PRO-SET®

Technical Data

ADV-170

GENERAL PURPOSE 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

ISO9001:2008 Certified

REV 1 / Nov 2014

COMBINED FEATURES

Slow cure speed provides approximately 120 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 two-part, thixotropic epoxy adhesive which is extremely versatile and has been developed for general purpose use to bond Wood, GRP Aluminium, Cast Iron, Glass, Concrete, Stone, Steel, Copper, Phenolic, Unglazed Ceramic and China. PRO-SET ADV-170 epoxy adhesive will bond these materials to each other in any combination. PRO-SET ADV-170 epoxy adhesive is also used extensively in the electrical industry, civil engineering and the potteries.

Coverage a 1kg mix of PRO-SET ADV-170 epoxy adhesive will cover 1m² to give a glue line thickness of 0.8mm. To ensure a good bond between substrates, the thickness of glue line should not be less than 0.4mm.

HANDLING PROPERTIES

Property	Standard	Units	ADV-170R/ADV-170H 22°C
100g Pot Life	ASTM D2471	minutes	90
Working Time (12.7mm bead)	ASTM D2471	minutes	120
Minimum Cure Temperature	ASTM D2196	°C	5
Clamps off cure time (1.5mm bond line)		hours	8
Minimum Storage Temperature		°C	10

Property	Units	Temperature of material and workshop				
		5°C	15°C	20°C	25°C	30°C
Usable life of 1kg mix	hours	5	2.5	1.5	1	0.5
Thin film gel time (approx)	hours	20	10	5	3.5	2
Full cure to ultimate strength	days	14	7	7	5	3

MIX RATIO

Method	Resin:Hardener	Resin:Hardener
Weight	1:1	100:100
Volume	1:1	100:100

DENSITY

State	Units	21°C
Cured	gcm^{-3}	1.20
Resin	gcm^{-3}	1.00
Hardener	gcm^{-3}	1.02

ADV-170

GENERAL PURPOSE ADHESIVE EPOXY

MECHANICAL PROPERTIES

Property	Standard	Units	22°C x 2 Weeks
Hardness	ASTM D2240	Shore D	75 (after 1 day)
Hardness	ASTM D2240	Shore D	81 (after 7 days)
Hardness	ASTM D2240	Shore D	81
Compression Yield	ASTM D695	MPa	56.7
Tensile Strength	ASTM D638	MPa	32.7
Tensile Modulus	ASTM D638	GPa	2.58
Tensile Elongation	ASTM D638	%	3.3
Flexural Strength	ASTM D790	MPa	60.8
Flexural Modulus	ASTM D790	GPa	2.08

SHEAR STRENGTH PROPERTIES

Property	Test Method	Units	22°C x 1 Weeks Typical Result
Lap Shear on Aluminium	640mm² overlap, Room Temperature Cure	MPa	7.13
Lap Shear on Mild Steel	640mm² overlap, Room Temperature Cure	MPa	10.75
Lap Shear on GRP (Polyester)	640mm² overlap, Room Temperature Cure	MPa	7.34
Lap Shear on GRP (Epoxy)	640mm² overlap, Room Temperature Cure	MPa	10.68
Lap Shear on Wood (Beech)	BS 1204 test pieces, Room Temperature Cure	MPa	6.78
Lap Shear on Wood (Teak)	BS 1204 test pieces, Room Temperature Cure	MPa	6.3
Lap Shear on Glass	6.3mm plate glass, 484mm² overlap, Room Temperature Cure	MPa	4.5 (glass failure)
Lap Shear on Glass	As above but boiled for 72 hr	MPa	4.5 (glass failure)

THERMAL PROPERTIES

Property	Standard	Units	22°C x 2 Weeks
Tg DMA Peak Tan Delta	ASTM E1640*[1]	°C	63.2
Tg DSC Onset - 1st Heat	ASTM E1356	°C	41.5
Tg DSC Ultimate	ASTM E1356	°C	72.9*[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.