

# ADHESIVES

TOUGHENED EPOXY ADHESIVE

# techniglue R5

TECHNIGLUE R5 is a low viscosity, solvent free, toughened epoxy resin specifically formulated for use with H5 hardener to cure at room temperature and produce a high strength bond, with exceptional peel properties.

Ordinary epoxies have a low toughness and this deficiency has limited the use of epoxies in the area of structural metal bonding (both steel and aluminium) due to the peeling failure at the metal-resin interface.

R5 epoxy offers up to a massive 30-fold increase in peel strength, with negligible reduction in the shear and tensile adhesive strengths, by curing with the formation of minute rubbery particles in a second, separate phase. It should be used in the most critical bonding applications, such as aluminium yacht hull to deck joins.

R5 has also found use in high performance Kevlar®, graphite and glass composites because of its resistance to the micro-cracking which can otherwise occur when a high tensile fibre applies stress to the resin immediately adjacent to the fibre. Reduction of this micro-cracking results in a greatly improved resistance to fatigue. Impact resistance of FRP structures can also be improved significantly.

Typical applications include bonding aluminium sail track to carbon masts, bonding pre-fabricated composite goosenecks or spreader roots to carbon masts, and bonding pre-fabricated components into pre-preg structures.

### MIX RATIO

26 parts hardener to 100 parts resin by weight.  
30 parts hardener to 100 parts resin by volume.

UNCURED PROPERTIES			CURED PROPERTIES		
	R5	H5			
Physical State	Light Yellow Viscous Liquid	Clear Liquid	Pot Life	@ 25°C - 100g (in Air)	56 Minutes
Viscosity mPas @ 25°C	32,000	22.5	Cured to a Solid State	@ 25°C	12 - 15 Hours
Specific Gravity g/ml@ 25°C	1.14	1.00	Mix viscosity mPas	@ 25°C	2,050
<p><b>Note:</b> Maximum bondline up to 0.5 mm. Care should be taken when dispensing and mixing. Do not attempt to control the cure time by altering the hardener ratio. Contact ATL Composites for specific information</p>			Shore D Hardness	@ 1 day	70
				@ 2 weeks	72
				+ 8 hours @ 40°C	85
				+ 8 hours @ 60°C	87
				+ 4 hours @ 100°C	87
			HDT	After 24 hours @	38°C
				2 weeks @ 25°C	43°C
				+ 16 hours @ 50°C	55°C
				+ 8 hours @ 80°C	55°C

The post-cure will be effective in achieving a fast cure, but longer cure times at more moderate temperatures are recommended. Low cure temperatures are especially important when materials with different coefficient of linear expansion are being bonded.

### APPLICATION

All surfaces should be clean and free from grease and/or loose particles. For best results, and high strength bonds to occur, the adhesive must be capable of wetting both surfaces, this is best achieved by a uniformly, finely roughened (matt) finish.

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PACK SIZES				
Order Code		Order Code		PACK
RESIN		HARDENER		
RA5	500 gm	HA5	125 gm	625 gm
RB5	4 kg	HB5	1 Kg	5 Kg

## STORAGE

TECHNIGLUE R5 resin and H5 hardener will keep for 2 years if kept in original containers at room temperature (15oC to 32oC) and out of direct sunlight. Containers should be tightly sealed to prevent moisture absorption.

## HEALTH AND SAFETY

TECHNIGLUE R5 resin and H5 hardener have moderate sensitising potential, and should be kept out of the eyes and off the skin.

- Use with good ventilation and adequate safety equipment including impervious gloves and safety glasses.
- If skin contact occurs, remove contaminated clothing immediately, and wash the affected area thoroughly with water, avoiding the use of solvents except in the case of massive contamination.
- If eye contact occurs, immediately flush with running water for at least 15 (fifteen) minutes and seek medical advice.
- If swallowed:

**Resins** - DO NOT induce vomiting, and contact a doctor or the Poisons Information Centre.

**Hardeners** - DO NOT induce vomiting, give plenty of milk or water and contact a doctor or the Poisons Information Centre.

*NOTE: Our products are intended for sale to industrial and commercial customers. We request that customers inspect and test our products before use and satisfy themselves as to contents and suitability. Nothing herein shall constitute a warranty, express or implied, including any warranty or merchantability or fitness, nor is protection from law or patent to be inferred. All patent rights are reserved. The exclusive remedy for all proven claims is replacement of our materials and in no event shall we be liable for special or consequential damages.*