



Trafoboard® HD-PH

- › Fasteners made from laminated pressboard with phenolic resin for oil-filled transformers



Electrical industry

Trafoboard® HD-PH fasteners

Trafoboard® HD-PH fasteners for the construction of oil-filled transformers. Made from laminated pressboard with phenolic resin. Transformer engineers thus have an alternative to the conventional fasteners made from laminated pressboard with polyester resin. The unique phenolic resin of Trafoboard® HD-PH

- offers superior electrical properties
- and **contributes to the high operational safety of oil-filled high-voltage transformers,** such as HVDC.



Properties



High strength, even at high operating temperatures

Compared to conventional fasteners made of laminated pressboard with polyester resin, Trafoboard® HD-PH also has very high mechanical strength, even at high operating temperatures of 90 °C.



Electrical stability

Trafoboard® HD-PH is characterised by the particularly high partial discharge-free dielectric strength. In cooperation with Osnabrück University of Applied Sciences, which has a modern high-voltage laboratory with a measuring accuracy < 1 pC, the extremely high dielectric strength has been verified.



Minimal shrinkage behaviour and high homogeneous strength

The low moisture content and very good drying behaviour during kerosene drying offer improved shrinkage behaviour and thus a very high homogeneous strength.



TRANSFORM network

As a member of the TRANSFORM network, the partner network of European premium suppliers for the transformer industry, we are jointly shaping the standards of the tomorrow's transformers.

Over a century of experience

Trafoboard® HD-PH fasteners are part of our comprehensive range of construction materials for transformers. We have been producing Lignostone® for more than a century. With our Lignostone® Transformerwood® we offer a proven material that has been used in transformers for over 60 years and meets the electrical and thermal requirements even after decades in service. The material enjoys an excellent reputation in the international transformer industry. With Trafoboard® HD-PH, we are also offering insulation materials made of high-quality laminated pressboard for insulating parts in oil-filled high-voltage transformers. As a result, they contribute to the development of efficient, safe transformers.



For varied requirements

As well as Trafoboard® HD-PH, we also offer: Our fasteners made of Lignostone® Transformerwood® laminated densified wood and Durostone® fibreglass-reinforced plastics, proven in transformer designs around the world. We would be happy to advise you on the selection of the right materials for your application.

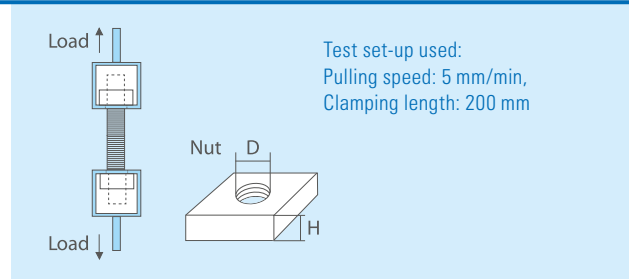
Material

Trafoboard® HD-PH consists of highly densified pressboard layers made of pure cellulose according to IEC 60641, which are bonded permanently by means of phenolic glue according to IEC 60763 type LB 3.1A.2. The material combines very good mechanical and electrical properties, and is characterised by a very low moisture content and very good drying behaviour. Röchling worked closely with Osnabrück University of Applied Sciences in its development.



Breaking load

Diameter	Tension*
M8	3000 N
M10	4000 N
M12	6000 N
M16	10000 N
M20	12000 N
M24	20000 N

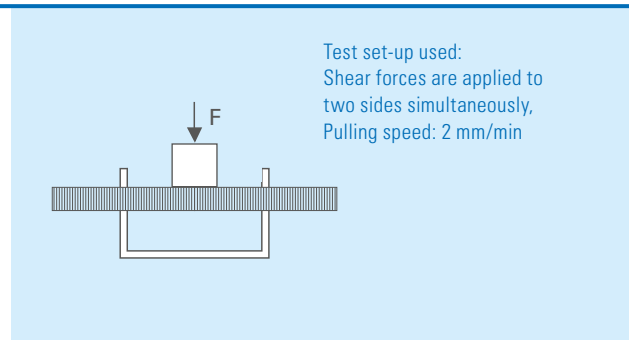


*Average value



Shear strength

Diameter	Shearing force* Simultaneous shearing on two sides
M12	12500 N
M16	20000 N
M20	30000 N
M24	50000 N



*Average value



Product portfolio

	Nominal diameter	Standard size	Standard packaging unit
Nuts	M8	Square, width 14 mm, nut height 10 mm	100 pcs
	M10	Square, width 19 mm, nut height 10 mm	100 pcs
	M12	Square, width 28 mm, nut height 15 mm	100 pcs
	M16	Square, width 34 mm, nut height 15 mm	50 pcs
	M20	Square, width 40 mm, nut height 20 mm	40 pcs
	M24	Square, width 44 mm, nut height 20 mm	30 pcs
Threaded rods	M8	Length 950 mm	50 pcs
	M10	Length 950 mm	50 pcs
	M12	Length 950 mm	50 pcs
	M16	Length 950 mm	25 pcs
	M20	Length 950 mm	20 pcs
	M24	Length 950 mm	10 pcs

Moisture-free, appropriate packaging

We deliver Trafoboard® HD-PH fasteners in moisture-free, appropriate, small packaging units. Due to the material, laminated pressboard absorbs moisture and is inclined to swell. With the special packaging, the fasteners are reliably protected against moisture and remain dimensionally stable.

Packaging instruction: Trafoboard® HD-PH threaded rods and nuts are hygroscopic. Keep dry and always protect the material from moisture with a sealed plastic film.



RÖCHLING

Röchling Engineering Plastics SE & Co. KG

Röchlingstr. 1

49733 Haren | Germany

Tel. +49 5934 701-0

Fax +49 5934 701-299

info@roechling-plastics.com

www.roechling-industrial.com/de/haren



Röchling Industrial. Empowering Industry.

www.roechling-industrial.com