Panduct® Type TNC - Low-Smoke, Halogen-Free, Slotted Wall Wiring Duct



specifications

Type TNC wiring duct shall be a flush cover, slotted wiring duct and be made from low-smoke and halogen-free (LSHF) material that meets the regulatory requirements of the mass transit industry and other regulated environments. The low-smoke and halogen-free material will have a UL flammability rating of UL94 V-0 and will meet the National Fire Protection Association Standard NFPA 1301 and Federal Rail Administration Guidelines² for rail transit vehicles. Type TNC wiring duct shall be compliant with DIN 5510-23 preventative fire protection in railway vehicles, with S-4 burning class, SR-2 smoke class, and ST-2 dripping class ratings.



technical information

Low-smoke, halogen-free material:	Non-toxic, lead-free, and environmentally safe; will not exhibit a high rate of smoke generation or release toxic, corrosive gases in the event of a fire that could endanger public safety or damage sensitive electronics in enclosed environments (passenger rail, oil and gas platforms)
UL94 V-0 material flame rating:	Self-extinguishing and provides a greater flame resistance when compared to other halogen-free wiring duct, enabling its use in more electrical applications
Temperature range:	Continuous use up to a maximum of 105°C (221°F) ⁴ ; shipping, handling, and installation to -70°C (-94°F)
Rail standard compliance/rating:	NFPA 130 ¹ DIN 5510-2 ³ BSS 7239 ⁵ AFNOR NF F 16 101 and NF F 16 102 ⁶ UNIFER EN UNI 11925-2 (EN ISO 11925-2) ⁷ EN 455545-2 ⁸
Compliance:	RoHS REACH compliant; UL recognized.

key features and benefits

Wide-finger/ slot design	Provides greater sidewall rigidity and allows use with a wide range of wire and bundle sizes
Flush cover design	Base sidewall is even with cover for superior aesthetics and greater wiring capacity when compared to non-flush cover wiring duct
Non-slip cover liner	Halogen-free liner ensures that the cover does not slide during shipment, vibration, and when in a vertical orientation, eliminating rework and repositioning
Base and finger score lines	Score lines allow for easy breakouts, saving installation time, when compared to other halogen-free duct
Low-smoke, halogen-free divider wall	Used to create multiple channels within a single duct to separate cabling types (power communication/signal); installed with DB-C mounting discs

applications

Type TNC wiring duct routes, protects, and manages electrical and communication cabling in control panels and wire routing applications that require enhanced material performance for fire safety (flame, smoke,

and toxicity) such as in light rail and transit systems, commuter buses, data centers, offshore oil and gas platforms, and other environments.

¹NFPA 130 Standard for Fixed Guideway Transit and Passenger Rail Systems, 2000 edition.

²Per Code of Federal Regulation 49 C.F.R. Part 223, 238. ³German Standard DIN 5510-2; DIN 54837 (test method).

⁴Maximum temperature based on material Heat Deflection Temperature (HDT) data.

Behaviour: Material choosing, application for electric system.

*UNIFER Italian Railway Standard EN UNI 11925-2 (EN ISO 11925-2).
*EN 45545-2 (EU Standard: Railway applications - Fire protection on railway vehicles - Part 2: Requirements for fire behavior of materials

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TNC Wiring Duct (Base and Cover)

Size - mm (in.)

25.0 (1.00) x 37.0 (1.50):

TNC25X37LG2

25.0 (1.00) x 75.0 (3.00):

TNC25X75LG2

37.0 (1.50) x 37.0 (1.50):

TNC37X37LG2

37.0 (1.50) x 75.0 (3.00):

TNC37X75LG2

50.0 (2.00) x 50.0 (2.00):

TNC50X50LG2

75.0 (3.00) x 75.0 (3.00):

TNC75X75LG2

100.0 (4.00) x 50.0 (2.00)

100.0 (4.00) x 75.0 (3.00):

TNC100X75LG2

TNC100X50LG2

Replacement Covers

Size - mm (in.)

25.0 (1.00): TNC25LG2 37.0 (1.50): TNC37LG2 50.0 (2.00): TNC50LG2 50.0 (2.00): TNC75LG2

100.0 (4.00): TNC100LG2

Divider Wall

LSHF 50mm (2")

solid divider wall: TNC50D2

LSHF 75mm (3")

TNC75D2 solid divider wall:

Divider wall

DB-C mounting disc:

Tools and Accessories

Duct cutting tool: Notching tool:

DCT **DNT-100**

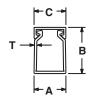
Nylon rivet installation tool:

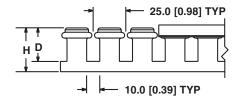
TNR NR₁

DFCT

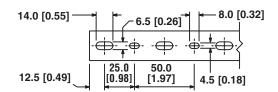
Nylon rivet: **Duct finger** cutting tool:

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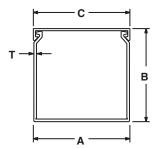


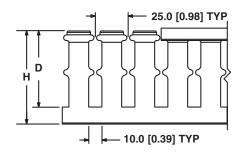


For 37mm and 50mm height duct

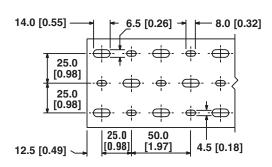


For 25mm, 37mm and 50mm width duct*





For 75mm and 100mm height duct



For 75mm and 100mm width duct*

Duct Part Nominal Size		Dimensions - mm (In.)					
Number	W x H mm (in.)	Α	В	С	D	Н	Т
TNC25X37LG2	25 x 37 (1 x 1.5)	24.6 (0.97)	35.8 (1.41)	24.6 (0.97)	24.7 (0.97)	33.0 (1.30)	1.7 (0.07)
TNC25X75LG2	25 x 75 (1 x 3)	24.6 (0.97)	72.4 (2.85)	24.6 (0.97)	57.6 (2.27)	70.5 (2.78)	2.0 (0.08)
TNC37X37LG2	37 x 37 (1.5 x 1.5)	37.1 (1.46)	35.8 (1.41)	37.1 (1.46)	24.7 (0.97)	33.0 (1.30)	1.8 (0.07)
TNC37X75LG2	37 x 75 (1.5 x 3)	37.1 (1.46)	72.4 (2.85)	37.1 (1.46)	57.6 (2.27)	70.5 (2.78)	2.0 (0.08)
TNC50X50LG2	50 x 50 (2 x 2)	49.6 (1.95)	47.8 (1.88)	49.6 (1.95)	34.8 (1.37)	45.5 (1.79)	2.0 (0.08)
TNC75X75LG2	75 x 75 (3 x 3)	74.6 (2.94)	72.4 (2.85)	74.6 (2.94)	57.6 (2.27)	70.5 (2.78)	2.0 (0.08)
TNC100X50LG2	100 x 50 (4 x 2)	99.6 (3.92)	47.8 (1.88)	99.6 (3.92)	34.8 (1.37)	45.5 (1.79)	2.0 (0.08)
TNC100X75LG2	100 x 75 (4 x 3)	99.6 (3.92)	72.4 (2.85)	99.6 (3.92)	57.6 (2.27)	70.5 (2.78)	2.5 (0.10)

Dimensions shown are for reference only. Dimensions above are mm (inches). Duct and divider wall supplied in two meter length.

Divider wall for 50mm and 75mm height duct

TNC Wiring Duct Material (PPE+HIPS)					
Properties	General	Test Method			
Specific Gravity	1.11 g/cc	ASTM D 792			
Heat Deflection Temperature @264 psi	106°C 223°F	ASTM D 648			
Flame/Smoke/Toxicity					
Smoke Density (Flaming) @ 1.5 and 4 min.	Ds @ 1.5 min = 16 Ds @ 4.0 min = 66	ASTM E 662			
Flammability Class	V-0	UL94			
Flame Spread Index	ls =15	ASTM E 162			
Total Heat Release	66.21 MJ/m ²	ASTM E1354			
Low Toxicity	Yes	BSS 7239			

PPE + HIPS (Polyphenylene Ether + High Impact Polystyrene)

TNC Wiring Duct Material (PPE+HIPS)						
Properties	Mechanical	Test Method				
Tensile Strength at Yield	8,100 psi	ASTM D 638				
Tensile Modulus	355,000 psi	ASTM D 638				
Flexural Strength at Yield	11,500 psi	ASTM D 790				
Flexural Modulus	340,000 psi	ASTM D 790				
Notched Izod Impact Strength @ 23°C (73°F)	3.7 ft-lb/in.	ASTM D 256				
Regional Standards						
NFPA 130 (U.S. Standard for Fixed Guideway Transit and Passenger Rail Systems)	Pass (ls<35, Ds1.5<100, Ds4<200)	ASTM E 162; ASTM E 662				
DIN 5510 (Preventative fire protection in railway vehicles)	Burning class: S-4 Smoke class: SR-2 Dripping class: ST-2	DIN 5510-2; DIN 54837				
NF F16 101, NF F 16 102 (smoke density, toxicity, glowing filament, oxygen index)	F1/I4	NF X 1-702 NF X 70-100 NF EN 60695-2 NF EN ISO 4589-2				
UNIFER Italian Railway Standard	Pass	EN UNI 11925-2 (EN ISO 11925-2)				

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^{*}Mounting hole pattern according to DIN 43659.