

# 3M™ TufQUIN TF 3+2

## Duplex Electrical Insulating Paper

Data Sheet

November 2013

3M™ TufQuin TF Duplex Electrical Insulating Paper is TufQUIN Hybrid Insulating Paper bonded to polyester (PET) film. TufQUIN TF paper is qualified for use as major ground insulation in electrical insulation systems rated through Class 200(N) per UL 1446 and IEC Std. 61857. It is suitable for applications including slot cell, phase, and wedge insulation in motors and generators as well as ground and layer insulation in dry-type transformers. TufQUIN TF laminates are well-suited for automatic insertion applications, as well as heavy-duty winding applications. 3M UL Recognized Insulation Systems may be found under File E65007.

Properties	Units	ASTM Test Method	Typical Values
Nominal Thickness	mm mil	D-645	0.13 5
Basis Weight	g/m <sup>2</sup> lb/yd <sup>2</sup>	D-202	171 0.32
Tensile Strength, MD	lb/inch N/cm	D-828	50 88
Tensile Strength, CD	lb/inch N/cm	D-828	72 126
Elongation to Break, MD	%	D-828	23
Elongation to Break, CD	%	D-828	83
Elmendorf Tear, MD	g N	D-689	210 2.1
Elmendorf Tear, CD	g N	D-689	570 5.6
Dielectric Breakdown Voltage	kV	D-149	8
Moisture Absorption	%	D-644	<1

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