

CORE / LAMINATION BONDING EPOXY RESIN SYSTEM - BA110 / KA 412
Description

Epoxy Resin BA110 is a solvent less, unfilled, epoxy resin which in combination with Hardener KA 412 cures in to a hard mass. Hardener KA 412 is a pale yellow, clear, polyamide based liquid. The curing of the resin compounds is a reaction which occurs at room temperature.

Areas of Application

Epoxy Resin BA110 + Hardener KA 412 system is suggested for:

Binder resin for FRP lining & FRB component manufacture with excellent chemical resistant properties.

Cores / Lamination layers bonding

Properties of cured material

The system is characterized by fast curing at room temperature. The hard cure has good mechanical & electrical insulation properties. It has excellent chemical resistance properties.

The resin/hardener combination is used in electrical components of thermal class 120 (class E)

Application Method

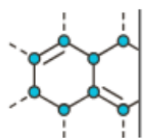
Epoxy Resin BA110 & Hardener KA 412 should be mixed well be room temperature (20 to 40°C) and used within 10 to 15 minutes, depending upon the temperature and quantity of mixture. The resin & hardener mixture is then used for intended application. Contaminated tools & containers can be cleaned with solvent based thinners, before the resin system starts hardening.

Addition of Fillers

Dried fillers such as silica, talc, dolomite, mica can be incorporated depending upon the performance requirement. Fillers shall be dried in oven at 150-200°C for 4-6 hours to remove moisture. Wherever vacuum mixing facilities are available, fillers may be added to BA110 under vacuum preferably at 50-60°C. Mold used for casting must first be treated with a mold releasing agent.

Properties of Epoxy Resin BA110 as supplied:

Colour & Appearance	ASTM – D - 1544		Colourless to pale yellow resin
Viscosity at 25°C by (Brookfield)	ASTM – D - 2196	mPa.s	10000 - 15000
Density at 25°C	-	g/ml	1.15 (typical)
Epoxy equivalent weight	ASTM – D - 1652	-	180 - 200
Storage stability	When stored in original sealed container at R.T.	months	12



Properties of Hardener KA 412 as supplied:

Chemical Base	-	-	Polyamide
Appearance	-	-	Light Yellow clear liquid
Viscosity at 25°C by (Brookfield)	-	mPa.s	10000 – 30000
Specific gravity at 20°C	-	g/ml	NT
Colour	-	GR	2 max
Amine value	-	MG/KOH	420 – 480
Storage stability [*]	When stored in original sealed container at R.T.	months	12

Mixing Proportion & Pot Life:

Mixing Ratio (Resin: Hardener.)	-	Parts by weight	100 : 60
Setting time at 25°C	-	minutes	10 - 35
Pot life at 25°C	-	minutes	15 (typical)
Temperature rise at 25°C (exothermal)	IEC 60455	°C	180

Recommended Curing Cycle:

25-30 hours at 25°C or 15-20 hours at 30°C or 12-15 hours at 40°C

The curing time is after the component or mould attains specified temperature. Time required to heat up moulds, etc. should be added in the above suggested curing time.

Cured Film Mechanical Properties:

Specimen cured for 16 h at R.T + 4h at 80°C

Flexural strength	ISO 178	MPa	85
Impact strength (Unnotched)	ISO 179	kJ/m ²	5.2
Compressive strength	ISO 604	MPa	90
Tensile strength	ISO 527	MPa	55
Hardness	ISO 868	Shore D	81- 82
Adhesive strength- TENSILE SHEAR	M.S. to M.S joint 4 sq.cm area	kg/cm ² kg/cm ²	NT NT
Heat Distortion Temperature (Martens)	DIN 53458	°C	77



Cured Film Mechanical Properties:

Specimen cured for 16 h at R.T + 4h at 80°C

Flexural strength	ISO 178	MPa	85
Impact strength (Unnotched)	ISO 179	kJ/m ²	5.2
Compressive strength	ISO 604	MPa	90
Tensile strength	ISO 527	MPa	55
Hardness	ISO 868	Shore D	81- 82
Adhesive strength- tensile shear	M.S. to M.S joint 4 sq.cm area	kg/cm ² kg/cm ²	NT NT
Heat Distortion Temperature (Martens)	DIN 53458	° C	77

Resistance against solvents & chemicals:

Solvent resistance as per IEC 60455- 2	25% H ₂ SO ₄	No Change in colour
	5% NaOH	No Change in colour

Packaging:

- Epoxy Resin BA110 : 230 / 240 kg
- Hardener EH412 : 190 kg

All recommendations for use of our products, whether given by us in writing, verbally, or to be implied from the results of tests carried out by us are based on the current state of our knowledge. Although the information contained in this sheet is accurate to the best of our knowledge, no liability can be accepted in respect of such information and no warranty or conditions are intended in respect of the product described as the conditions of application are beyond our control.