



## PHZ2

### HEAT SHRINKING TUBE

- PHZ2 is a flexible zero halogen thin wall polyolefin tubing with ideal printability
- Excellent properties of fire safety characteristics
- Low smoke generation and evolution of acid gases
- 2:1 shrink ratio
- Reduced overall assembly and marking costs on site when using Partex marking machines on site
- JIT ready marked customized PHZ2 tubes can also be delivered



#### GENERAL INFORMATION

##### Design

PHZ 2 is a thin wall flexible, zero halogen shrinkable tubing with excellent fire safety characteristics. This is allied to low smoke emissions and evolution of acid gases. This has been achieved without lowering mechanical and solvents resistant properties.

Primary applications include insulation and protection of cables, harnesses and electronic components used in enclosed spaces where equipment would be irreparably damaged by the corrosive products of combustion. We consider the product especially suitable for shipboard, offshore and underground railway applications. Standard packaging is continuous on reel for printing with thermal transfer printer. Minibox is a special packaging for Partex ProMark MK9 marking machine.

##### Standard colours

Black, yellow, white. Non-standard colours are available on request.

##### Temperature range

Continuous operating temperature range of  $-30^{\circ}\text{C}$  to  $+105^{\circ}\text{C}$  ( $-22^{\circ}\text{F}$  to  $+221^{\circ}\text{F}$ ).

##### Approval to standards

According to BS 6853:1999, CEN/TS 45545-2 and UNI CEI 11170-3.

Furthermore tested by the Swedish Test- and Research Institute according to SP method 2671 developed together with Partex.

##### Marking equipment

PHZ 2 is printable for on site production with Partex SP1W/SP2000, MK10 or ProMark MK9 (smaller diameter sizes) marking machines. See separate product information. For control of marking and production a PC with Partex software WinSign is used.

Can also be rapidly delivered customized marked from Partex when marking information is sent via an Excel data file or specified CAD files.

##### Ordering information

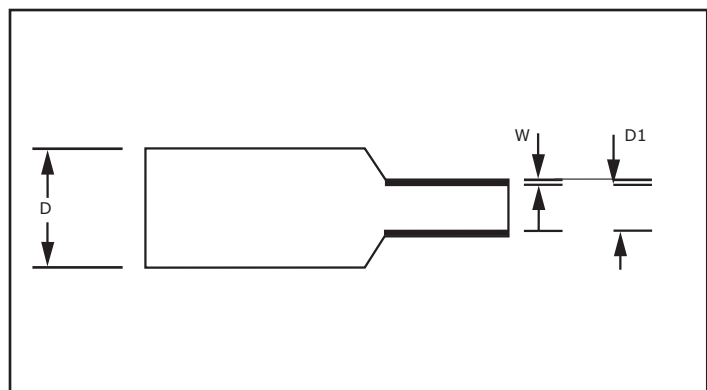
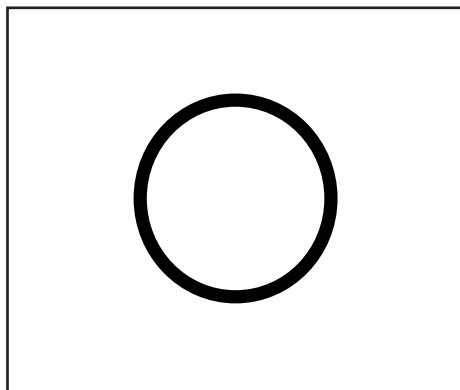
Check table for suitable size and pertaining article number.

## DIMENSIONS

Article number	Diameter mm min	Diameter inch min	Diameter max recovered mm	Diameter max recovered inch	After shrinking wall thickness		Qty per reel/ minibox m
					mm	inch	
PHZ20012BN*	1.20	.047	0.60	.024	0,41	.016	200
PHZ20016BN*	1.60	.063	0.80	.031	0.43	.017	100
PHZ20024BN*	2.40	.094	1.20	.047	0.51	.020	100
PHZ20032BN/MN*	3.20	.125	1.60	.063	0.51	.020	100 / 15
PHZ20048BN/MN*	4.80	.189	2.40	.095	0.51	.020	100 / 12
PHZ20064BN/MN*	6.40	.252	3.20	.126	0.65	.026	75 / 12
PHZ20095BN*	9.50	.374	4.70	.185	0.65	.026	75
PHZ20127BN*	12.70	.500	6.40	.251	0.65	.026	50
PHZ20190BN*	19.10	.752	9.50	.375	0.77	.030	25
PHZ20254BN*	25.40	1.000	12.70	0.500	0.89	.035	25
PHZ20381BN*	38.10	1.500	19.10	0.750	1.00	.039	25
PHZ20510BN*	50.80	2.000	25.40	1.000	1.10	.040	25

Ordering example: 2 pcs PHZ20016BN\*=2 pcs reels 150 m each. BN=reel  
 \*x=0= black, 4=yellow, 9=white.

Minibox packaging available for sizes 3,2mm, 4,8mm and 6,4mm. Then change "BN" in article number to "MN"

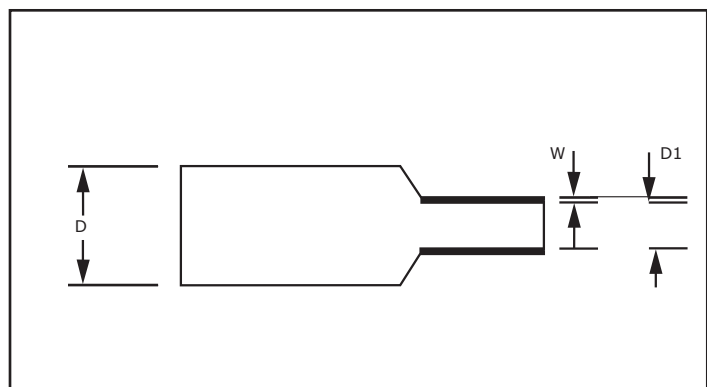
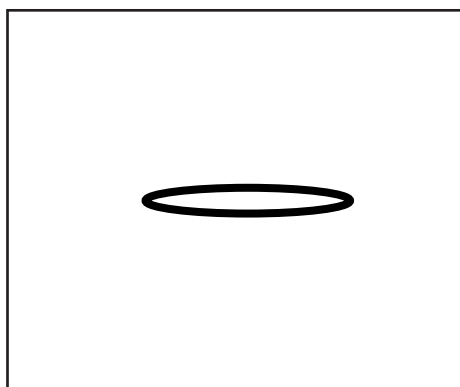


## DIMENSIONS

Flat heat shrink tubing, can be printed on in the MK10 printer

Article number	Diameter mm min	Diameter inch min	Diameter max recovered mm	Diameter max recovered inch	After shrinking wall thickness		Qty per reel/minibox m
					mm	inch	
PHZF20191BN*	19.10	.752	9.50	.375	0.77	.030	50
PHZF20254BN*	25.40	1.000	12.70	0.500	0.89	.035	50
PHZF20381BN*	38.10	1.500	19.10	0.750	1.00	.039	25
PHZF20504BN*	50.40	2.000	25.20	1.000	1.10	.040	25

\*x = colour. 4 = yellow, 9 = white



**TESTS**

Specifications	Standard colours	Non standard colours
BS 6853:1999	Black, yellow, white	On request
<b>Properties</b>	<b>Test method</b>	<b>Test requirements</b>
<b>Physical:</b>		
Tensile strength	ASTM D 638	10 N/mm <sup>2</sup>
Elongation at break	ASTM D 638	200%
Longitudinal change	ASTM D 2671	≤+5%, ≤-10%
Water absorption	ASTM D 570	≤ 0.15%
Specific gravity	ASTM D 792	1.4 g/cm <sup>3</sup>
<b>Thermal:</b>		
Continuous operating temperature		-30° C to +105°C
Minimum shrink temperature		> 90°C
Heat shock 4 hours at 175° C		No dripping, cracking or flowing
Heat aging 168 hours at 175° C	ASTM D 638	Elongation ≥100%
Low temperature flexibility -30° C	ASTM D 2671 C	No cracking
Flammability	ASTM D 635-HB	Pass
<b>Chemical:</b>		
Fungus resistance	ASTM G21	No groth
Chemical resistance	AMS-DTL-23053/5	good
Copper corrosion	ASTM D 2671 B	No corrosion
Oxygen index	EN ISO 4589-2 (1999)	36%
<b>Electrical:</b>		
Dielectric strength	ASTM D 2671	20 kV/mm <sup>2</sup>
Volume resistivity	ASTM D 257	10 <sup>14</sup> ohm cm

The heat shrinkable tubing meet the requirements of the EG directives: 2002/95/EG (RoHS), 2002/96/EG (WEEE) and 2003/11/E

**APPLICATIONS**



**SP1/SP2000**  
Marking machine for high volume on site marking production. See separate product information.



**MK9-USB**  
MK9 bench top machine for low or medium volume on site marking production. See separate product information.



**MK10**  
Printer for high volume on site marking production. See separate product information.