 256	>7.0
Compressive strength	Kg/cm <sup>2</sup>	ASTM D 695	>1100
Electrical Characteristics			
Power factor	-	ASTM D 150	0.018
Dielectric constant	-	ASTM D 150	< 3
Dielectric strength	KV/mm	ASTM D 149	> 12
Surface resistivity	Ohm	ASTM D 257	>1 x 10 <sup>15</sup>
Volume resistivity	Ohm - cm	ASTM D 257	>3 x 10 <sup>16</sup>

Note: To the best of our knowledge the above information is accurate and Salzer assumes no liability for the accuracy of this information

**Halogen Free** low smoke ducts are becoming very popular where the protection of people and equipment from toxic and corrosive gas is critical. As the name suggest, these plastic materials do not contain any Halogen i.e. Chlorine, Bromine, Iodine etc; and hence whenever they burn they do not emit any toxic acidic gases (typically under 0.5% HCL emission). These are typically used in ipoorly ventilated areas such as aircraft, rail, cars or ships. It is also used extensively in the railroad industry, wherever high voltage or track signal wires must be run into and through underground ducts be damaged by fire or a short circuit fault.

Our cable ducts made-up of a polymeric blend of PC and ABS; confirms to IEC 60754-2 & have higher continuous use temperature up to 90°C and also confirms to the flammability rating of UL94-V-0).

Colour Available: Grey/Blue

Slot available: Thin and restricted slot

Cable Ducts : Raw Material Specifications			
Properties	Units	Test Standard	Typical Salzer Values
<b>General Characteristics</b>			
Specific gravity	<i>g/cc</i>	ASTM D 792	< 1.2
Heat Deflection temperature (HDT) @ 4.6 kg/cm2	<i>°F</i>	ASTM D 648	Up to 220
Vicat softening point (VSP) at 5 Kg load	<i>°F</i>	ASTM D 1525	Up to 240
Co-efficient of linear thermal expansion	<i>°C</i>	ASTM D 696	$7.2 \times 10^{-5}$
Hardness - Rockwell R	<i>R</i>	ISO 2039-2	124
Water absorption	<i>%</i>	ASTM D 570	0.6
<b>Burning Characteristics</b>			
Flammability class	-	UL - 94	V-0
Limiting oxygen index (LOI)	<i>%</i>	ASTM D 2863	Min.35
Maximum Smoke density rating (SDR)	<i>%</i>	ASTM D 2843	Max.25
<b>Mechanical Characteristics</b>			
Tensile modulus	<i>Kg / cm<sup>2</sup></i>	ASTM D 638	>2500
Tensile strength at break	<i>Kg / cm<sup>2</sup></i>	ASTM D 638	>525
Izod impact strength-notched	<i>cm-Kgf/cm</i>	ASTM D 256	Min. 65
Flexural modulus	<i>Kg f/cm<sup>2</sup></i>	ASTM D 790	Min. 25000
<b>Electrical Characteristics</b>			
Dielectric strength	<i>KV/mm</i>	ASTM D 149	Min. 25
Surface resistivity	<i>ohm</i>	ASTM D 257	>1.01 x 10 <sup>15</sup>
Volume resistivity	<i>ohm - cm</i>	ASTM D 257	

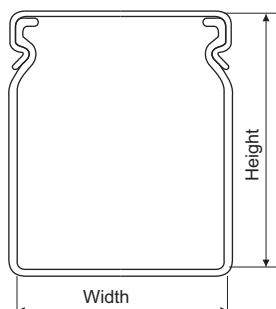
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## PVC FRLS Ducts

### A Type



Specially designed profiles of duct & cover for fast and efficient locking



Duct with cover Height x width in (mm)	Cable Housing Capacity (Nos)			Std Pack Duct with cover 1 mtrs	Std Pack Duct with cover 2 mtrs	Available Slotting Styles	Bottom Slot
	1.5 mm <sup>2</sup> OD 3.53 mm (16 AWG)	2.5 mm <sup>2</sup> OD 3.53 mm (14 AWG)	4 mm <sup>2</sup> OD 4.01 mm (12 AWG)				
	A15x15	11	9	7	100		
A15X25	19	15	12	100	64	S, H,U	B1
A25X25	31	25	20	100	48	S, O, T,U	B1
A30X25	37	30	23	100	48	S, O, T,U	B1
A40X30	59	48	37	75	32	S, T,U	B1
A45X25	56	45	35	75	40	S, O, C, M, T, L,U	B1
A45X30	67	54	42	50	32	S, O, C, M, T, L,U	B1
A45X45	100	81	63	50	18	S, O, C, M, T, L,U	B1
A45X60	134	108	84	50	12	S, O, C, M, T, L,U	B1
A60X25	74	60	47	50	18	S, O, T,U	B1
A60X45	134	108	84	50	18	S, O, T,U	B1
A60X60	178	145	112	50	12	S, O, T,U	B1
A60X120	356	289	224	18	8	S,U	B1
A75X45	167	135	105	40	12	S, T, C,U	B1
A75X75	278	226	175	32	12	S, T, C,U	B1
A80X80	316	257	199	25	12	S, T,U	B1
A100X100	495	401	311	18	8	S,U	B1

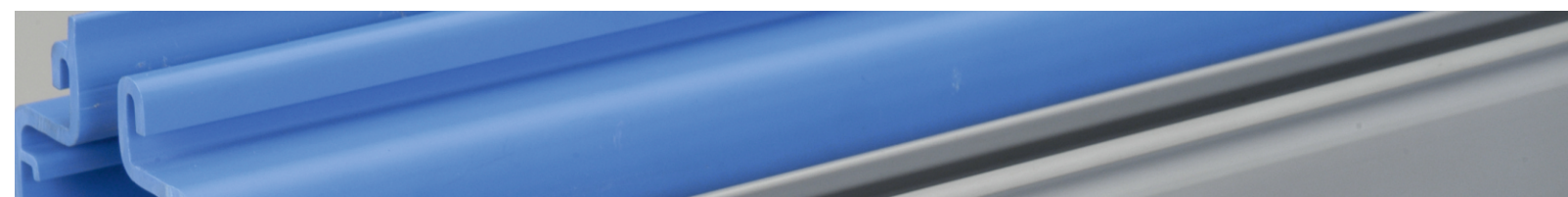
## Halogen Free Ducts

### B Type



Duct with cover width x Height in (mm)	Cablehousing Capacity (Nos)			Std Pack Duct with cover (in 1 mtrs)	Std Pack Duct with cover (in 2 mtrs)	Available Slotting Style	Bottom Slot
	1.5 mm <sup>2</sup> OD 3.18 mm (16 AWG)	2.5 mm <sup>2</sup> OD 3.53 mm (14 AWG)	4 mm <sup>2</sup> OD 4.01 mm (12 AWG)				
B25 x 30	37	30	23	100	36	T,U	B1
B25 x 40	48	39	31	75	36	T,U	B1
B25 x 60	72	57	45	50	18	T,U	B1
B25 x 80	92	75	59	50	18	T,U	B1
B25 x 100	126	105	81	25	18	T,U	B1
B40 x 40	81	65	51	50	18	T,U	B1
B40 x 60	121	98	77	50	18	T,U	B1
B40 x 80	160	130	102	50	18	T,U	B1
B40 x 100	200	164	128	25	12	T,U	B1
B60 x 40	123	99	78	50	18	T,U	B1
B60 x 60	180	146	114	50	12	T,U	B1
B60 x 80	245	199	156	40	12	T,U	B1
B60 x 100	308	247	194	30	8	T,U	B1
B80 x 40*	165	134	105	50	12	T,U	B6
B80 x 60*	251	203	159	40	12	T,U	B6
B80 x 80	337	272	214	32	12	T,U	B6
B80 x 100	416	332	248	24	8	T,U	B6
B100 x 60	316	256	201	30	8	T,U	B6
B100 x 80	425	344	270	25	8	T,U	B6
B100 x 100	531	429	336	18	8	T,U	B6

\* Under Development



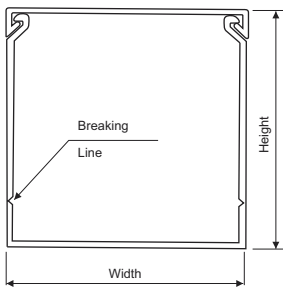
# B Type



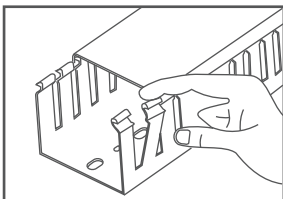
## PVC FRLS Ducts

Duct with cover width x Height in (mm)	Cablehousing Capacity (Nos)			Std Pack Duct with cover (in 1 mtrs)	Std Pack Duct with cover (in 2 mtrs)	Available Slotting Style	Bottom Slot
	1.5 mm <sup>2</sup> OD 3.18 mm (16 AWG)	2.5 mm <sup>2</sup> OD 3.53 mm (14 AWG)	4 mm <sup>2</sup> OD 4.01 mm (12 AWG)				
B25 x 30	37	30	23	100	36	S,T,U	B1
B25 x 40	48	39	31	75	36	S,T,U	B1
B25 x 45	50	41	33	75	36	S, T,U	B1
B25 x 60	72	57	45	50	18	S,T,U	B1
B25 x 80	92	75	59	50	18	S,T,U	B1
B25 x 100	126	105	81	50	18	S,U	B1
B30 x 20	37	30	23	100	36	U	B1
B30 x 80	92	75	59	50	18	S,T,U	B1
B40 x 40	81	65	51	50	18	S,T,U	B2
B40 x 60	121	98	77	50	18	S,T,U	B2
B40 x 80	160	130	102	50	18	S,T,O,U	B2
B40 x 100	200	164	128	50	12	S,T,U	B2
B45 x 20	40	32	25	75	36	U	B2
B45 x 45	102	82	64	50	18	S,T,U	B2
B50 x 100	135	195	152	30	12	S,T,U	B2
B60 x 20	61	50	39	50	18	U	B2
B60 x 40	123	99	78	50	18	S,T,U	B2
B60 x 60	180	146	114	50	12	S,T,U	B2
B60 x 80	246	199	156	40	12	S,T,O,U	B2
B60 x 100	308	247	194	30	8	S,T,U	B2
B72 x 64	234	190	149	32	18	S,U	B2
B75 x 75	291	236	185	32	8	S,U	B2
B75 x 100	394	333	251	50	8	S,T,U	B2
B80 x 40	165	134	105	50	12	S,T,U	B3
B80 x 60	251	203	159	40	12	S,T,U	B3
B80 x 80	337	272	214	32	12	S,T,O,U	B3
B80 x 100	416	332	248	24	8	S,T,U	B3
B100 x 60	316	256	201	30	8	S,T,U	B3
B100 x 80	425	344	270	25	8	S,T,U	B3
B100 x 100	531	429	336	18	8	S,T,U	B3
B120 x 80	525	420	330	18	8	S,T,U	B3
B150 x 100	807	653	512	12	4	S,T,U	B4
B150 x 150	1200	970	760	8	4	S,T,U	B4

Non slip cover design of minimum encumbrance and maximum grip



Snap-off side wall fingers permit enlarging slot for any size of wire or wire bundles Requires no tools for cutting



Special Profiles

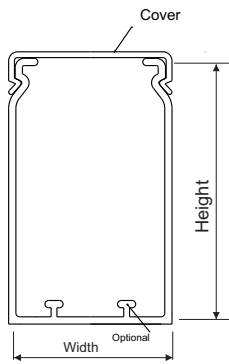


# DIN STANDARD DUCTS

## E Type



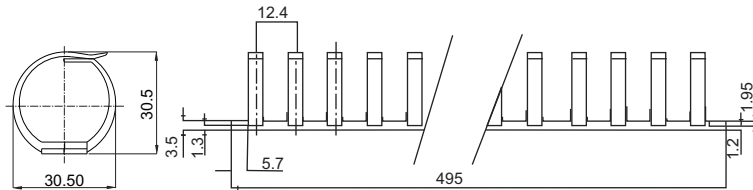
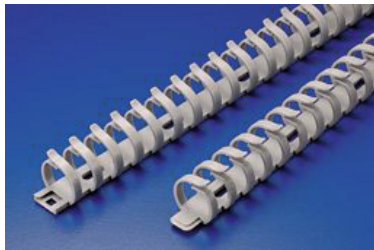
Specially designed profiles of duct & cover for fast and efficient locking



## PVC & Halogen Free

Duct with cover Height x width in (mm)	2.5 Sq. mm, OD 3.53 mm (14AWG)	Std Pack Duct with cover (in 2 mtrs)	Available Slotting Style	Bottom Slot
E25 x 25	21	48	R,U	B1
E37.5 x 25	38	20	R,U	B1
E37.5 x 37.5	57	20	R,U	B1
E37.5 x 50	76	24	R,U	B1
E50 x 25	51	20	R,U	B1
E50 x 37.5	76	16	R,U	B1
E50 x 50	101	16	R,U	B1
E50 x 75	152	12	R,U	B5
E50 x 100	195	8	R,U	B5
E50 x 125	190	4	R,U	B5
E75 x 25	76	18	R,U	B1
E75 x 37.5	110	12	R,U	B1
E75 x 50	152	12	R,U	B1
E75 x 75	177	12	R,U	B5
E75 x 100	249	8	R,U	B5
E75 x 125	285	4	R,U	B5

## FLEXIBLE WIRING DUCT



### Features

- UL Recognized Polyamide Material
- Continues Operation Temperatures From -30°C to 90°C
- Flammability Rating UL94 V-0
- Subject to Bend Without Breaking
- Adhesive Tape Provided for Easy Mounting

## ACCESSORIES

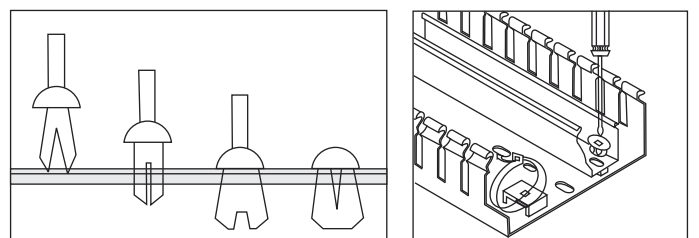
For B Type

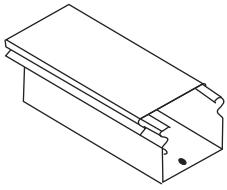
Part Name	Figure	Ordering Code	Standard Packing
Fixing Lug		BFL 1	100
Cable Tie Attachment		BCT 1	100
Nylon Fastener		BNF 6 (6 mm) BNF 4 (4 mm)	100 100
Wire Retainer *		BWRT (Thin) BWRS (Std)	100
Name Plate		BNPT (Thin) BNPS (Std)	100
Mounting Clip I		BMC 1	100
Mounting Clip II		BMC 2	100

\* Pls. specify size while Ordering.

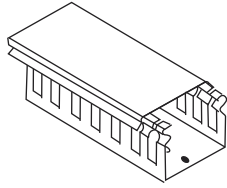
For E Type

Part Name	Figure	Ordering Code	Standard Packing
Cable Clamp		EKBH1	100
Wire Retainer		EKHXXX EWH50100	100
Divider		EDR50	100
Universal Wire Retainer		EWRRU	100

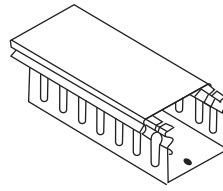




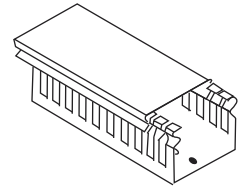
Unslotted (US)



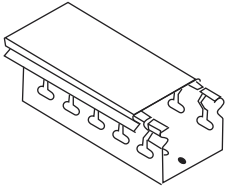
Standard Slotted (S)



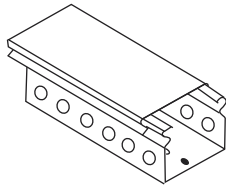
Straight Slotted (L)



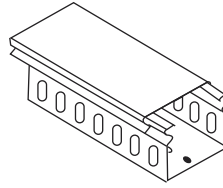
Thin Slotted (T)



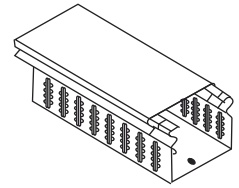
Horizontal Slotted (H)



Circular Slotted (C)



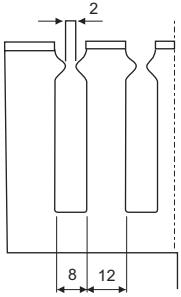
Oblong Slotted (O)



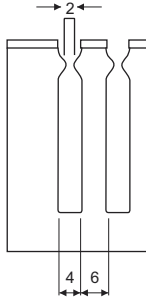
Multiple Slotted (M)

## Slotting Dimension - Side

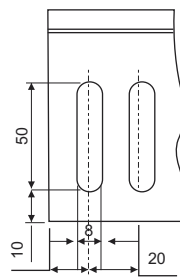
S (Standard Slot)



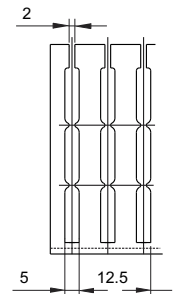
T (Thin Slot)



O (Oblong Slot)

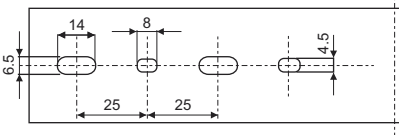


R (Restricted Slot)

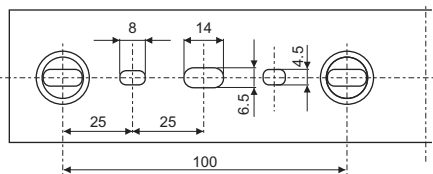


## Slotting Dimension - Bottom

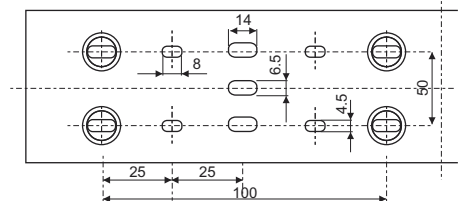
B1



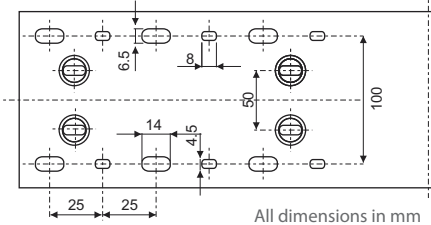
B2



B3

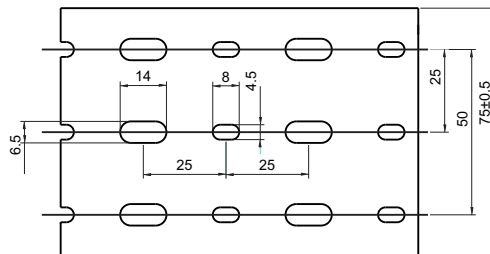


B4

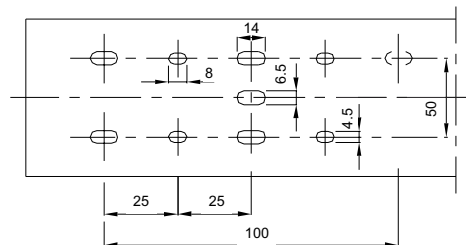


All dimensions in mm

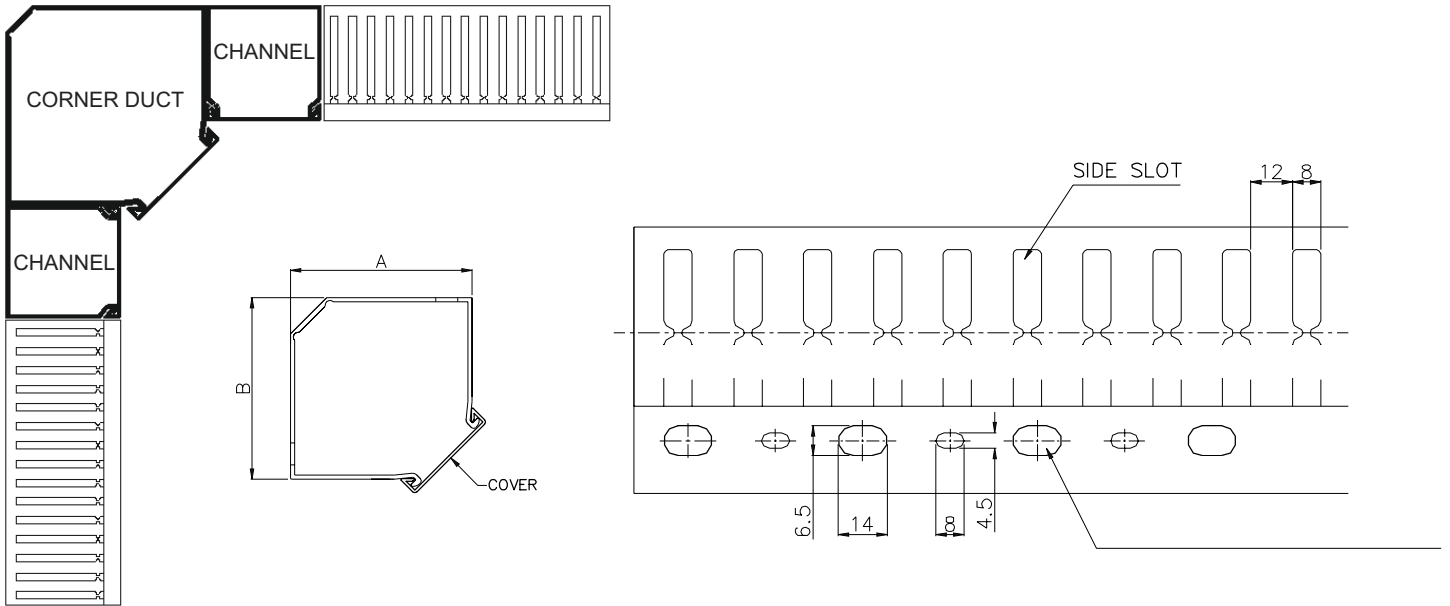
B5



B6



## CORNER DUCT : FRLS

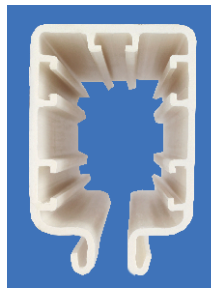
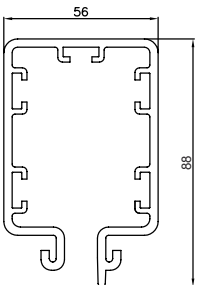


### Details / Features :

- Material : Rigid PVC, RoHS Compliance, Grey Color
- Fits in the unused space in the vertical Corner of enclosures / Control panels
- To reduce wiring time and control panel assembly costs. Increased Panel Appearance
- Corner duct cover : Existing standard cover
- Slots : side slots and bottom slots existing standard sizes.

Dimn. A	Dimn. B	Cover Size
100 mm	100 mm	60 mm
70 mm	70 mm	40 mm
45 mm	45 mm	25 mm

## POWER DUCT



### Details of Power Duct :

- Material : Rigid PVC UL94 VO
- Color : White / Ivory / Yellow / Grey
- Dimension : 88 x 56 (H x W) Unslotted
- Standard Length : 4.010Mtr (can be given in 2M, 3M also)
- Application : Used in Over Head Cleaners in Textile Industry.  
Used in the Cranes / Hoists.
- Special profiles can be developed as per Customer drawing.

## Ordering Procedure

Type	Size (mm)	Slotting	Colour	Material	Cat Code 1 Meter	Std Pkg	Cat Code 2 Meter	Std Pkg
A	45 x 45	<b>S</b>	<b>Grey</b>	PVC	A4545 <b>SG</b>	50	A4545SG2	18
B	60 x 60	<b>T</b>	<b>Grey</b>	PVC	B6060 <b>TG</b>	50	B6060TG2	12
B	40 x 80	<b>T</b>	<b>Greenish Grey</b>	Halogen Free	B4080 <b>HGG</b>	50	B4080HGG2	18
B	100 x 100	<b>T</b>	<b>Blue</b>	PVC	B100100 <b>TBL</b>	18	B100100TBL2	8
E	37.5 x 25	<b>R</b>	<b>Greenish Grey</b>	PVC	-	-	E37.5x25RGG2	20

Product improvement is a continuous process. Hence data given in this catalogue is subject to change without intimation.

## Salzer Electronics Limited, Unit - II

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