

## PHZ / PHZF HEAT SHRINKING TUBE

- PHZ 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



### GENERAL INFORMATION

#### Design

PHZ 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. PHZF is flat.

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 colors

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

#### Temperature range

Continuous operating temperature range of  $-55^{\circ}\text{C}$  to  $+105^{\circ}\text{C}$  ( $-67^{\circ}\text{F}$  to  $+221^{\circ}\text{F}$ ).

#### Approval to standards

According to BS 6853:1999, EN 45545-2 and UNI CEI 11170-3. Flammability resistance ASTM D 635-HB & UL 94-V0.

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

#### Marking equipment

PHZ is printable for on site production with Partex SP1W/SP2000, MK10 or T1000 (smaller diameter sizes) marking machines. See separate product information. For control of marking and production a PC with Partex software ProMark Creator is used.

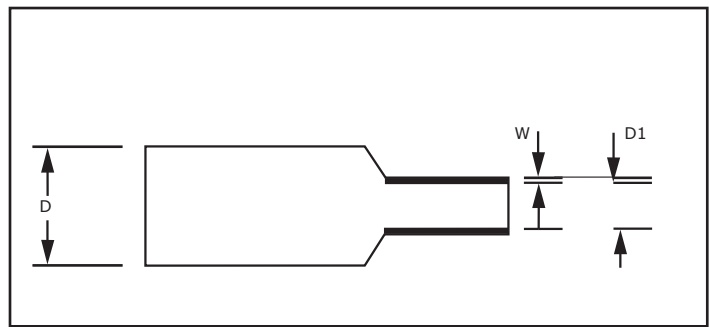
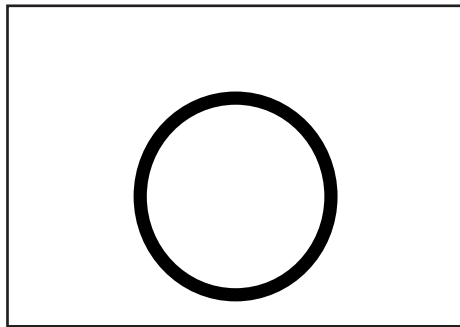
Can also be rapidly delivered customized marked from Partex when marking information is sent via an Excel data file or specified CAD files.

## PHZ DIMENSIONS

Article number	Diameter mm	Diameter max recovered mm	Recovered wall thickness mm	Qty per DN reel / BN reel m
PHZ20024BN/DN*	2.40	1.20	0.43-0.60	25 / 100
PHZ20032BN/DN*	3.20	1.60	0.55-0.72	25 / 100
PHZ20048BN/DN*	4.80	2.40	0.55-0.72	25 / 100
PHZ20064BN/DN*	6.40	3.20	0.65-0.80	25 / 75
PHZ20095BN*	9.50	4.80	0.65-0.75	75
PHZ20127BN*	12.70	6.40	0.65-0.75	50
PHZ20190BN*	19.10	9.50	0.70-0.85	25
PHZ20254BN*	25.40	12.70	0.85-1.00	25
PHZ20381BN*	38.10	19.10	0.90-1.05	25
PHZ20510BN*	50.80	25.40	0.90-1.05	25

\*=0= black, 4=yellow, 9=white.

DN-reel is available for sizes 2,4mm, 3,2mm, 4,8mm and 6,4mm. Then change "BN" in article number to "DN"

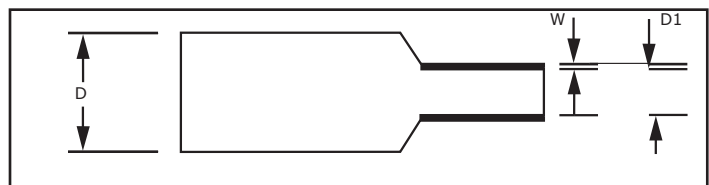
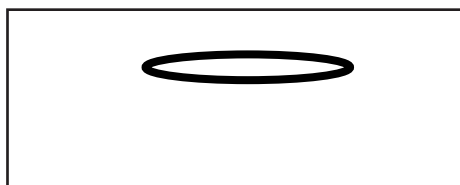


## PHZF DIMENSIONS

Flat heat shrink tubing.

Article number	Diameter mm	Diameter max recovered mm	Recovered wall thickness mm	Qty per DN / BN reel
PHZF20024DN/BN*	2.40	1.20	0.51	25 / 100
PHZF20032DN/BN*	3.20	1.60	0.63	25 / 100
PHZF20048DN/BN*	4.80	2.40	0.63	25 / 100
PHZF20064DN/BN*	6.40	3.20	0.72	25 / 100
PHZF20095BN*	9.50	4.70	0.70	100
PHZF20127BN*	12.70	6.40	0.70	100
PHZF20191BN*	19.10	9.50	0.77	50
PHZF20254BN*	25.40	12.70	0.92	50
PHZF20381BN*	38.10	19.10	0.97	25
PHZF20508BN4*	50.80	25.4	0.97	25

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



## TESTS

Specifications	Standard colors	Non standard colors
BS 6853:1999	Black, yellow, white	On request
Properties	Test method	Test requirements
Physical:		
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>
Thermal:		
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 150° C	ASTM D 638	Elongation ≥100%
Flammability	ASTM D 635-HB, UL 94-V0	Pass
Chemical:		
Chemical resistance	AMS-DTL-23053/5	good
Copper corrosion	ASTM D 2671 B	No corrosion
Oxygen index	EN ISO 4589-2 (1999)	36%
Electrical:		
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.



### T-1000

Compact, fast and portable printer 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.