

Sheet 312

**Requirements for combined flexible triplex materials of three layers –
P-PAa/F-PET/P-PAa (50 µm aramid calendered paper
on both sides of PET film)**

1 Description

This sheet gives the requirements for triplex materials consisting of calendered aramid paper (P-PAa) having a nominal thickness of 50 µm laminated on both sides of polyethylene terephthalate film (F-PET).

2 Thermal classification

Experience has shown that the combined flexible materials listed in this sheet may be suitable for use in electrical apparatus with ratings up to and including the range of 155 °C to 180 °C.

3 Single-layer requirements

Use paper which meets the requirements of IEC 819-1 and IEC 819-3.

Use a PET film which meets the requirements of IEC 674-1 and IEC 674-3.

4 Additional requirements

Additional requirements are given in the table below.

Property	Clause in IEC 626-2	Units Tolerance	
Laminate nominal thickness	2	mm	0,14 0,15 0,17 0,19 0,22 0,24 0,31 0,37 0,47
Laminate thickness tolerance	2	± %	15 15 15 15 15 15 15 10 10
Laminate nominal grammage	3	g/m ² ±12 %	140 150 170 200 230 270 360 450 590
Film nominal thickness		µm	23 36 50 75 100 125 190 250 350
Unfolded tensile strength	4	N/10 mm min. MD CMD	100 150 160 170 190 220 270 330 400 80 90 90 105 120 150 200 300 350
Folded tensile strength	4	N/10 mm min. MD CMD	80 80 90 100 110 130 200 250 300 50 70 70 90 100 120 150 200 250
Elongation, unfolded	4	% min. MD CMD	15 15 15 15 15 20 20 20 20 20 20 20 20 20 20 25 25 25
Electric breakdown voltage, 6 mm diameter electrodes	9	kV min. Unfolded Folded	6 7 8 11 12 14 19 23 28 5 6 7 9 10 12 15 18 20
NOTES MD = machine direction CMD = cross machine direction min. = minimum			