



Solutions from Dow Automotive Systems

BETAMATE™ Structural Adhesives

BETAMATE™ structural adhesives from Dow Automotive Systems are one- and two-component, room-temperature or heat-curable epoxy adhesives that eliminate pretreatment steps and simplify the joining of metals and composites.

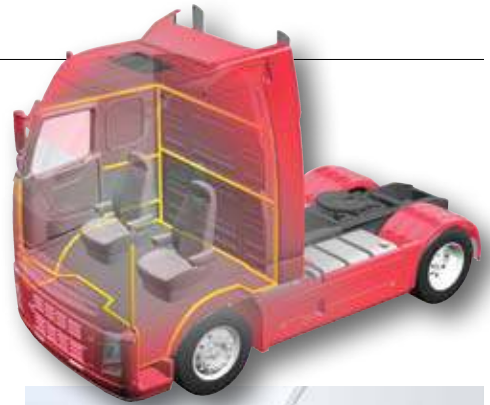
Specify BETAMATE to achieve exceptional bonding performance, weight reduction and production efficiency.

Key benefits

- Good adhesion to untreated aluminum, steel and composites—reduce or eliminate surface preparation
- Increased load-bearing capability versus traditional joining techniques such as riveting
- Improved vehicle aesthetics with elimination of exterior fastener heads
- Bonds through metal-forming oils and lubricants
- Increased corrosion protection with continuous bond lines
- Reduced vibration for better acoustical performance
- Long mixer residence time to reduce purge waste
- No odor
- Room temperature or heat curable
- Compatible with e-coat process
- Robust mix ratio tolerance

Applications

- Bus, truck, rail, specialty vehicle and automotive
- Structural bonding of steel, aluminum, magnesium and composites
- Side panels, roofs, luggage doors, body structure
- Repair applications



Product	BETAMATE™ 73312 / 73313	BETAMATE 73316 / 73317	BETAMATE 73326M / 73327M	BETAMATE 73328 / 73329	BETAMATE 73336 / 73337
Description	Aluminum and steel bonding; high modulus	Aluminum bonding; mid-range modulus	Aluminum, composite and steel bonding; optimized modulus	Carbon fiber, SMC and metal bonding	Galvanized and pre-primed steel bonding; high peel and shear strength
Component	73312 Resin 73313 Hardener	73316 Resin 73317 Hardener	73326M Resin 73327M Hardener	73328 Resin 73329 Hardener	73336 Resin 73337 Hardener
Appearance	Black paste	Black paste	Black paste	Black paste	Green paste
Mix Ratio	2:1	1:1	1:1	1:1	1:1
Open Time	30 min.	20 min.	120 min.	60 min.	180 min.
Handling Time*	4 hrs.	2 hrs.	6 hrs.	8 hrs.	10 hrs.
Cure Time*	48 hrs.	48 hrs.	48 hrs.	48 hrs.	4-7 days
Elongation	2%	2%	10%	10%	2%
Modulus	4,000 MPa 480,000 psi	2,400 MPa 348,000 psi	1,100 MPa 159,500 psi	480 MPa 70,000 psi	1,400 MPa 203,000 psi
Lap Shear Strength*	12.4 MPa 1,800 psi	11.7 MPa 1,700 psi	11 MPa 1,600 psi	6.2 MPa 900 psi	20.7 MPa 3,000 psi
Benefits	High strength; glass beads	Faster room-temperature cure; glass beads	Long open time; added flexibility; durable aluminum and composite bonding; minimizes read through	Added flexibility; minimizes read through; glass beads	Pigmented components; long working life; FMVSS 221 compliant; glass beads

*Curing at 23 °C; accelerate cure with short exposure to moderately elevated temperatures

Product	BETAMATE™ 1776L WR	BETAMATE 2098	BETAMATE 5408
Description	Oily galvanized steel to e-coated steel bonding; provides excellent stiffening and energy management	Steel and pretreated aluminum bonding; crash toughened	Galvanized and pre-primed steel bonding; high peel & shear strength
Component	Single component system	A Component: Resin B Component: Hardener	Single component system
Appearance	Red paste	Blue paste	Red paste
Mix Ratio	Non-mix system	2:1	Non-mix system
Open Time	Heat cured	20 min.	Heat cured
Handling Time*	30 min. @ 170 °C	1 hr.	30 min. @ 121 °C
Cure Time*	30 min. @ 170 °C	48 hrs.	30 min. @ 121 °C
Elongation	2.5%	30%	< 2%
Modulus	385 MPa 55,800 psi	1,700 MPa 246,500 psi	5,000 MPa 725,000 psi
Lap Shear Strength*	10.5 MPa 1,500 psi	21.0 MPa 3,045 psi	26.9 MPa 3,900 psi
Benefits	High performance; expandable, toughened epoxy reinforcement	Convenient body shop and field repair solution; glass beads	Low temperature cure; FMVSS 221 compliant; glass beads

*Curing at 23 °C; accelerate cure with short exposure to moderately elevated temperatures

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