

# Banding tapes

## Polyglas® P30

- ▶ Class F insulation material
- ▶ Resistant to mineral oil
- ▶ Excellent mechanical properties
- ▶ Width range from 6.5mm to 51mm
- ▶ Available in pancakes and spools

### General description

Polyglas® P30 is a B-stage banding tape made of parallel glass yarns pre-impregnated with a special thermosetting polyesterimide resin.

### Application

Polyglas® P30 tape is a basic class F (155°C) banding tape, used for banding rotors, overhangs, commutators, cores and cylinders of dry and oil filled transformers.

### Properties

Characteristics as supplied		P30	Test Norm
Thickness	mm	0.30 ± 0.03	IEC 60371-2
Total weight	g/m <sup>2</sup>	600 ± 60	IEC 60371-2
Volatile content	%	0.9 ± 0.5	ASTM D 2369-A
Resin content *	%	26 ± 2	ASTM 2408-6.2.2
Number of yarns/cm	n	30 ± 1	ASTM D 902
Minimal Tensile strength	N/cm	2000	IEC 60934-2
Pull in banding	N/cm	≤1000	
*content of 22% on request			

## Specifications

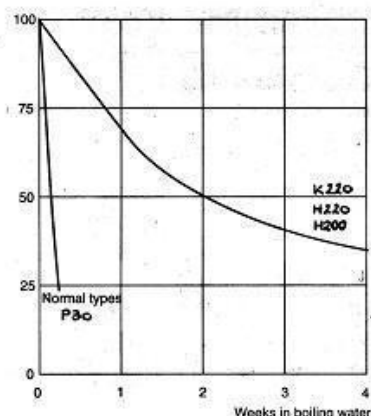
Characteristics after processing and curing		P30	Test Norm
Thermal Class	°C	155 (F)	IEC 60085
Cured Thickness	mm	0.25 ± 0.02	
Minimal Tensile Strength referred to one tape layer at 20 °C	N/cm	2500	
one tape layer at thermal class	N/cm	1800	
Modulus of Elasticity at 20 °C	N/mm <sup>2</sup>	62000	
at thermal class	N/mm <sup>2</sup>	50500	
Elongation at break at 20°C	%	1,6	
Elongation at break at thermal class	%	1,4	
Breaking load at -35 °C	N/cm	2700	
Coefficient of Linear Expansion	1/°C	6,5 E-6	
Thermal conductivity	W/(m °C)	0,53	
Radiation Index at 10 <sup>5</sup> Gy/h		> 8	IEC 544-4
Comparative Tracking Index		600	IEC 60112
Arc Resistance	s	180	ASTM D 495
Vertical Fire resistance over 12 mm		V1	UL94
Breakdown Voltage in oil at 20 °C			
natural conditions	KV/cm	28 ± 2	IEC 60243-1
after 24 h in water at 23 °C	KV/cm	8 ± 2	IEC 60243-2

### Main characteristics

The main advantages of Polyglas® P30 tapes in comparison with steel wire bandages are:

- Elimination of eddy currents reducing risk of local overheating.
- Increased mechanical performance
- Elimination of flashover between windings and steel band
- Reduction of weight
- Improved resistance to corrosion in tropical environment

### moisture resistance



## Processing

By using a suitable tensioning device the tape should be applied with the maximum suggested pull, at a temperature ranging from 80 to 100°C, and at speed of approximately 10m/min.

This procedure is strongly suggested to reach at least 60% of pull as residual tension in the cured bandage.

A proper locking of tape to secure the pull applied during bandage must be performed through an hot iron or a soldering pin for a time necessary to fix the ends.

To obtain a shiny surface after curing it is suggested a masking procedure with a shrinkable polyester film like 76850 or release shrinkable film like 76856.

These films will allow to control the resin flow during the curing , thus avoiding bubble or lump on the surface.

## Cure Time

After application, upon securing the end of tape, the resin must be cured;  
curing times depend on temperatures, as per following table.

## Cure Conditions

Temperature in °C	Hours
160	2,5
150	3
135	5
120	14
115	20

## Shelf life

If not for immediate use, tape must be stored in its original containers in a cool and dry storage area.  
Stability varies with storage temperature and moisture content.

## Storage Conditions

Storage Temperature	Shelf life		Before removing cooled material from plastics bag, let the tape reach room temperature
at 10°C	Months	24	
at 15°C	Months	18	
at 20°C	Months	12	
at 30°C	Months	8	

## Form of delivery

Polyglas® P30 is normally supplied in polyethylene bags which should not be opened until time of use.

Type A packing Flat pancakes plastic core ID 83mm

Type B packing Spools, flange OD 160mm,L200mm

Type C packing Spools, flange OD 290mm,L280mm

All widths available from 4 mm to 51mm in type A packing 100 or 200m long or in spools .

Other widths: 6-8-12.5-38-51mm, and rolls lengths less than 200m with a minimum 50m lengths are available on request.

## Packaging

Spool type and content						
Width of tape	mm	10	15	20	25	30
Type of Packing	-	B	B	C	C	C
Content	m	750	500	1800	1500	1200
Approx. Net Weight	Kg	4,2	4,2	21	22	21

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