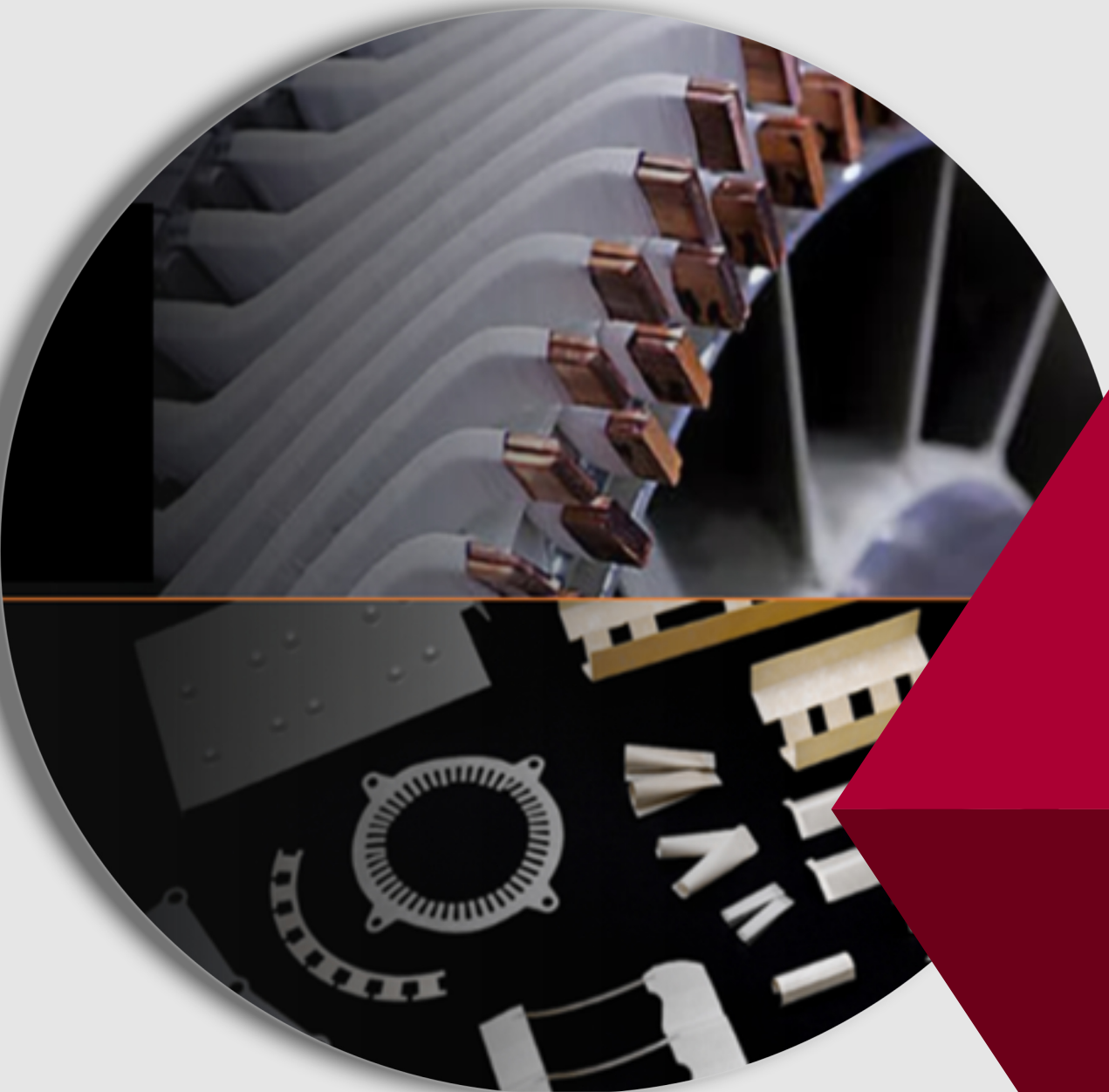




Materials for Power Devices and Electronic Components

Non-Adhesive Multi-Layered Insulation Material



NAGASE | Delivering next.

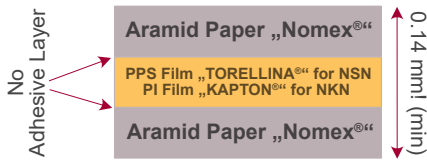
Non-Adhesive Multi-Layered Insulation Material

A Non-Adhesive Multi-Layered Insulation Material is a specialized insulating solution designed to provide thermal, electrical, and mechanical protection without the use of adhesives.

Advantages

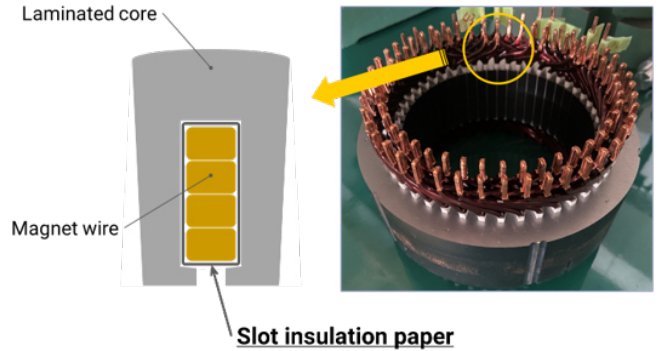
1. Ultra-Thin Design

- » Minimum thickness of just 0.14 mm
- » Contribute to optimize space factor of hairpin and coil



Application

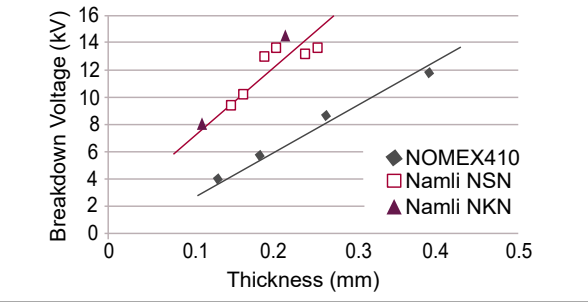
- » Motor for xEV (Slot insulation paper)



2. Superior Insulation Performance

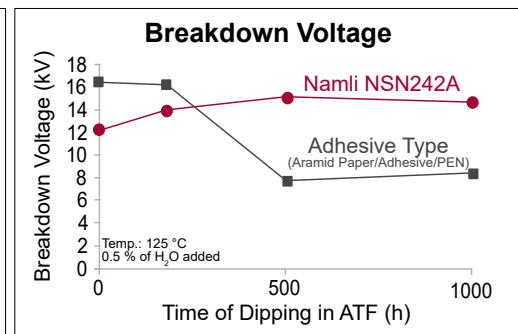
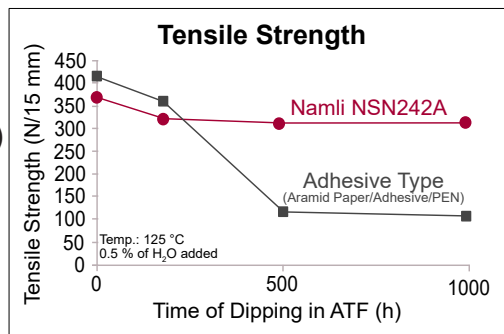
- » Tested breakdown voltage > 8 kV at 0.14 mm thickness
- » Delivers twice the insulation performance of aramid paper of the same thickness

Material Thickness and Breakdown Voltage



3. ATF Durability

- » Proven resistance under ATF conditions (125 °C for 1.000 h)
- » Maintains performance with minimal change



Product Portfolio

Properties		Unit	NSN222A	NSN232A	NSN24.52A	NSN343A	NKN333
Thickness		µm	140	165	205	240	215
Tensile Strength	MD	N/15 mm	240	300	420	420	430
	TD		160	210	300	300	350
Elongation	MD	%	31	33	43	31	25
	TD		31	32	44	26	29
Edge Tearing Resistance	MD	N/20 mm	400	460	840	890	820
	TD		250	260	620	630	700
Dielectric Breakdown Voltage (BDV)		kV	7.8	9.9	13.3	12.4	14.4
Dielectric Constant		-	2.23	2.39	2.47	2.45	No data
Partial Discharge Inception Voltage (PDIV)		V peak	1410	1610	1740	1800	1680

