

MASTIC PRODUCTS

4351	4356
4352	4361
4355	8004

General

VRI Mastic products consist either of epoxide or silicone resins with inorganic or conductive fillers.

The grades are mainly of a stiff consistency

Mastics 4351 and 4352

The Mastic consists of uncatalysed epoxide resin with the addition of inorganic filler. Both grades require mixing with Hardener 9004 before use. Grade 4352 is less thixotropic than grade 4351. Both grades are black pigmented.

Mastic 4355

Mastic 4355 is a catalysed single pack thixotropic epoxy system, grey-brown in colour, with inorganic filler plus mica.

Mastic 4356

Mastic 4356 is supplied ready for use in a tape form. Mastic 4356 consists of epoxide resin with an inorganic filler plus mica. The Mastic is grey-brown in colour and is thixotropic in consistency.

Mastic 4361

Mastic 4361 is silicone resin based with inorganic filler. The Mastic is grey coloured and is thixotropic in consistency.

Conductive Mastic 8004

VRI manufacture a specialist range of Conductive materials in various forms. Conductive Mastic 8004 supplied in the tape form is a catalysed epoxy resin filled with conductive particles and mica. The Mastic is thixotropic and grey-black in colour.

Application and Main Characteristics

All of the VRI Mastics are used for interstice and gap filling in high voltage stator coils.

The selection of Mastic is dependant upon the service and application needs.

Mastics 4351 and 4352

The Mastics uniquely in the VRI range need to be mixed with hardener 9004 before application.

After mixing the Mastic will cure at room temperature.

Both Mastics are used for filling holes, gaps and cavities in conductor stack assemblies of high voltage coils.

Mastic 4351 is stiff in consistency and will not drain from vertical surfaces.

Mastic 4352 has a more paste like consistency. It flows on application of heat before curing and is better for filling smaller voids.

Both Mastics are suitable for continuous operations at Class F.

The Mastics are suitable for emergency on site repairs where heating may not be available.

Mastic 4355

Mastic 4355 is a single pack, inorganic compound/mica filled, catalysed, epoxide resin.

Mastic 4355 is thixotropic, and in addition to general conductor stack filling applications, it is used as a lead sealing compound on Class F Resin-Rich processed high voltage coils.

Mastic 4356

Mastic 4356 is supplied in the easy to use tape form.

The Mastic is used for Roebel transposition filling as well as general purpose filling applications in stator coil stack assemblies.

Mastic 4356 is epoxy resin based, inorganic powder plus mica filled, grey-brown coloured and is suitable for operation at Class F.

Mastic 4361

The silicone resin based Mastic 4361 is suitable for void filling and bonding applications on machines operating up to 220°C.

Conductive Mastic 8004

Supplied in tape form Mastic 8004 is easy to apply. Conductive Mastic 8004 is used for interstice, Roebel crossover and gap filling of the conductor stacks of high voltage coils where further control of the electrical field is desired. Mica is a filler component in addition to the conductive material.

Mastic 8004 is compatible with all VRI „B“ stage products for use in Resin-Rich coil processing and with epoxy resin VPI systems.

Processing

General comments :

With the exception of Mastic 4352, the Mastics are deliberately thixotropic in nature, and should be pressed into position by spatula.

In cold conditions the Mastics are easier to apply if the required quantity is gently warmed to around 50°C, not higher, immediately before use.

All of the Mastics may be heat cured and recommended schedules are listed below :

Mastic	Curing time and temperature	Additional hardener
4351/4352	1h at 80°C 15 - 24h at 20°C	100 parts compound 4 parts Hardener 9004
4355/4356/8004	1h at 150°C 2h at 140°C 3h at 130°C	
4361	2 - 4h at 200°C 4 - 8h at 180°C 12 - 24h at 150°C	

Construction and Properties :

Grade	Resin type	Hardener to be added	Filler type	Thermal class	Density g/cm ³
4351 / 4352	Epoxy	9004	Inorganic	F	1.7
4355	Epoxy	None	Inorganic + mica	F	1.4 - 1.5
4356	Epoxy	None	Inorganic + mica	F	1.5 - 1.6
4361	Silicone	None	Inorganic	C	1.7
8004	Epoxy	None	mica + carbon	F	1.5 – 1.6

Similar Products

For Non conductive Roebel coil cross over filling Samica® Epoxy 362.01 is an alternative product to 8004

In conjunction with conductive compound 8004 on the conductor stack there is a range of conductive materials to be applied on the external surface of coils to assist in the electrical stress control.

See Conductive Polyester tape 215.55 series and Conductive paint 8001 and 8002 data sheets.

There are alternative techniques for void filling of conductive stacks, not involving Mastics. Please consult our Glasoflex® and Thermopreg® data sheets.

Storage and Shelf Life All Mastics should be stored in cool, clean, dry conditions in the original packing.

Grade	Shelf life at 20°C ± 5 C	At 5°C
4351 / 4352	12 months	24 months
4355	4 months	9 months
4356	3 months	6 months
4361	24 months	> 24 months
8004	3 months	6 months

Mode of Supply :

Grade	In tins	As tape	Hardener
4351 / 4352	1, 2, 5, 10, 20 kg		250g, 500g, 1000g
4355	1, 2, 5, 10, 20, 50kg		None
4356		Thickness 2mm, 3mm Width 6mm - 30mm Length 10m - 50m Tolerance all = ± 10%	None
4361	1, 2, 5, 10, 20 kg		None
8004		Thickness 2mm, 3mm Width 6mm - 30mm Length 10m - 50m Tolerance all = ± 10%	None

Health and Safety The usual precautions when handling chemical products should be taken. Barrier creams should be applied followed by thorough hand washing after application of the Mastic.