



AMSPAND ES72A-2

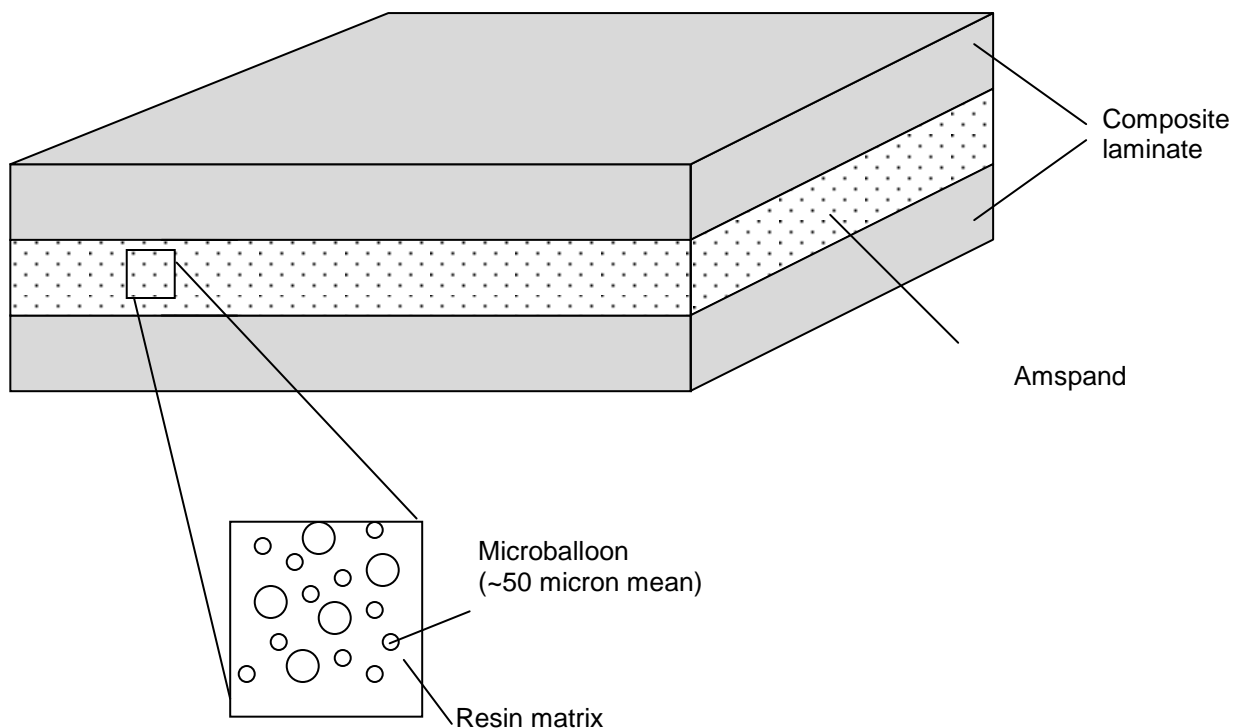
EXPANDING SYNTACTIC CORE

AMSPAND is a 125°C (257°F) curing expanding unsupported epoxy resin film incorporating low density expanding microballons, and is supplied in sheets (625mm x 400mm).

As a core material in sandwich structures, AMSPAND offers many solutions and advantages for the composite designer; typical applications include honeycomb edge filling and splicing, honeycomb core stabilization and use as a filling core in closed mold operations.

AMSPAND expands using a closed cell process ensuring complete homogeneous cell structure, the density/strength may be altered simply by changing cure pressure or limiting the volume available for expansion, the material is capable of expanding up to 650%.

AMSPAND is available in a variety of thicknesses down to 1mm and can be easily contoured and shaped. AMSPAND offers reduced processing, a one shot cure, the ability to anchor inserts or fastenings and increases the opportunity to consider light weight, thin walled composite structures.





AMSPAND ES72A-2

EXPANDING SYNTACTIC CORE

FEATURES:

- > Capable of expanding up to 650%**
- > Forms a closed cell structure
- > Capable of generating internal pressure during cure
- > Compatible for co-cure with Amber Composites' E720 & E722 Prepreg
- > Density/Strength may be tailored by simply changing cure pressure or limiting volume available for expansion
- > Minimum of 1 month working life at ambient temperature

**Variations in heat-up rate, cure temperature, pressure and thickness are all factors which influence the expansion (eg at 1mm thickness an expansion of 250% can be achieved, increasing the thickness will increase the expansion).

PROPERTIES

Typical Uncured

Thickness:	1, 1.5 and 2mm \pm 10% as standard.
Colour:	Charcoal Grey
Tack:	Medium.
Flexibility:	Pliable at room temperature.
Surface weight:	900g/m ² nom. for 1mm thickness 1350g/m ² nom for 1.5mm thickness 1800g/m ² nom. for 2mm thickness
Density:	0.90g/cm ³ nominal

Typical Cured

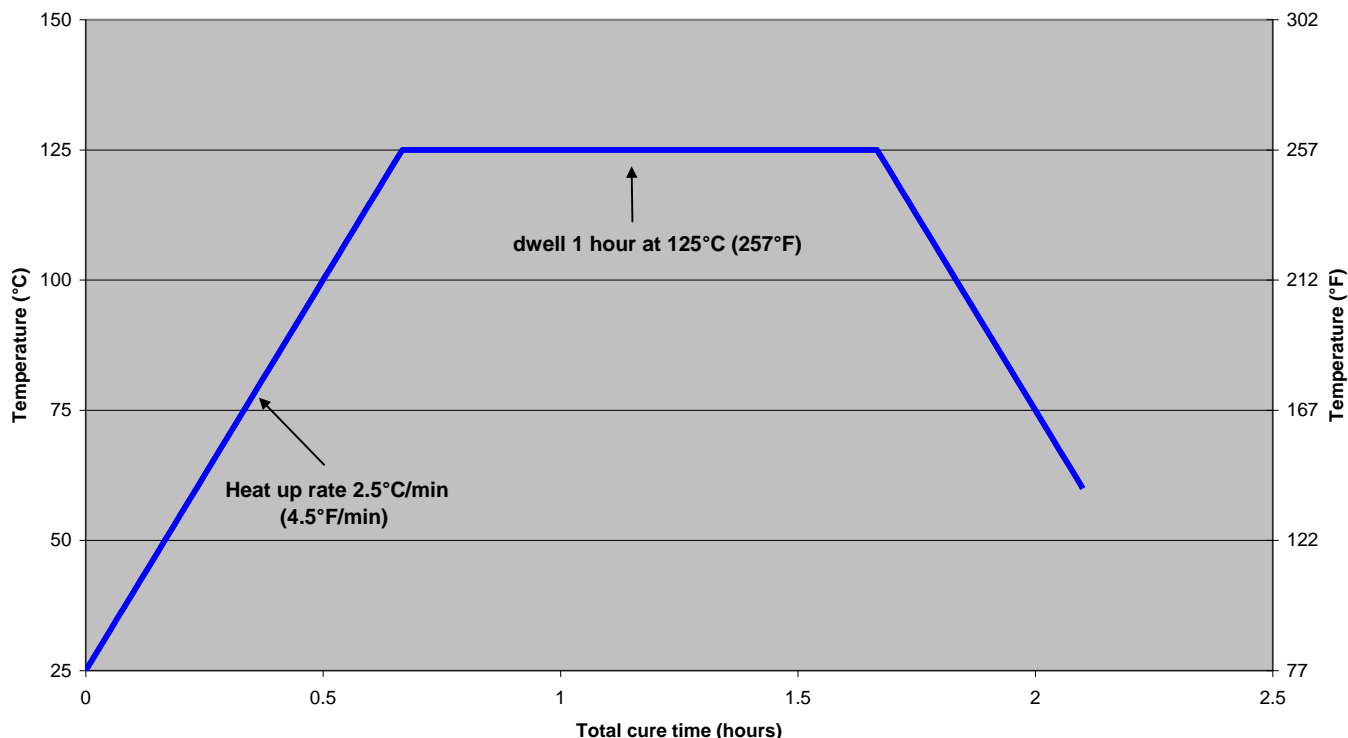
Density:	Fully expanded 0.10 to 0.40g/cm ³ (variations in heat-up rate, cure temperature, pressure and expansion are all factors which influence the amount of expansion).
Tg:	114°C (237°F) by DSC.



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CURING CYCLES

Initial Minimum Cure Schedules - ES72A



Increase air temperature at 2.5°C (4.5°F) /min to 125°C (257°F) and hold for 1 hour. Allow to cool to 60°C (140°F) prior to releasing vacuum and removal from mould.

CAUTION / HANDLING SAFETY

Amspand syntactic core contains a reactive resin system and care must be taken to avoid exothermic heating during the cure.

This product may cause skin irritation. Avoid skin contact.

If contact occurs, wash with soap and water at first opportunity. For further information refer to Material Safety Data Sheet.



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STORAGE

Amspand can be stored up to 12 months at -18°C (0°F) when stored in sealed polythene bags. Amspand has a working life of at least 1 month at room temperature.

Remove from cold storage and allow to reach room temperature before removing from polythene bag. Trim to required shape, and remove release paper from one side.

Place in position and remove remaining release paper.

This is not a specification. The information given in this data sheet in relation to the performance, storage and other characteristics of the product is based on results gained from experience and tests and is believed to be accurate. Given, however, that conditions of use and storage will vary, Amber Composites will not be liable for any loss or damage resulting from reliance upon such information. The purchaser is recommended to carry out his own tests to establish the suitability of the product for its particular purpose. The use of the product in certain processes may require third party consent.