

# PRO-SET®

## Technical Data

# M1052

# LAM-237

## BIO BASED

## LAMINATING EPOXY

### COMBINED FEATURES

**Low viscosity** for quick wet out of synthetic composite fabrics; especially effective with Kevlar® and carbon fibre.

**Extra slow cure speed** hardener provides 7 to 8 hours of working time at 25°C. A typical laminate will be gelled in 12 to 14 hours.

**Optimized** for hand wet out and machine impregnation in contact moulding, vacuum bagging and Light RTM applications.

**Room temperature cure** properties suitable for many composite components and structures.

**Tg as high as 88°C** with proper post cure providing excellent temperature stability and great part cosmetics.

**Cost effective, high performance** epoxy formulation for synthetic composite manufacturing.

**The bio based content** of PRO-SET M1052 resin is 34% as measured according to the ASTM D6866-18 test method.

### HANDLING PROPERTIES

Property	Standard	Units	21°C	25°C	29°C
150g Pot Life	ASTM D2471	minutes	246	163	125
500g Pot Life	ASTM D2471	minutes	171	102	94
Viscosity Mixed	ASTM D2196	mPas	508	449	399
Viscosity (resin)	ASTM D2196	mPas	1420		
Viscosity (hardener)	ASTM D2196	mPas	27		

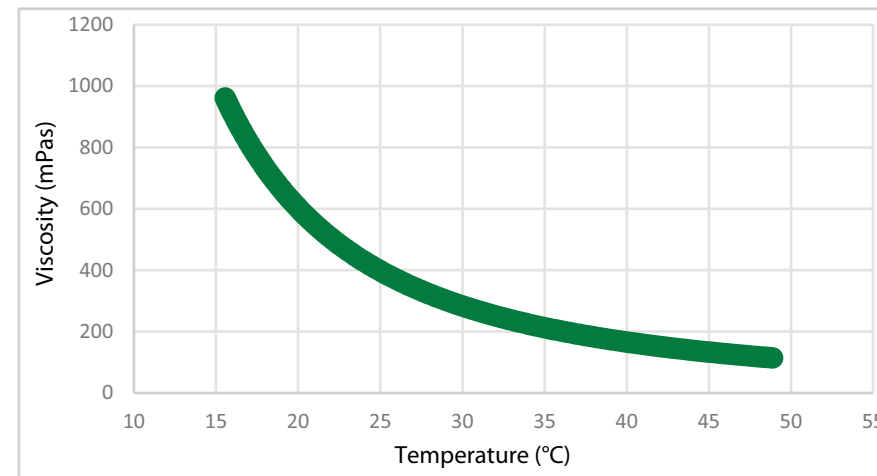
### MIX RATIO

Method	Resin:Hardener	Resin:Hardener
Weight	3.5:1	100:28.6
Volume	3.00:1	100:33.3

### DENSITY

State	Units	21°C
Cured	gcm <sup>-3</sup>	1.16
Resin	gcm <sup>-3</sup>	1.15
Hardener	gcm <sup>-3</sup>	0.97

### VISCOSITY VS TEMPERATURE



Test specimens were neat epoxy (without fibre reinforcement).  
Typical values not to be construed as specification.

The New  
Standard

EPOXIES for  
Laminating  
Infusion  
Tooling  
Assembly

#### Wessex Resins & Adhesives

Cupernham House  
Cupernham Lane  
Romsey, Hampshire  
SO51 7LF, UK  
pro-set.co.uk  
+44(0)1794 521111

ISO9001:2015 Certified

REV 1 / Apr 2020

©2020 Wessex Resins  
& Adhesives

# M1052 / LAM-237

## BIO BASED LAMINATING EPOXY

### MECHANICAL PROPERTIES

Property	Standard	Units	22°C x 4 Weeks	25°C x 2 Weeks	RT Gelation + 49°C x 8 hrs	RT Gelation + 60°C x 8 hrs	RT Gelation + 82°C x 8 hrs
Hardness	ASTM D2240	Shore D	86	86	85	86	87
Compression Yield	ASTM D695	MPa	110	110	93	93	93
Tensile Strength	ASTM D638	MPa	65	60	67	67	67
Tensile Modulus	ASTM D638	GPa	3.68	3.52	3.47	3.23	2.95
Tensile Elongation	ASTM D638	%	2.2	2.2	3.8	4.2	5.6
Flexural Strength	ASTM D790	MPa	97	93	121	121	125
Flexural Modulus	ASTM D790	GPa	3.68	3.72	3.46	3.45	3.32

### THERMAL PROPERTIES

Property	Standard	Units	22°C x 4 Weeks	25°C x 2 Weeks	RT Gelation + 49°C x 8 hrs	RT Gelation + 60°C x 8 hrs	RT Gelation + 82°C x 8 hrs	
Tg DMA Peak Tan Delta	ASTM E1640*1	°C	69	69	83	90	91	
Tg DMA Onset Storage Modulus	ASTM E1640*1	°C	62	62	70	77	88	
Tg DSC Onset - 1st Heat	ASTM E1356	°C	56	54	60	69	78	
Heat Deflection Temperature	ASTM D648	°C	54	53	62	67	78	
Tg DSC Ultimate	ASTM E1356	°C	89*2					

\*1 1Hz, 3°C per minute.

\*2 Additional post cure may be required; contact Technical Department for details.

Test specimens were neat epoxy (without fibre reinforcement).

These are typical properties and cannot be construed as a specification. The end users should test the products to ensure the products are suitable for the intended application. Any information, data, advice or recommendation published by Wessex Resins or obtained from Wessex Resins by other means and whether relating to Wessex Resins' materials or other materials, is given in good faith and believed to be reliable.

REV 1 / Apr 2020