

## CALMICAFAF<sup>®</sup> H 3411

### Description:

CALMICAFAF<sup>®</sup> H 3411 consists of reinforced mica paper based on calcined muscovite, glass cloth on both sides and high temperature-resistant thermosetting epoxy-novolac for high temperature applications up to 180 °C.

### Properties:

CALMICAFAF<sup>®</sup> H 3411 is very flexible glass mica paper combination, which can be easily wrapped in total width by hand or taped on automatic taping machines. After curing in a hot press an insulation with excellent dielectric, thermal, mechanical and chemical properties is obtained. Due to the reinforced mica and double layers of glass cloth the thermo mechanical properties are improved, delamination with risk of partial discharges and formation of hot spots can be avoided.

Due to the special glass cloth the thermal, electrical and mechanical properties of the final insulation are further increased compared to the very good properties of the standard CALMICAGLAS<sup>®</sup> tapes. Especially the tear edge strength is increased significantly whilst the improved flexibility of CALMICAFAF<sup>®</sup> H 3411 allows a faster taping with less risk of having wrinkles.

### Application:

CALMICAFAF<sup>®</sup> H 3411 is used for the insulation of bars and coils of air and indirect gas cooled machines.

The preheating cycle at minimum pressure ( $< 0,3 \text{ N/mm}^2$ ), depending upon the size of the bars or coils, is given from 20 Minutes at 135° C up to 5 Minutes at 160° C. Please note, that a fast ascent of the pressure can influence the laminating quality. Kneading is not recommended. Curing is possible up to 180° C in combination with release-film VOTAFILM 2646 or shrink-release film VOTAFILM 2645 for rounded corners.

CALMICAFAF<sup>®</sup> H 3411 is delivered interleaved.

### Corona Protection

CONTAFEL 2912 0.08 mm with glass cloth as carrier can withstand high temperatures and possible corona attack and is recommended for Class H applications.

EGSB 2969 0.15 mm is designed to be pressed together with CALMICAFAF<sup>®</sup>.

### Formats:

Rolls:	max. width 1000 mm
Tapes:	from 10 mm width upwards

**Storability:**

min. 6 months at 20°C  
min. 12 months at 5°C

**Pressing conditions (to achieve formed stability):**

e. g.: 1 hour, 160° C, 2 N/mm<sup>2</sup>  
Temperature: 130°C - 180°C  
Pressure: 2 - 3 N/mm<sup>2</sup>  
Time: 8.0 - 0.5 hours

Full curing is achieved after 4 hours at 160°C

**Technical Data (as delivered)**

Properties	Test method	Unit	Value
Nominal thickness		mm	0,18
Tolerance		mm	± 0,02
Total substance	IEC 371-2	g/m <sup>2</sup>	248 ± 23
Mica paper	IEC 371-2	g/m <sup>2</sup>	120 ± 5
Glass cloth	IEC 371-2	g/m <sup>2</sup>	2x 24 ± 3
Resin content	IEC 371-2	g/m <sup>2</sup>	80 ± 8
Tensile strength	IEC 371-2	N/10mm	≥ 150
Volatile content (15 min 150° C)	IEC 371-2	%	≤ 1