



TECHNICAL DATA BULLETIN

INSTAbond® NUWE-89 *Structural Adhesive for Underwater Application*

PRODUCT DESCRIPTION:

INSTAbond® NUWE-89 is one of several two-part, simple mix ratio, structural Epoxy systems developed by ACCRAbond Inc. that are designed for underwater application in addition to very humid as well as dry ambient conditions. INSTAbond® NUWE-89 cures at temperatures as low as 5°C. Typical bonding applications include, and are not limited to, chemical process equipment and the marine transportation industry. INSTAbond® NUWE-89 contains proprietary Nanotechnology that improves toughness beyond traditional formulating methodology. INSTAbond® NUWE-89 exhibits excellent adhesion to both ferrous and non-ferrous metal substrates, many plastics, including FRP and GRP composites.

INSTRUCTIONS FOR USE:

INSTAbond® NUWE-89 has a mix ratio of 2:1 by weight and volume. Please combine the proper proportions of resin and hardener in a clean container to avoid contamination that may affect the cured material's performance. Mix both components thoroughly until a uniform blue-green color is achieved. The pot life and cure of the mixture will vary with temperature and the quantity of reacting mixture. Consult MSDS for proper PPE and engineering controls to ensure safe handling. Apply the mixture to the substrates to be bonded and join them together as soon as possible within the pot life of the material.

Properties of Materials As Supplied:

(All tests are conducted at 25°±/ - 2°C, unless otherwise indicated.)

Part A Resin:

Property	Test Method	Unit	Value
Chemical Type	---	---	Epoxy
Appearance	Visual	---	White Paste
Density	ASTM D792	g /cc (lb/gal)	1.56 (13.0)
Brookfield Viscosity	ASTM D2393	cP	300,000 – 400,000

Part B Hardener:

Property	Test Method	Unit	Value
Chemical Type	---	---	Amine
Appearance	Visual	---	Blue-Green Paste
Density	ASTM D792	g /cc (lb/gal)	1.55 (12.96)
Brookfield Viscosity	ASTM D2393	cP	90,000 – 110,000



Properties of Mixed Material:

Property	Test Method	Unit	Value
Chemical Type	---	---	Epoxy System
Appearance	Visual	---	Aqua Blue-Green Paste
Density	ASTM D792	g /cc (lb/gal)	1.55 (13.0)
Brookfield Viscosity	ASTM D2393	cP	85,000 – 95,000
Mix Ratio	---	---	2:1 by Weight & Volume
Pot Life (100g mass @25°C)	---	minutes	1 – 2 hr

Typical Cure Schedules:

Cure Temperature, °C(°F)
 25(77)

Cure Time (hr)
 24

Properties of Cured Material:

Property	Test Method	Unit	Substrate	Substrate Prep Condition(a)	Cure Cycle	Test Temperature (°C)	Value(b)
Lap Shear Strength	ASTM D-1002	psi	Cold Rolled Steel 18Ga	1	24hr@20°C	23	2000
			CRS 18Ga	2	24hr@20°C	23	1750
			FRP Epoxy Phenolic NAT FR-4	1	24hr@20°C	23	2150
			FRP Epoxy Phenolic NAT FR-4	2	24hr@20°C	23	1625
			2024T3 Alclad Aluminum	ASTM 2651-90 (FPL etch)	24hr@25°C	23	2600
					7d@25°C	23	2600
Glass Transition(Tg)	TMA 10°C/min	°C	N/A	N/A	24hr@25°C	25°C - 200°C	56.3
			N/A	N/A	24hr@25°C +1hr@66°C	25°C - 200°C	60.3
			N/A	N/A	24hr@25°C +3hr@138°C	25°C - 200°C	82.2
Tensile Strength	ASTM D-638	psi	N/A	N/A	24hr@25°C	23	TBD
Pct Elongation		%	N/A	N/A			TBD
Compressive Yield Strength	D-695	psi	N/A	N/A	24hr@25°C	23	TBD
Hardness	Shore D	Scale	N/A	N/A	24hr@25°C	23	80



8848 Hacks Cross Rd
Olive Branch, MS 38654
Fax (662) 895-4439
www.accrabond.com
Phone (662) 895-4480

(a) Condition (1) =: dry wipe only, bonded and cured underwater; Condition (2) = Wipe with MEK, sand a cross hatch pattern with 120 Grit sandpaper, then Wipe again with MEK, bonded and cured underwater (both tap water and sea water, 35g/L NaCl)

Additional specific cured properties of INSTAbond® NUWE-89 may be evaluated upon request.

STORAGE AND HANDLING:

The shelf life of INSTAbond® NUWE-89 is 12 months at 25°C. For best results, store in original, tightly closed containers in a cool, dry place out of direct sunlight. Containers should be loosely covered during the heating process to avoid pressure buildup. Allow contents to return to room temperature before mixing resin and hardener.

PACKAGING:

INSTAbond® NUWE-89 is packaged in cartridge kits, pints, quarts, gallons, pails. The hardener is packaged according to the container size of the resin. Specialty packaging options are available on request. Contact customer service for additional information at 800-895-4480 or sales@accrabond.com

GENERAL INFORMATION:

Recommendations for the use of products are based upon tests believed by us to be reliable. However, since the handling and use of our products under user's conditions are beyond our control, no warranty, expressed or implied, including but not limited to merchantability or fitness for a particular use, is made concerning this product. The user assumes all risks of use or handling, whether or not in accordance with any directions or suggestions of the supplier. Seller shall not be liable to purchaser or any other person for loss or damage directly or indirectly arising from the use of our products, from breach of any warranty or any other cause, the exclusive remedy against the seller being to require replacement or repair of defective goods. If the purchaser does not accept products on such items, they are to be returned at once, unopened. **This material is for professional and industrial use only.**

PRODUCT INFORMATION CONTAINED HEREIN IS INTENDED FOR REFERENCE ONLY. MATERIAL SAFETY DATA INFORMATION AVAILABLE AT (662) 895-4480 OR IN WRITING TO: ACCRAbond, Inc. 8848 Hacks Cross Road, Olive Branch, MS 38654, www.accrabond.com.