



ERBA ISOLANTI srl

Via Liguria n. 34/31 - 20068 Peschiera Borromeo (MI)
telef. 02/5530.3089 - fax 02/5530.3127

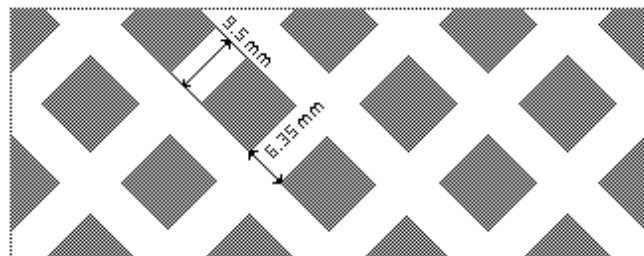
DATA: 28.May.98	Diamond Paper Pre-preg DIAMOND DOTTED PRESSPAPER P 3 0 5 5 D	Codice P3055 xxxD
Pag: 1 / 2		Scheda 02.3.3 I tecnica
		Gruppo A

APPLICATIONS

The trend towards continually greater power and voltage ratings necessary led to corresponding greater dielectric and mechanical stress in the active part of oil-filled power transformers and measuring transformers. As the solution for this problem, insulation materials with diamond-pattern resin coating were developed to cope with these forces. The partial resin coating mechanically strengthens the coil on the one hand and ensures dependable exchange between the solid and liquid medium on the other hand.

DESCRIPTION

P3055D is manufactured with transformer presspaper PSP 3055 with thickness ranging from 0,06 to 0,50 mm as base material. Using a special printing process, we coat this proven insulation material on both sides with a diamond-pattern partial epoxy resin layer.



The coating squares of P3055D have a side length of 9,5 mm and a separation of 6,35 mm. This means that approximately 36% of the total area of each side is print-coated with epoxy resin. The squares are arranged such that their diagonals lie parallel and at right angles to the machine run direction of the transformer presspaper. The thickness of the resin coating is independent of the base material thickness and has a value of 0,020 mm on each side with $\pm 0,010$ mm tolerance. A characteristic feature is that the epoxy resin is still in the reactive B-state. On raising the temperature to 110°C to 130°C, the re-meltable low molecular resin softens and becomes sticky again, so that it becomes firmly bonded to the electrical conductor. The high molecular non-melting C-state is reached after elapse of the curing time. The insulation is then in the stable duroplastic condition. A nonmelting linkage has been produced which cannot be attacked by the liquid insulation media.

ADVANTAGES

- Special insulation material for transformers with high power and voltage ratings.
- Internal strengthening of the coil.
- Axial and radial mechanical forces safely tolerated.
- Complete medium exchange.

PROCESSING

P3055D is dry and non-sticky in the state as delivered. It can be processed as layer insulation by the customary methods. When making narrow reels (on reel cutting machines), it is essential to make sure that the cut edges are in perfect condition, because edges which are not clean cut can lead to breakage in the course of the winding process.



ERBA ISOLANTI srl

Via Liguria n. 34/31 - 20068 Peschiera Borromeo (MI)
 telef. 02/5530.3089 - fax 02/5530.3127

DATA: 28.May.98	Diamond Paper Pre-preg DIAMOND DOTTED PRESSPAPER P 3 0 5 5 D	Codice P3055 xxxD
Pag: 2 / 2		Scheda 02.3.3 I tecnica
		Gruppo A

RECOMMENDED CURING CONDITIONS

Temperature *) (°C)	110	120	130
Curing Time (h)	10	5	2

*) These temperature are object temperatures and must exist in all parts of the insulation material for the specific time (which does not include the heat-up time)

TECHNICAL DATA

TECHNICAL DATA		V A L U E S									
PROPERTIES	Unit										
P3055D Types	mm	0,06	0,075	0,125	0,175	0,20	0,25	0,30	0,38	0,40	0,50
Area weight presspan + resin coating	g/m²	70	85	140	195	225	280	335	420	445	555
Thickness resin coating each side (2x)	mm	0,020 ± 0,010									
Nominal thick. presspan + resin coating	mm	0,08	0,095	0,145	0,195	0,22	0,270	0,320	0,400	0,420	0,520
Tensile strenth Longitudinal Transverse	N/mm² N/mm²	>70 >40									
Break-down voltage dry	kV	> 0,5	≥ 0,9	≥ 1,2	≥ 1,4		≥ 2,0		≥ 2,5		
Break-down voltage in oil	kV	≥ 5	≥ 7	≥ 8	≥ 11		≥ 13,5		≥ 15		
Tensile shear strength 100°C	N/mm²	≥ 1			≥ 1,2		≥ 1,6		≥ 2,0		
Electrical conductivity of aqueous extract	µS/cm	≤ 80									
Shrinkage Longitudinal Transverse	% %	≤ 1,2 ≤ 2,0									
Ash content	% on weight	≤ 1									
Moisture content	% on weight	≤ 7									
Storage Time		P3055D must be stored in dry rooms in its original packaging. The maximum permissible storage temperature is 30°C. avoid direct solar radiation and other sources of radiant heat. Furthermore, to avoid cold flow and blocking, avoid subjecting the reels to pressure , i.e. do not stack them. It is best to store master reels standing upright, and narrow reels lying without radial pressure.									

AVAILABILITY

Rolls	mm	1.000	1.600
Inside Diam.	mm	70 - 76	
Narrow reels	from mm 20	Tolerances in accordance to DIN 40600.	

This information is intended only for general guidance in the application of our products. It has been obtained by careful investigation and represents the present state of our knowledge and experience. Because of the large number of possible methods of applications and processing we are not able to assume responsibility in any one particular case for either the technical results or the patent rights situation applicable to the country under consideration.