



BETAMATE™ 1440

Structural Adhesives

BETAMATE™ 1440 is a one component, epoxy-based adhesive, especially developed for the body shop. The adhesive is used in the car to increase the operation durability, crash performance and the body stiffness.

BETAMATE™ 1440 has excellent adhesion to automotive steels (including coated steels and pretreated aluminum with good tolerance to oily and dry lubes). BETAMATE™ 1440 helps to increase the stiffness and the crash stability of the entire car body with high durability of the adhesive and adhesive bond and corrosion protection due to its sealing capability. It is compatible with other mechanical and thermal joining techniques, compatible with the e-coat process, wash-off resistant and precurable up to six weeks open time in the uncured bond. Typical applications include bonding of the vehicle body structure and closure hem flange applications.

Product information

Colour	Red
Basis	Epoxy resin
Solid content	≥99 %

Rheological properties

Viscosity, Casson	55 ^[1] Pa.s	
Yield Point, Casson	480 ^[1] Pa	
Complex viscosity	175 ^[1] Pa.s	DIN 54458
Shear storage modulus	35000 ^[1] Pa	DIN 54458

[1]: 45°C

Cure conditions

Curing time	0.5 h
Cure temperature	180 °C

Typical mechanical properties

Tensile Modulus	1830 MPa	ISO 527-1/-2
Stress at break	31 MPa	ISO 527-1/-2
Strain at break	11 %	ISO 527-1/-2
Lap shear strength	32 MPa	DIN EN 1465
Peel strength, T-Peel	10 ^[3] N/mm	ISO 11339
Peel strength, Impact-Peel	30 ^[4] N/mm	ISO 11343

[2]: DC01 1.5mm; Adhesive layer thickness 0.2mm; Bonded area 25x10mm

[3]: DX56 Z100MB, 0.8 mm; Adhesive layer thickness 0.2mm; Bonded area 25x100mm

[4]: DX56D+Z100 MB 0.8mm / DC06A+ZE 75/75+P 0.8mm; 2m/s; Adhesive layer thickness 0.2mm; Bonded area 20x30mm

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Other properties

Density 1.24 g/cm³ ISO 1183

Storage and stability

Shelf life 10^[5] months

[5]: between 5-28 °C, 12 months between 5-15°C

Characteristics

Compatibility Metals

Additional information

Adhesives

Surface Preparation

The material has been designed to tolerate up to 5 g/m² of surface oil.

Application

All Dupont T&I Adhesives 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 must be released in written form by the Technical Service of DuPont T&I Adhesives.

Application Equipment

Cartridges: hand-operated or pneumatic heated gun with mechanical piston
Drums, pails: heated pumping system

Application Parameter

The product is cold pumpable / pumpable at temperatures >35°C and can be applied as bead / swirl. It can be processed with the following parameters:

Application speed: up to 500 mm/s

Temperature follower plate: unheated / 35 - 40°C

Temperature follower plate to doser: unheated / per heating zone 5°C heat increase, max temperature at doser 55°C

Temperature nozzle: 45 - 60°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 off.

Cleaning

Uncured material can be removed with BETACLEAN 3510. Attention: The contact with bonded areas should be avoided.



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Page: 3 of 3

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