

Electrical Insulation Materials

Nomex® Type 993 | FI 15030

Structure: Nomex® Type 993 | FI 15030 is a material with medium density which has a balanced combination of rigidity and compressibility. Nomex® Type 993 | FI 15030 is similar to Nomex® Type 410 FI 15000 in regard to the properties.

Characteristics: Nomex® Type 993 | FI 15030 has a balanced combination of rigidity and compressibility and can be impregnated very well. Furthermore Nomex® Type 993 | FI 15030 has a good oil absorption. Nomex® Type 993 | FI 15030 is similar to Nomex® Type 410 FI 15000 in regard to many properties and can be used with nearly all common varnishes and adhesives as well as other electrical components and transformer liquids, like for example oil.

Application: Typical applications for Nomex® Type 993 | FI 15030 are for example the usage as 3D V-Ring, angle ring or coil and gap filler.

Standard colour: Nomex® Type 993 | FI 15030 is delivered in white colour.

Delivery Forms: Nomex® Type 993 | FI 15030 is available as die-cut or formed parts, sheets, cuts, on rolls or as reel in thicknesses of 1.0 up to 4.0 mm. Further dimensions and delivery forms are available on request.

Dr. Dietrich Müller GmbH

Nomex® Type 993 | FI 15030

Property	Test method	Unit	Value		
Thickness	-	mm	1.5	3.0	4.0
Dielectric strength in oil	ASTM D149	kV/mm	34	30	27
Wave impulse	ASTM D3426	kV/mm	73	62	60
Dielectric constant at 60 Hz, 25°C	ASTM D150	-	3.2	3.5	3.6
Dielectric constant at 60 Hz, 90°C	ASTM D150	-	3.2	3.5	3.7
Dielectric constant at 60 Hz, 130°C	ASTM D150	-	3.3	3.7	3.8
Dissipation factor at 60 Hz, 25°C	ASTM D150	x10 ⁻³	5	6	7
Dissipation factor at 60 Hz, 90°C	ASTM D150	x10 ⁻³	5		
Dissipation factor at 60 Hz, 130°C	ASTM D150	x10 ⁻³	7		
Volume resistivity at 90°C	ASTM D257	Ohm-m	10 ¹⁶		
Volume resistivity at 130°C	ASTM D257	Ohm-m	10 ¹⁵		

Dr. Dietrich Müller GmbH

Nomex® Type 993 | FI 15030

Property	Test method	Unit	Value					
			1.0	1.5	2.0	2.4	3.0	4.0
Thickness	-	mm	1.0	1.5	2.0	2.4	3.0	4.0
Weight	ASTM D3392	g/m ²	720	1050	1530	1770	2270	3410
Density	-	g/cm ³	0.70	0.73	0.76	0.77	0.82	0.87
Tensile strength MD	ASTM D828	kN/cm ²	3.53	4.0	4.75	4.4	4.6	4.91
Tensile strength CD	ASTM D828	kN/cm ²	2.96	3.31	3.44	3.74	3.92	4.53
Elongation MD	ASTM D828	%	11.9	11.2	13.8	12.0	13.7	14.7
Elongation CD	ASTM D828	%	12.7	12.9	14.1	12.1	14.2	15.3
Shrinkage at 105°C MD	ASTM D3392	%	0.6	0.7	0.7	0.8	0.7	0.4
Shrinkage at 105°C CD	ASTM D3392	%	0.9	1.0	1.1	1.1	1.0	1.6
Shrinkage at 240°C MD	ASTM D3392	%	1.1	1.5	1.1	1.2	1.2	1.2
Shrinkage at 240°C CD	ASTM D3392	%	1.6	1.6	2.0	1.8	1.8	1.5

Trademark information: Nomex® is a registered trademark of the company DuPont.

Information:

All information, including illustrations, is believed to be reliable. Users, however, should independently evaluate the suitability of each product for their application. Dr. Dietrich Müller GmbH makes no warranties as to the accuracy or completeness of the information, and disclaims any liability regarding its use. Dr. Dietrich Müller GmbH only obligations are those in the Standard Terms and Conditions of Sale for this product and in no case will Dr. Dietrich Müller GmbH be liable for any incidental, indirect or consequential damages arising from the sale, resale, use, or misuse of the product. Dr. Dietrich Müller GmbH Specifications are subject to change without notice. In addition, Dr. Dietrich Müller GmbH reserves the right to make changes in materials or processing without notification to the Buyer, which do not affect compliance with any applicable specification.

Dr. Dietrich Müller GmbH