



Solutions from Dow Automotive Systems

BETAMATE™ Structural Bonding Adhesives

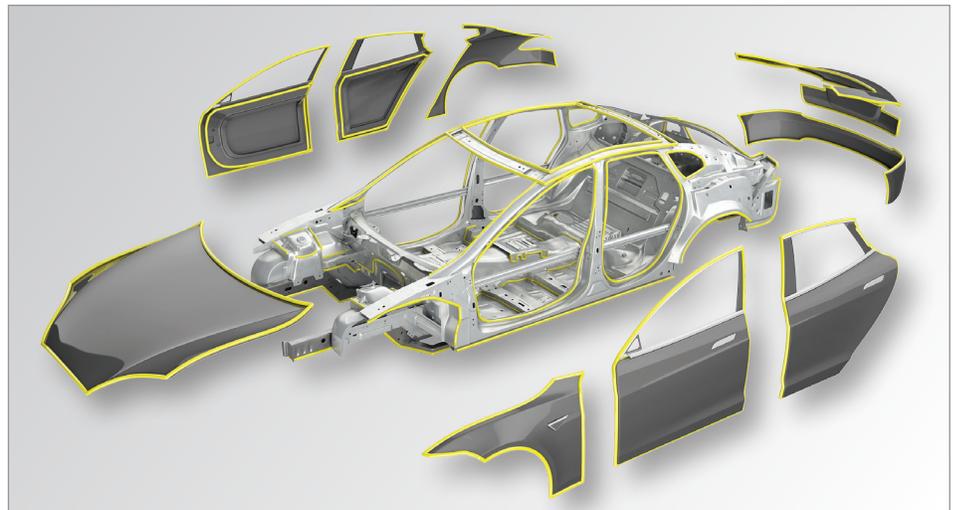
BETAMATE™ one- and two-component epoxy structural adhesives provide high-performance bonding to steel, aluminum and other materials to enhance stiffness, NVH, crash and durability performance.

They replace welds and mechanical fasteners to help improve durability while reducing weight and manufacturing cost. They are ideal for use in closures (doors, hoods, trunks and liftgates) as well as body structure and chassis (underbody, pillars and roof) applications.

Benefits

Dow Automotive Systems structural adhesives:

- Increase car body stiffness for improved handling and acoustic performance
- Decrease cost by reducing spotwelds, downgauging steel and enabling use of mild-steel in place of high-strength steel
- Reduce vehicle weight, thereby reducing CO₂ emissions
- Streamline assembly processes by overcoming weld point access issues



- Feature a modulus above 1,000 MPa, a glass transition temperature above 80 °C (176 °F) and an impact resistance f(t) from -40 °C to 80 °C (-40 °F to 176 °F)
- Adhere to oily substrates
- Are wash-off resistant
- Contribute to lightweight design flexibility and overall vehicle safety
- Join dissimilar and hard-to-weld substrates, including advanced high-strength steel, aluminum, magnesium and composites
- Improve chassis and body durability by reducing fatigue and failure commonly found around spot welds and fasteners
- Seal against environmental conditions that cause corrosion
- Can help lower cost by reducing welds and gauge, without losing mechanical properties

Applications

- To meet changing trends in vehicle design and contribute to lighter vehicles, BETAMATE structural adhesives can be used on the following, in addition to steel and high-strength steel (HSS):
- Full aluminum vehicle bodies
 - Aluminum closures
 - Cast aluminum to profile bonding
 - Composite body-in-white parts integration
 - Magnesium suspension struts
 - Aluminum chassis/powertrain components
 - Aluminum or composite roof bonding
 - Bonded seat structures

Application and Bonding

One- and two-part BETAMATE™ structural adhesives are designed to meet stringent OEM requirements. They provide excellent bonding and adhesion to a wide variety of materials, including:

- Coated or uncoated steel
- Pretreated aluminum
- Pretreated magnesium

Typically when using thermal-cured one-component adhesives, no treatment is required for most metals if the surface is well-defined and oil quantity does not exceed 4 grams per square meter. We recommend wiping off excess oil when using a two-component system with no heat treatment. Dow Automotive Systems offers technical support to assist with specific applications.

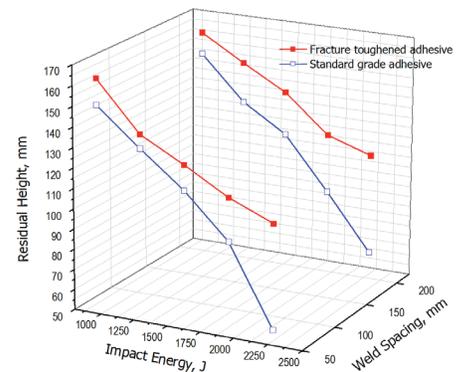
For composite materials, plastics and hybrid system bonding, or any other assembly where a thin bond line is not possible, Dow Automotive Systems also offers an extensive portfolio of elastic and composite bonding systems with higher elasticity.

Supporting Your Project from Concept to Launch

Dow Automotive Systems is a leading supplier of materials, technology and support for automotive adhesive applications. We offer you a globally consistent, reliable and secure material supply, with significant cost efficiencies. We have engineering expertise to facilitate the design with – and use of – structural adhesives. And on the front end, we offer a complete range of materials for the transportation industry, including leading adhesives, glass bonding systems, polyurethanes, sealants, films, fluids, structural enhancement and acoustical management solutions.



BETAMATE structural adhesives can be applied robotically in bead, swirl or jet spray using standard industrial equipment. The adhesives also can be applied manually from dispensing systems or cartridges.



Fracture-toughened BETAMATE adhesives perform better than standard grades with improved stability to progressive crush and load-carrying capability.

ABOUT DOW AUTOMOTIVE SYSTEMS

Dow Automotive Systems, a business unit of The Dow Chemical Company, is a leading global provider of collaborative solutions and advanced materials for automotive and commercial transportation original equipment manufacturers, tier suppliers and aftermarket customers. Our materials focus includes structural, elastic and rubber-to-substrate adhesive solutions; polyurethane foams and acoustical management solutions; innovative composite solutions; and films and fluids, with an emphasis on achieving customer and corporate sustainability goals. Offices and application development centers are located around the world to ensure regionalized technical, engineering and commercial support for customers and industry groups. For additional information, visit dowautomotive.com.

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