



Dow Automotive

Technical Datasheet

BETAMATE™ XD4600G

Crashresistant Structural Adhesive

Description / Application:

BETAMATE™ 4600G is a one component, epoxy based adhesive filled with glassbeads especially developed for the body shop. The adhesive is used in the car to increase the operation durability, the crash performance and the body stiffness.

Properties:

- Excellent adhesion to pretreated aluminium with good tolerance to oil and drylubes.
- Helps to increase the stiffness and the crash stability of the entire car body.
- High durability of the adhesive and the adhesive bond.
- Due to its sealing capability the metal is protected against corrosion.
- Compatible with other mechanical and thermal joining techniques.
- Compatible with the electrocoat process and wash-off resistant.
- Precurable

Application:

The product is at temperatures about 40 up to 65°C applicable as a bead. It can be applied with the following parameters:

application speed	Up to 300 mm/s
temperatures: follower plate follower plate - doser doser - nozzle nozzle	unheated unheated 30-50°C 35-50°C

For an optimum tack of the adhesive, the parts to bond should be stored at 15°C or higher. In case of an application break longer than 30 minutes the heating of the application equipment should be switched of.

All Dow Automotive products are primarily developed in co-operation with the automobile manufacturers, according to their needs and their specifications; they are approved for the specific applications as defined by the customer.

The use of the product other than approved application have to be released in written form by the Technical Service of Dow Automotive.

Technical Data:

Basis	epoxy resin
Colour	orange
Density 23°C (DIN 52451)	1.28 g/ml
Solid Content	> 99%
Viscosity/Yield Point (23°C, Bohlin, Casson)	230 Pas / 330 Pa
Curing Condition	> 140°C / 30 minutes
Standard Curing	180°C / 30 minutes
Tensile Strength (DIN EN ISO 527-1)	56 MPa
Elongation at Break (DIN EN ISO 527-1)	approx. 4%
E-Modulus (DIN EN ISO 527-1)	2900 MPa
Lap Shear Strength (DIN EN 1465) (AA6016, pretreated, 1.2 mm) Adhesive layer thickness: 0.2 mm Bonded area: 25x10 mm	26 MPa
T-Peel Strength (DIN EN) (AA6016, pretreated, 1.2 mm) Adhesive layer thickness: 0.2 mm Bonded area: 25x100 mm	11 N/mm
Impact Peel Strength (ISO 11343) (AA6016, pretreated, 1.2 mm, 23°C, 2m/s) Adhesive layer thickness: 0.2 mm Bonded area: 20x30 mm	24 N/mm
Bonding Surface Preparation	The material has been designed to tolerate up to 5 g/m ² of surface oil.
Application Tool	Cartridges: hand-operated or pneumatic heated gun with mechanical piston. Drums, pails: heated pumping system.
Cleaning	Uncured material can be removed with BETACLEAN 3510. Attention: The contact with bonded areas should be avoided.
Containers	Pails, drums: 25 kg and 200 kg (re-usable with PE-liner). Cartridges: 0,38 kg
Shelf life	Storable at temperatures below 30°C for 6 month.

The given data are standard values.

Health and Safety

- Bulk Exothermic Reaction

The material curing reaction is exothermic. If the material is held in bulk the reaction is accompanied by a rapid build-up of exothermic heat. To avoid the risk of this bulk exothermy, containers of the material should in no circumstances be heated by e.g. hot plates or simple drum heaters. If heating a bulk quantity of the material is considered necessary, advice should be sought.

- Caution

The adhesive resins are generally quite harmless to handle provided that certain precautions normally taken when handling chemicals are observed. The uncured materials must not, for instance, be allowed to come into contact with foodstuffs or food utensils, and measures should also be taken to prevent the uncured materials, from coming into contact with skin, since people with particularly sensitive skins may be affected. The wearing of impervious rubber or plastic gloves will normally be necessary; likewise the use of eye protection. The skin should be thoroughly cleaned at the end of each working period by washing with soap and warm water. The use of solvents is to be avoided. Disposable paper - not cloth towels - should be used to dry the skin. Adequate ventilation of the working area is recommended. For further and more detailed precaution measures see the Health and Safety Data Sheet.

Notice:

Quality is our utmost goal. Dow Automotive works according to a modern quality management system conforming to international standard ISO/TS 16949.

All sites of Dow Automotive are certified according to ISO 14001.

All statements, technical information and recommendations contained in this document are based on tests that we deem reliable. However, the customer is responsible to determine the suitability of the product for customer's intended purpose. No freedom from any patent owned by Dow or others is to be interfered.

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