

Plastic tubing PUN-H, PUN-H-DUO

FESTO



Characteristics

At a glance

Flexible and hydrolysis-resistant tubing with standard O.D. in various colors in single or double tubing design

- Polyurethane
- High resistance to microbes and hydrolysis
- Food grade see www.festo.com/certificates/PUN_H
- Suitable for energy chains
- Also available as DUO plastic tubing
- Operating media: compressed air, vacuum, water
- Very easy installation due to “one-click” principle

Recommended hose/fitting combinations (further information at www.festo.com/catalogue/pun-h → Support/Downloads):

- PUN-H/PUN-H-DUO with QS fitting (for tubing size 2 to 12; 16 and 22)
- PUN-H/PUN-H-DUO with NPQH fitting (for tubing size 4 to 14)
- PUN-H with NPKA fitting (for tubing size 6) → combination compatible with cleanroom

Additional documents

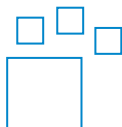
[Link](#) [pun-h](#)



The additional document TUBING-ADD contains further information on application details such as tubing-fitting combinations, installation instructions, and measurement procedures.

Ordering data - modular system

[Link](#) [pun-h](#)



Configurable product

This product and all its product options can be ordered online via the configurator.

Engineering Tools

[Link](#) [engineering tools](#)



Save time with engineering tools: Smart engineering for the optimal solution. Our goal is to increase your productivity. Our engineering tools play an integral part in achieving this goal. Throughout the entire value chain, they help you size your system correctly, tap into unimagined productivity reserves or generate additional productivity. In every phase of your project, from initial contact to modernization of your machine, you will come across a number of tools that will prove beneficial to you.

- Flow calculation: Determine the nominal flow rate by entering parameters such as input pressure, outlet pressure, tube length and internal diameter (www.festo.com/x/flowrate-calculation).
- Media resistance: Assess the resistance of various types of materials and tubing from Festo to different chemicals and media (www.festo.com/x/media-resistance).

Diagrams

[Link](#) [pun-h](#)



The diagrams shown in this document are also available online. There, it is possible to display precise values.

Alternative material characteristic

[H] Hydrolysis-resistant

Hydrolysis-resistant and suitable for water applications.

Pipe/tubing O.D. x wall thickness

For standard O.D. tubing, the outside diameter of the tube and the wall thickness are given as the tube size.

Characteristics

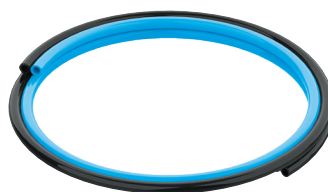
Tubing type

[] Standard



Consists of a single hose

[DUO] DUO pneumatic tubing



Two pieces of tubing are welded together to form a pair. For assembly, the tubing pair is cut to the required length at both ends.

Packaging unit [m]

- Standard: 50 m
- In some cases, available in longer lengths on a reel.

Type code

001	Series	
PUN	Plastic tubing, polyurethane	

002	Alternative material characteristic	
H	Hydrolysis-resistant	

003	Pipe/tubing O.D. x wall thickness	
2x0,4	2x0.4 mm	
3x0,5	3x0.5 mm	
4x0,75	4x0.75 mm	
6x1	6x1 mm	
8x1,25	8x1.25 mm	
10x1,5	10x1.5 mm	
12x2	12x2 mm	
14x2	14x2 mm	
16x2,5	16x2.5 mm	

004	Tubing type	
	Standard	
DUO	DUO pneumatic tubing	

005	Color	
	Blue/black	
BL	Blue	
GE	Yellow	
GN	Green	
NT	Natural	
RT	Red	
SI	Silver	
SW	Black	
TBL	Translucent blue	
TGE	Translucent yellow	
TGN	Translucent green	
TRT	Translucent red	
TSW	Translucent black	

006	Packaging unit [m]	
	Standard	
25	25 m	
100	100 m	
200	200 m	
300	300 m	
400	400 m	
500	500 m	

Datasheet

Operating and environmental conditions PUN-H with outside Ø 2 mm

Outside diameter	2 mm
Inside diameter	1.2 mm
Pneumatic connection	For plug connection outside diameter 2 mm
Bending radius relevant for flow rate	8 mm
Min. bending radius	5 mm
Temperature-dependent operating pressure	-0.095 ... 1 MPa
Temperature-dependent operating pressure	-0.95 ... 10 bar
Temperature-dependent operating pressure	-13.775 ... 145 psi
Operating pressure for entire temperature range	-0.095 ... 0.6 MPa
Operating pressure for entire temperature range	-0.95 ... 6 bar
Operating pressure for entire temperature range	-13.775 ... 87 psi
Operating medium	Compressed air as per ISO 8573-1:2010 [7:-]
Ambient temperature	-35 ... 60°C
Tubing characteristics	Suitable for energy chains

Operating and environmental conditions PUN-H with outside Ø 3 ... 16 mm

Outside diameter	3 mm	4 mm	6 mm	8 mm	10 mm	12 mm	14 mm	16 mm
Inside diameter	2.1 mm	2.6 mm	4 mm	5.7 mm	7 mm	8 mm	9.8 mm	11 mm
Pneumatic connection	For plug connection outside diameter 3 mm	For plug connection outside diameter 4 mm For plug connection outside diameter 5/32" For barbed fitting, inside diameter 3 mm, with union nut	For plug connection outside diameter 6 mm For barbed fitting, inside diameter 4 mm, with union nut	For plug connection outside diameter 8 mm For plug connection outside diameter 5/16" For barbed fitting, inside diameter 6 mm, with union nut	For plug connection outside diameter 10 mm	For plug connection outside diameter 12 mm	For plug connection outside diameter 14 mm	For plug connection outside diameter 16 mm
Bending radius relevant for flow rate	12 mm	16 mm	26 mm	37 mm	52 mm	62 mm	78 mm	88 mm
Min. bending radius	6 mm	8 mm	10 mm	21 mm	28 mm	33 mm	38 mm	
Temperature-dependent operating pressure	-0.095 ... 1 MPa							
Temperature-dependent operating pressure	-0.95 ... 10 bar							
Temperature-dependent operating pressure	-13.775 ... 145 psi							
Operating pressure for entire temperature range	-0.095 ... 0.6 MPa							
Operating pressure for entire temperature range	-0.95 ... 6 bar							
Operating pressure for entire temperature range	-13.775 ... 87 psi							
Information on operating pressure	Water: temperature-dependent operating pressure, see diagram, max. 0.3 MPa at 0 - 60°C							
Operating medium	Compressed air as per ISO 8573-1:2010 [7:-] Water (liquid, ice-free)							
For use in the food industry ¹⁾	See supplementary material information							
Ambient temperature	-35 ... 60°C							
Material fire test	UL94 HB							
Certification	TÜV							
Certificate issuing authority	B 013277 0527 00							
Tubing characteristics	Suitable for energy chains							

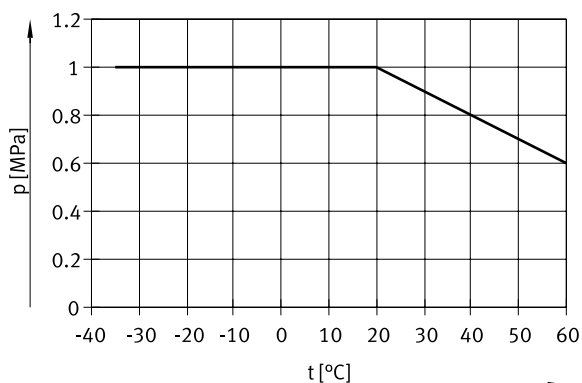
1) More information www.festo.com/catalogue/pun-h → Support/Downloads.

Datasheet

Operating and environmental conditions PUN-H-DUO				
Outside diameter	4 mm	6 mm	8 mm	10 mm
Inside diameter	2.6 mm	4 mm	5.7 mm	7 mm
Pneumatic connection	For plug connection outside diameter 4 mm For plug connection outside diameter 5/32" For barbed fitting, inside diameter 3 mm, with union nut	For plug connection outside diameter 6 mm For barbed fitting, inside diameter 4 mm, with union nut	For plug connection outside diameter 8 mm For plug connection outside diameter 5/16" For barbed fitting, inside diameter 6 mm, with union nut	For plug connection outside diameter 10 mm
Bending radius relevant for flow rate	16 mm	26 mm	37 mm	52 mm
Min. bending radius	8 mm	10 mm	21 mm	28 mm
Temperature-dependent operating pressure	-0.095 ... 1 MPa			
Temperature-dependent operating pressure	-0.95 ... 10 bar			
Temperature-dependent operating pressure	-13.775 ... 145 psi			
Operating pressure for entire temperature range	-0.095 ... 0.6 MPa			
Operating pressure for entire temperature range	-0.95 ... 6 bar			
Operating pressure for entire temperature range	-13.775 ... 87 psi			
Information on operating pressure	Water: temperature-dependent operating pressure, see diagram, max. 0.3 MPa at 0 - 60°C			
Operating medium	Compressed air as per ISO 8573-1:2010 [7:-:-] Water (liquid, ice-free)			
For use in the food industry ¹⁾	See supplementary material information			
Ambient temperature	-35 ... 60°C			
Material fire test	UL94 HB			
Certification	TÜV			
Certificate issuing authority	B 013277 0527 00			
Tubing characteristics	Suitable for energy chains			

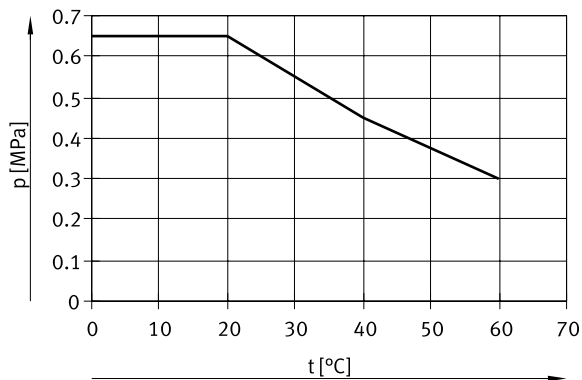
1) Further information www.festo.com/catalogue/pun-h → Support/Downloads.

Operating pressure p as a function of temperature t



Datasheet

Operating pressure p as a function of temperature t (medium: water)



Deviating maximum operating pressures apply to the medium water, with a safety factor of $s=4$.

Materials

Shore hardness	D 52 +/- 3
Material of pneumatic tubing	TPE-U(PU)
Note on materials	RoHS compliant
LABS (PWIS) conformity ¹⁾	VDMA24364-B2-L
Suitability for the production of Li-ion batteries ²⁾	Suitable for battery production with reduced Cu/Zn/Ni values (F1a)
Application note	TPE-U, ether-based

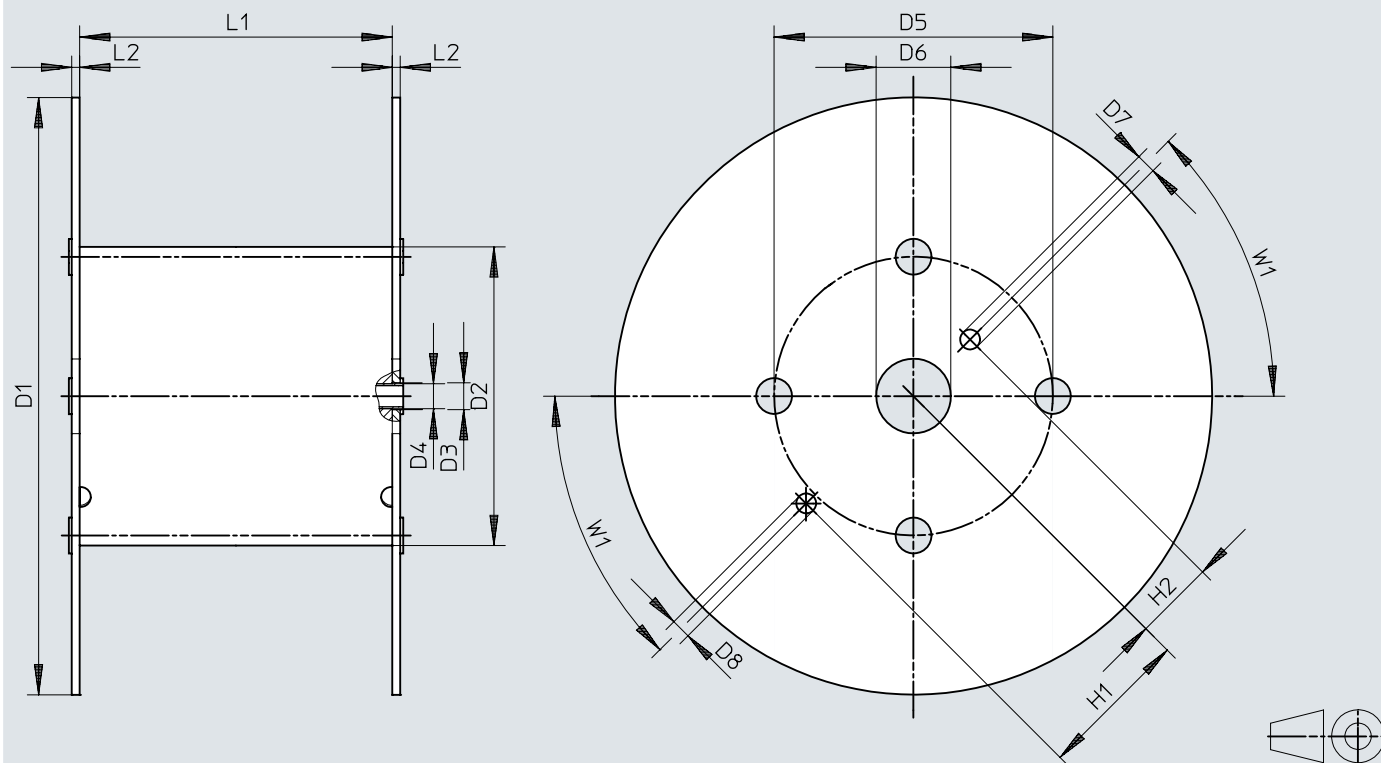
1) applies to PUN-H with outside Ø 3 ... 16 mm and PUN-H-DUO

2) applies to PUN-H with outside Ø 3 ... 16 mm and PUN-H-DUO

Dimensions

Dimensions – Reel

Download CAD data www.festo.com



	D1 Ø	D2 Ø	D3 Ø	D4 Ø	D5 Ø	D6 Ø	D7 Ø	D8 Ø	H1	H2	L1	L2	W1
PUN-H-3x0,5-...-500	545	246	21	20	216	75	20	20	152,5	80,5	128	8	45°
PUN-H-4x0,75-...-500	545	246	21	20	216	75	20	20	152,5	80,5	128	8	45°
PUN-H-6x1-...-500	545	246	21	20	216	75	20	20	152,5	80,5	128	8	45°
PUN-H-8x1,25-...-400	545	310	21	20	280	75	20	20	152,5	80,5	254	8	45°
PUN-H-10x1,5-...-300	600	310	21	20	280	75	20	20	152,5	80,5	254	8	45°
PUN-H-12x2-...-200	600	310	21	20	280	75	20	20	152,5	80,5	254	8	45°
PUN-H-16x2,5-...-100	545	310	21	20	280	75	20	20	152,5	80,5	254	8	45°

Ordering data

Ordering data PUN-H						
	Outside diameter	Packaging unit [m] ¹⁾	Product weight by length	Color	Part no.	Type
	2 mm	Standard	0.002 kg/m	nature	133038	PUN-H-2X0,4-NT
	3 mm			Red	133040	PUN-H-2X0,4-RT
				Black	133039	PUN-H-2X0,4-SW
			0.004 kg/m	Blue	197382	PUN-H-3X0,5-BL
				Yellow	558298	PUN-H-3X0,5-GE
				Green	558291	PUN-H-3X0,5-GN
				nature	197375	PUN-H-3X0,5-NT
				Red	558284	PUN-H-3X0,5-RT
				Black	197389	PUN-H-3X0,5-SW
				Silver	558277	PUN-H-3X0,5-SI
				500 m	Blue	558256
			nature		558263	PUN-H-3X0,5-NT-500
	Black		558249		PUN-H-3X0,5-SW-500	
	Silver		558270		PUN-H-3X0,5-SI-500	
	4 mm	Standard	0.009 kg/m		Blue	197383
	Yellow			558299	PUN-H-4X0,75-GE	
	Green			558292	PUN-H-4X0,75-GN	
	nature			197376	PUN-H-4X0,75-NT	
	Red			558285	PUN-H-4X0,75-RT	
	Black			197390	PUN-H-4X0,75-SW	
	Silver			558278	PUN-H-4X0,75-SI	
	translucent blue			8048671	PUN-H-4X0,75-TBL	
	translucent yellow			8048679	PUN-H-4X0,75-TGE	
	translucent green			8048677	PUN-H-4X0,75-TGN	
	translucent red			8048675	PUN-H-4X0,75-TRT	
	translucent black			8048673	PUN-H-4X0,75-TSW	
	25 m			Blue	8205512	PUN-H-4X0,75-BL-25
				Red	8204445	PUN-H-4X0,75-RT-25
		Black	8205515	PUN-H-4X0,75-SW-25		
		translucent blue	8205518	PUN-H-4X0,75-TBL-25		
	500 m	Blue	558257	PUN-H-4X0,75-BL-500		
		nature	558264	PUN-H-4X0,75-NT-500		
		Black	558250	PUN-H-4X0,75-SW-500		
		Silver	558271	PUN-H-4X0,75-SI-500		
		translucent blue	8048672	PUN-H-4X0,75-TBL-500		
		translucent yellow	8048680	PUN-H-4X0,75-TGE-500		
		translucent green	8048678	PUN-H-4X0,75-TGN-500		
		translucent red	8048676	PUN-H-4X0,75-TRT-500		
		translucent black	8048674	PUN-H-4X0,75-TSW-500		
		6 mm	Standard	0.018 kg/m	Blue	197384
	Yellow	558300			PUN-H-6X1-GE	
	Green	558293			PUN-H-6X1-GN	
	nature	197377			PUN-H-6X1-NT	
	Red	558286			PUN-H-6X1-RT	
	Black	197391			PUN-H-6X1-SW	
	Silver	558279			PUN-H-6X1-SI	
	translucent blue	8048681			PUN-H-6X1-TBL	
	translucent yellow	8048689			PUN-H-6X1-TGE	
	translucent green	8048687			PUN-H-6X1-TGN	
	translucent red	8048685			PUN-H-6X1-TRT	

Ordering data

Ordering data PUN-H									
	Outside diameter	Packaging unit [m] ¹⁾	Product weight by length	Color	Part no.	Type			
	6 mm	Standard	0.018 kg/m	translucent black	8048683	PUN-H-6X1-TSW			
		25 m		Blue	8205513	PUN-H-6X1-BL-25			
				Red	8204446	PUN-H-6X1-RT-25			
				Black	8205516	PUN-H-6X1-SW-25			
				translucent blue	8205519	PUN-H-6X1-TBL-25			
				Blue	558258	PUN-H-6X1-BL-500			
		500 m		nature	558265	PUN-H-6X1-NT-500			
				Black	558251	PUN-H-6X1-SW-500			
				Silver	558272	PUN-H-6X1-SI-500			
				translucent blue	8048682	PUN-H-6X1-TBL-500			
				translucent yel- low	8048690	PUN-H-6X1-TGE-500			
				translucent green	8048688	PUN-H-6X1-TGN-500			
				translucent red	8048686	PUN-H-6X1-TRT-500			
				translucent black	8048684	PUN-H-6X1-TSW-500			
	8 mm	Standard	0.029 kg/m	Blue	197385	PUN-H-8X1,25-BL			
				Yellow	558301	PUN-H-8X1,25-GE			
				Green	558294	PUN-H-8X1,25-GN			
				nature	197378	PUN-H-8X1,25-NT			
				Red	558287	PUN-H-8X1,25-RT			
				Black	197392	PUN-H-8X1,25-SW			
				Silver	558280	PUN-H-8X1,25-SI			
				translucent blue	8048691	PUN-H-8X1,25-TBL			
				translucent yel- low	8048699	PUN-H-8X1,25-TGE			
				translucent green	8048697	PUN-H-8X1,25-TGN			
				translucent red	8048695	PUN-H-8X1,25-TRT			
				translucent black	8048693	PUN-H-8X1,25-TSW			
		25 m		Blue	8205514	PUN-H-8X1,25-BL-25			
				Red	8204447	PUN-H-8X1,25-RT-25			
				Black	8205517	PUN-H-8X1,25-SW-25			
				translucent blue	8205520	PUN-H-8X1,25-TBL-25			
		400 m		Blue	558259	PUN-H-8X1,25-BL-400			
				nature	558266	PUN-H-8X1,25-NT-400			
				Black	558252	PUN-H-8X1,25-SW-400			
				Silver	558273	PUN-H-8X1,25-SI-400			
				translucent blue	8048692	PUN-H-8X1,25-TBL-400			
				translucent yel- low	8048700	PUN-H-8X1,25-TGE-400			
				translucent green	8048698	PUN-H-8X1,25-TGN-400			
				translucent red	8048696	PUN-H-8X1,25-TRT-400			
				translucent black	8048694	PUN-H-8X1,25-TSW-400			
				10 mm	Standard	0.046 kg/m	Blue	197386	PUN-H-10X1,5-BL
							Yellow	558302	PUN-H-10X1,5-GE
							Green	558295	PUN-H-10X1,5-GN
							nature	197379	PUN-H-10X1,5-NT
							Red	558288	PUN-H-10X1,5-RT
							Black	197393	PUN-H-10X1,5-SW
							Silver	558281	PUN-H-10X1,5-SI
							translucent blue	8048701	PUN-H-10X1,5-TBL
							translucent yel- low	8048709	PUN-H-10X1,5-TGE
	translucent green	8048707	PUN-H-10X1,5-TGN						

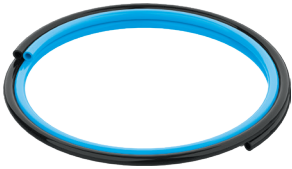
Ordering data

Ordering data PUN-H								
	Outside diameter	Packaging unit [m] ¹⁾	Product weight by length	Color	Part no.	Type		
	10 mm	Standard	0.046 kg/m	translucent red	8048705	PUN-H-10X1,5-TRT		
		25 m		translucent black	8048703	PUN-H-10X1,5-TSW		
				Blue	8204441	PUN-H-10X1,5-BL-25		
				Red	8204448	PUN-H-10X1,5-RT-25		
				Black	8204443	PUN-H-10X1,5-SW-25		
		300 m		translucent blue	8205521	PUN-H-10X1,5-TBL-25		
				Blue	558260	PUN-H-10X1,5-BL-300		
				nature	558267	PUN-H-10X1,5-NT-300		
				Black	558253	PUN-H-10X1,5-SW-300		
				Silver	558274	PUN-H-10X1,5-SI-300		
				translucent blue	8048702	PUN-H-10X1,5-TBL-300		
				translucent yel- low	8048710	PUN-H-10X1,5-TGE-300		
				translucent green	8048708	PUN-H-10X1,5-TGN-300		
				translucent red	8048706	PUN-H-10X1,5-TRT-300		
				translucent black	8048704	PUN-H-10X1,5-TSW-300		
	12 mm	Standard	0.073 kg/m	Blue	197387	PUN-H-12X2-BL		
				Yellow	558303	PUN-H-12X2-GE		
				Green	558296	PUN-H-12X2-GN		
				nature	197380	PUN-H-12X2-NT		
				Red	558289	PUN-H-12X2-RT		
				Black	197394	PUN-H-12X2-SW		
				Silver	558282	PUN-H-12X2-SI		
				translucent blue	8048711	PUN-H-12X2-TBL		
				translucent yel- low	8048719	PUN-H-12X2-TGE		
				translucent green	8048717	PUN-H-12X2-TGN		
				translucent red	8048715	PUN-H-12X2-TRT		
				translucent black	8048713	PUN-H-12X2-TSW		
		25 m		Blue	8204442	PUN-H-12X2-BL-25		
				Red	8204449	PUN-H-12X2-RT-25		
				Black	8204444	PUN-H-12X2-SW-25		
				translucent blue	8205522	PUN-H-12X2-TBL-25		
		200 m		Blue	558261	PUN-H-12X2-BL-200		
				nature	558268	PUN-H-12X2-NT-200		
				Black	558254	PUN-H-12X2-SW-200		
				Silver	558275	PUN-H-12X2-SI-200		
				translucent blue	8048712	PUN-H-12X2-TBL-200		
				translucent yel- low	8048720	PUN-H-12X2-TGE-200		
				translucent green	8048718	PUN-H-12X2-TGN-200		
				translucent red	8048716	PUN-H-12X2-TRT-200		
				translucent black	8048714	PUN-H-12X2-TSW-200		
	14 mm		Standard	0.091 kg/m	Blue	570386	PUN-H-14X2-BL	
					nature	570388	PUN-H-14X2-NT	
					Black	570387	PUN-H-14X2-SW	
					16 mm	0.123 kg/m	Blue	197388
		Yellow					558304	PUN-H-16X2,5-GE
		Green					558297	PUN-H-16X2,5-GN
	nature	197381	PUN-H-16X2,5-NT					
Red	558290	PUN-H-16X2,5-RT						
Black	197395	PUN-H-16X2,5-SW						
Silver	558283	PUN-H-16X2,5-SI						

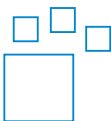
Ordering data

Ordering data PUN-H						
	Outside diameter	Packaging unit [m] ¹⁾	Product weight by length	Color	Part no.	Type
	16 mm	100 m	0.123 kg/m	Blue	558262	PUN-H-16X2,5-BL-100
				nature	558269	PUN-H-16X2,5-NT-100
				Black	558255	PUN-H-16X2,5-SW-100
				Silver	558276	PUN-H-16X2,5-SI-100

1) Standard: 50 m

Ordering data PUN-H-DUO						
	Outside diameter	Packaging unit [m] ¹⁾	Product weight by length	Color	Part no.	Type
	4 mm	Standard	0.017 kg/m	Blue/black	197396	PUN-H-4X0,75-DUO
	6 mm		0.037 kg/m		197397	PUN-H-6X1-DUO
	8 mm		0.057 kg/m		197398	PUN-H-8X1,25-DUO
	10 mm		0.093 kg/m		197399	PUN-H-10X1,5-DUO

1) Standard: 50 m

Ordering information – modular product system			
	Type code	Part no.	Type
	PUN, PUN-CM, PUN-H, PUN-V0, PUN-V0-C	553573	PUN