



Notus NE11FR

Fire Retardant Intumescent Epoxy Film



DESCRIPTION

Notus NE11FR is an intumescent epoxy resin film formulated to meet the most stringent fire standards. This thin film epoxy system provides exceptional fire protection in architectural applications such as wall assemblies, roof or ceiling assemblies and individual structural members as well as being suitable for any other components with a fire retardant requirement. Notus recommends the use of NE11FR films with the **EPFR 609** prepreg system as this combination has successfully passed both the ASTM E84 and NFPA 285 tests.

NE11FR film can be used directly against an appropriately release treated mould surface with prepreg layers laid up behind it, or as a last layer in the mould. It is cured under vacuum (at temperatures of 80-120°C) with the prepreg laminate in a single step, removing the need for secondary process steps and FR coatings.

In a fire situation, the NE11FR film reacts to form a stable, insulating char of 5-25mm thickness which protects the laminate substrate from ignition and reduces the generation of any toxic gasses.

FEATURES AND BENEFITS

- Passes NFPA 285 and Class A at ASTM E84 (with EPFR-609 prepreg)
- Stable insulating char provides fire barrier to laminate substrate
- Flexible Curing temperature (80 to 120°C)
- Low pressure moulding capability (0.85 to 3.5 Bar)
- Long out life and shelf life (60 days at 21°C and 18 months at -18°C)
- Cured finish is smooth and easy to paint for architectural components
- Easy to handle and lay up in the mould

APPLICATIONS

NE11FR intumescent epoxy resin film is typically used for architectural composites, mass transit, industrial, aerospace and marine applications.

CURE SCHEDULE

NE11FR film is typically co-cured with a prepreg system such as EPFR-609

Minimum cure requirements

Property	Result	Test Method
Minimum cure temperature (°C)	90	DSC
Cure time (hours:mins) at min temperature	6:00	DSC
Glass transition temp, T _g (°C)	98	DSC



REACTION TO FIRE TESTING

NFPA 285 – NE11FR film¹ with EPFR-609 prepreg (E-glass triax 750gm, 50%RC)

Satisfies all horizontal and vertical flame spread criteria and thermocouple temperature limits - **Pass**

ASTM E84 - NE11FR film¹ with EPFR-609 prepreg (E-glass triax 750gm, 50%RC)

ASTM E84 test result class	Class A
Flame spread index	5
Smoke developed index	200

¹ NE11FR was formerly known as FR Film 609.

TRANSPORTATION, HANDLING AND STORAGE

NE11FR films should be kept in the original packaging during transport and storage. Transport should be at -18°C to maximise the life of the product. NE11FR films should be stored, wrapped and sealed in polythene, at -18°C for maximum shelf life.

Temperature	Time
-18°C	18 months
21°C	60 days

The material must be fully thawed before breaking the polythene seal to avoid moisture contamination.

Handling of the prepreg should be at a clean area where relative humidity is ≤ 55% and ambient temperature is 20-23°C.

Only take out the quantity required for immediate production usage, the remaining material should be wrapped up and sealed and returned to the freezer. This will extend the shelf life of the NE11FR film.

The backing film should be removed from the NE11FR film only when it is ready to be laminated or positioned in the mould. Remove the backing film from the side which is going to touch the mould surface. Remove the remaining backing film only when the prepreg layer is ready to be placed

HEALTH AND SAFETY PRECAUTIONS

NE11FR film contains an epoxy resin that can cause an allergic reaction on prolonged or repeated skin contact. Gloves and protective clothing must be worn when handling this product. Hands and contaminated skin must be cleaned properly with soap and warm water after finishing work.

To avoid eye contamination, safety glasses should be worn. In the case of any contamination, eyes must be flushed for 15 minutes with clean water and a doctor should be consulted or further medical advice should be sought. Use mechanical exhaust ventilation when heat curing the NE11FR product.



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