

# PRO-SET®

## Technical Data

# M1051

# ADV-275

## BIO BASED

## ADHESIVE EPOXY

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

### COMBINED FEATURES

**Shear thinning** resins and hardeners are thixotropic gels. The mixture fills gaps and will not sag on vertical surfaces. The material wets out the substrate, making priming or pre-wetting unnecessary on most surfaces, while ensuring a good bond.

**Medium cure speed** hardener provides approximately 75 minutes of working time at 22°C. A bead will gel in 8 to 9 hours.

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

**High performance** pre-thickened, two-part epoxy adhesives for secondary bonding of laminated composites, steel, aluminium, cast iron, concrete, stone, and most wood species. PRO-SET Adhesives will bond these materials to one another in any combination.

**Coverage** one cartridge set dispenses approximately 14m of 6mm bead, or 5m of 12.7mm bead and will cover approximately 0.65m<sup>2</sup> when spread with a 3mm x 3mm notched spreader, or 1m<sup>2</sup> with a 1.5mm x 1.5mm notched spreader.

**The bio based content** of PRO-SET M1051 resin is 32% as measured according to the ASTM D6866-18 test method.

### HANDLING PROPERTIES

Property	Standard	Units	22°C
100g Pot Life	ASTM D2471	minutes	34
Working Time (12.7mm bead)	ASTM D2471	minutes	75
Minimum Cure Temperature	ASTM D2196	°C	15
Clamps off cure time (1.5mm bond line)		hours	8
Minimum Storage Temperature		°C	15

### MIX RATIO

Method	Resin:Hardener	Resin:Hardener
Weight	2.20:1	100:45.5
Volume	2.00:1	100:50.0

### DENSITY

State	Units	22°C
Resin	gcm <sup>-3</sup>	1.17
Hardener	gcm <sup>-3</sup>	1.05
Mixed	gcm <sup>-3</sup>	1.05

### MECHANICAL PROPERTIES

Property	Standard	Units	22°C x 2 Weeks
Hardness	ASTM D2240	Shore D	80 (after 1 day)
Hardness	ASTM D2240	Shore D	85
Compression Yield	ASTM D695	MPa	86.70
Tensile Strength	ASTM D638	MPa	54.60
Tensile Modulus	ASTM D638	GPa	3.58
Tensile Elongation	ASTM D638	%	3.5
Flexural Strength	ASTM D790	MPa	98.10
Flexural Modulus	ASTM D790	GPa	3.86
Lap Shear on 1018 Steel	ASTM D1002	MPa	13.70
Lap Shear on 2024T Aluminium	ASTM D1002	MPa	9.10
Tensile Adhesion to 1018 Steel	ASTM D4541	MPa	19.40
Tensile Adhesion to 2024T Aluminium	ASTM D4541	MPa	9.90
Izod Impact, notched	ASTM-256	J/m	60.38

### THERMAL PROPERTIES

Property	Standard	Units	22°C x 2 Weeks
Tg DMA Peak Tan Delta	ASTM E1640*1	°C	65.5
Tg DSC Onset - 1st Heat	ASTM E1356	°C	51.3
Tg DSC Ultimate	ASTM E1356	°C	82.2*2
Heat Deflection Temperature	ASTM D648	°C	49

\*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.