



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.

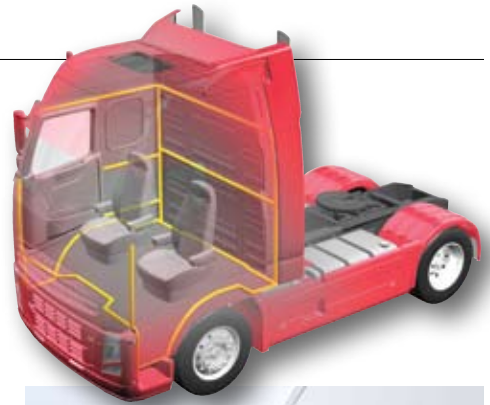
Specify BETAMATE to achieve exceptional bonding performance, weight reduction and production efficiency.

### 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
<b>Description</b>	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
<b>Component</b>	73312 Resin 73313 Hardener	73316 Resin 73317 Hardener	73326M Resin 73327M Hardener	73328 Resin 73329 Hardener	73336 Resin 73337 Hardener
<b>Appearance</b>	Black paste	Black paste	Black paste	Black paste	Green paste
<b>Mix Ratio</b>	2:1	1:1	1:1	1:1	1:1
<b>Open Time</b>	30 min.	20 min.	120 min.	60 min.	180 min.
<b>Handling Time*</b>	4 hrs.	2 hrs.	6 hrs.	8 hrs.	10 hrs.
<b>Cure Time*</b>	48 hrs.	48 hrs.	48 hrs.	48 hrs.	4-7 days
<b>Elongation</b>	2%	2%	10%	10%	2%
<b>Modulus</b>	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
<b>Lap Shear Strength*</b>	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
<b>Benefits</b>	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
<b>Description</b>	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
<b>Component</b>	Single component system	A Component: Resin B Component: Hardener	Single component system
<b>Appearance</b>	Red paste	Blue paste	Red paste
<b>Mix Ratio</b>	Non-mix system	2:1	Non-mix system
<b>Open Time</b>	Heat cured	20 min.	Heat cured
<b>Handling Time*</b>	30 min. @ 170 °C	1 hr.	30 min. @ 121 °C
<b>Cure Time*</b>	30 min. @ 170 °C	48 hrs.	30 min. @ 121 °C
<b>Elongation</b>	2.5%	30%	< 2%
<b>Modulus</b>	385 MPa 55,800 psi	1,700 MPa 246,500 psi	5,000 MPa 725,000 psi
<b>Lap Shear Strength*</b>	10.5 MPa 1,500 psi	21.0 MPa 3,045 psi	26.9 MPa 3,900 psi
<b>Benefits</b>	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

## Dow Automotive Systems

The Dow Chemical Company  
1250 Harmon Road  
Auburn Hills, Michigan 48362  
USA  
E-mail: [dowautomotive@dow.com](mailto:dowautomotive@dow.com)

## US

Toll Free 800 441 4DOW  
989 832 1542

## International

Europe / Middle East + 800 36 94 63 67  
Italy + 800 783 825  
Asia / Pacific + 800 77 76 77 76  
+ 60 37 958 3392  
South Africa + 800 99 5078

[dow.com](http://dow.com)

NOTICE: No freedom from any patent owned by Dow or others is to be inferred. Because use conditions and applicable laws may differ from one location to another and may change over time, the Customer is responsible for determining whether products and the information in this document are appropriate for the Customer's use and for ensuring that the Customer's workplace and disposal practices are in compliance with applicable laws and other governmental enactments. Dow assumes no obligations or liability for the information in this document. No warranties are given.

©™ Trademark of The Dow Chemical Company ("Dow") or an affiliated company of Dow

Form No. 299-52170-214 HMC