

# DUPONT™ NOMEX® LAMINATE TYPE NM

## TECHNICAL DATA SHEET

### Product description

DuPont™ NOMEX® Laminate Type NM is a duplex laminate constructed of calendered NOMEX® paper bonded to polyester film with a proprietary high temperature adhesive system. This laminate is designed not to delaminate or blister at high temperatures.

The polyester film in this two-ply laminate contributes high dielectric strength, as well as good initial tear strength and tensile properties. The calendered NOMEX® paper provides long-term thermal stability, as well as improved

propagation tear strengths. The two-ply structure allows for easy insertability of the slot liner using automatic insertion equipment.

### Application

This laminate is broadly used in the manufacture of smaller motors. The most important applications are for slot liners, wedges and phase insulation in Class F motors, as well as in specialty Class B motors. Two-ply laminates are typically limited to frame sizes with slots no longer than 7 inches in length. This is

due to limitations in avoiding curl when using automatic insertion equipment, not because of a technical limitation of the product.

There are a number of insulation systems recognized by Underwriters Laboratories (UL), which include this laminate for both Class B and Class F motors. Upon request, access to these insulation systems is available from DuPont.

### Case histories

Case histories detailing the use of Type NM laminates in motors are available upon request.

### PRODUCT DATA

Product	ASTM D374 Thickness Nominal (inches)	Product Yield (yd <sup>2</sup> /lb) (lb/yd <sup>2</sup> )		ASTM D149 Dielectric Strength (volts)	ASTM D257 Volume Resistivity (ohms-cm)	ASTM D257 Surface Resistivity (ohms/square)	ASTM D882 MD Tensile Strength (lb/in width)	ASTM D882 XD Tensile Strength (lb/in width)	ASTM D1004 MD Tear Strength (lbs)	ASTM D1004 XD Tear Strength (lbs)
NM 2-1	0.003	5.88	0.17	5,000	10 <sup>15</sup>	10 <sup>15</sup>	40	20	3	N/A
NM 2-2	0.004	4.17	0.24	8,500	10 <sup>15</sup>	10 <sup>15</sup>	60	30	5	N/A
NM 2-10	0.012	1.28	0.78	20,500	10 <sup>15</sup>	10 <sup>15</sup>	122	84	16	N/A
NM 2½-5	0.008	2.46	0.41	16,000	10 <sup>15</sup>	10 <sup>15</sup>	124	133	16	18
NM 2½-7½	0.011	1.74	0.58	18,600	10 <sup>15</sup>	10 <sup>15</sup>	172	158	25	25
NM 2½-10	0.013	1.32	0.76	21,000	10 <sup>15</sup>	10 <sup>15</sup>	222	232	36	37
NM 4-3	0.007	2.76	0.36	12,200	10 <sup>15</sup>	10 <sup>15</sup>	71	108	19	12
NM 4-7½	0.012	1.52	0.66	18,900	10 <sup>15</sup>	10 <sup>15</sup>	166	158	34	21
NM 4-10	0.014	1.22	0.82	20,000	10 <sup>15</sup>	10 <sup>15</sup>	222	212	33	55
NM 5-5	0.010	1.79	0.56	15,000	10 <sup>15</sup>	10 <sup>15</sup>	184	140	18	N/A
NM 5-7½	0.015	1.12	0.89	20,000	10 <sup>15</sup>	10 <sup>15</sup>	202	162	20	N/A

The data for these constructions only represents a small amount of material, and will likely change with more data collection.



### Specifications

The properties shown in this data sheet are typical values, and should not be used as specification limits. Contact DuPont for assistance in preparing specifications of these materials for your application.

### Shelf life

The shelf life of NOMEX® laminates is in excess of one year when they are stored at or below room temperature.

### Safety precautions

A Material Safety Data Sheet (MSDS) describing the use of this product is available upon request from DuPont.

### Availability

DuPont™ NOMEX® Laminate, Type NM is available from Von Roll Isola USA, DuPont's authorized sales agent, or from your local authorized distributor. For the name of a local fabricator or distributor, or for more information on this product, contact Von Roll Isola.

### USA

DuPont  
Advanced Fibers Systems  
5401 Jefferson Davis Highway  
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Tel: (800) 453-8527 (804) 383-4400  
Fax: (800) 787-7086 (804) 383-4132  
E-mail: afscdt@usa.dupont.com

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One West Campbell Road  
Schenectady, NY 12306  
Tel: (800) 654-7652 (press 4)  
(518) 344-7237  
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Email: dupontlaminates@vonroll-isola.com  
Website: www.vonrollisola.com



### CANADA

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**Product safety information is available upon request.**

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