TECHNICAL INFORMATION

BEST-PU 1505

BEST-PU 1505 is a two component, black, odourless, thixotropic polyurethane adhesive curing at room temperature, specially designed for structural bonding of a wide range of materials as thermosetting and thermoplastic materials, steel, aluminium, concrete, wood and glass.

PRODUCT DATA:

Properties	Component A	Component B	Mixed
Chemical base	Polyol	MDI	Polyurethane
Mixing ratio by volume	1,00	1,00	-
Mixing ratio by weight	0,84	1,00	-
Colour	Black	Amber	Black
Appearance	Liquid	Liquid	Thixotropic
Viscosity (mPas)	2500	3000	50.000 mPas
Relative density	1,04	1,20	1,12
Application temperature	+10 / +30 °C	+10 / +30 °C	+10 / +30 °C
Working time			5 min
Bonding time			15 min
Fully cured			480 min
Temperature of exothermic reaction			50°C
Hardness (Shore)			80 D
Elongation (%)			15
Operating temperature (°C)			-36 up to +100
Storage Temperature (°C)			+20 / +30
Shelf life			12 month

PROCESSING:

The strength and durability of bonded joints depend on proper pre-treatment of the surfaces to be bonded. At the very least, joint surfaces should be cleaned with a good degreasing agent in order to remove all traces of dust, dirt, oil and grease.
Pre-treatment of thermoplastics materials such as PVC, polycarbonate, polypropylene, PMMA, etc., can be made using a mixture of light ethers or with isopropanol. Use of strong solvents is not recommended due to the risk of damage to the plastic surface.

Pre-treatment of other surfaces can be made using acetone. Petrol or other solvents should never be used.

Where possible, carry out a mechanically abrading to remove paint from the surfaces (where necessary) and to increase strength and resistance of the adhesion. Let dry the pre-treated area before applying the adhesive.

PRODUCT APPLICATION:

BEST-PU 1505 is available in 2-component cartridges or in different size drums.
Anyway, blending should be made through static mixer composed by a minimum of 16 elements. A lower number of components does not allow a complete mixing. A higher number of components would increase speed of the chemical reaction of hardening. Static mixers are for a unique use only.

2-components cartridges can be used through manual applicators or specifics pneumatic tools, based on capacity and cartridge shape.

The mixture must be applied directly from the mixer on the pre-treated dry surface. The optimal layer of adhesive that will guarantee the highest resistance for the joint should have at least 0.5 mm of thickness. The components have to be assembled within the first minute of extrusion of the adhesive and sealed with a steady pressure over the gluing area.

REACTION MECHANISM:

The cure speed is mainly influenced by two factors: the application temperature and the application thickness. Being the reaction exothermic, the speed decrease as the thickness and temperature application increase.

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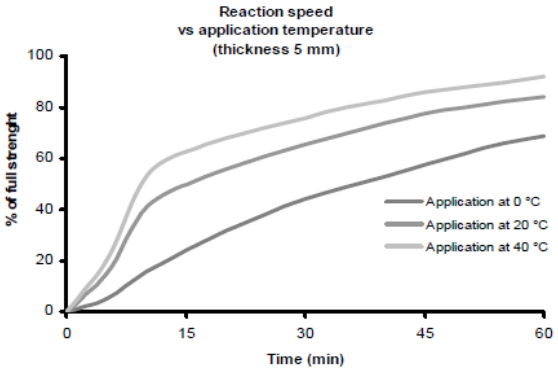
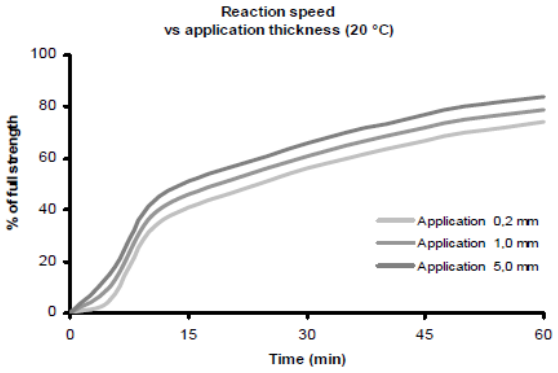
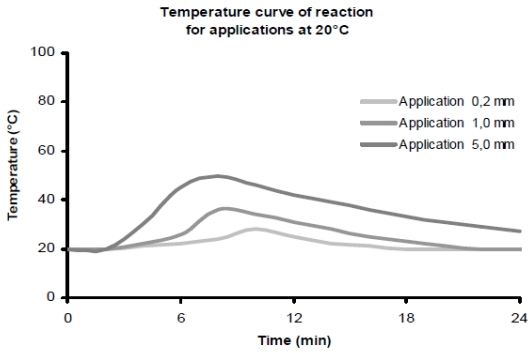
Even if in smaller measure, the substrate influences the speed of reaction. Materials with a high coefficient of thermal conductivity will tend to slow down the reaction.

The maximal temperature of the reaction will be reached in 5 mm application thickness and is always lower than 80°C.



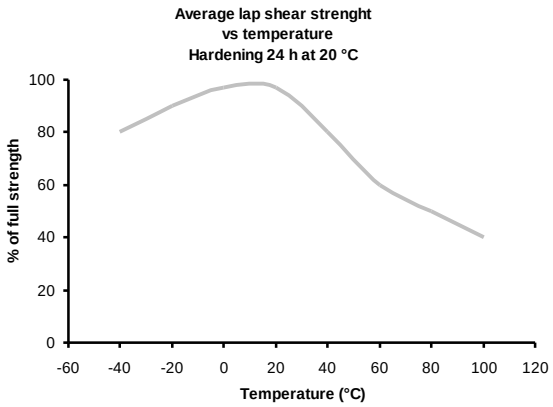




TECHNICAL CHARACTERISTICS OF CURED PRODUCT:

The below properties have been obtained through standard samples tests, made bonding by overlapping samples of different materials of dimensions 100 × 20 × 20 mm with an adhesion area of 20 × 20 mm.

The values, obtained with standard methods on typical lots, are exclusively provided as technical information, and not as product specification. In any case, it will be up to the user to test the product for a specific situation and then give his final approval.



Physical properties at 20 °C

Tensile strength (N/mm²)	23
Resistivity (Ω•cm)	1,2x10¹⁵
Dielectric constant e_r	3,8
Dielectric strength (kV/mm)	25
Thermal conductivity (W/m•K)	0,21

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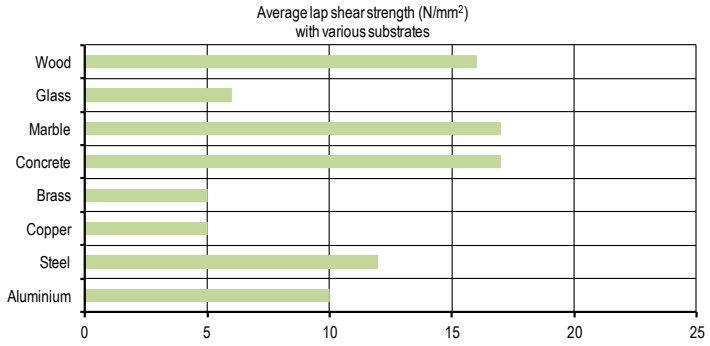
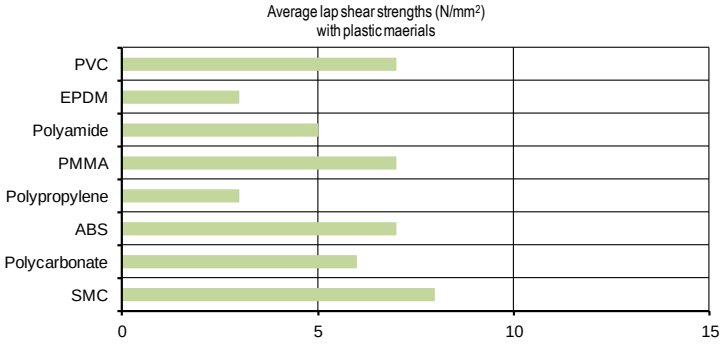


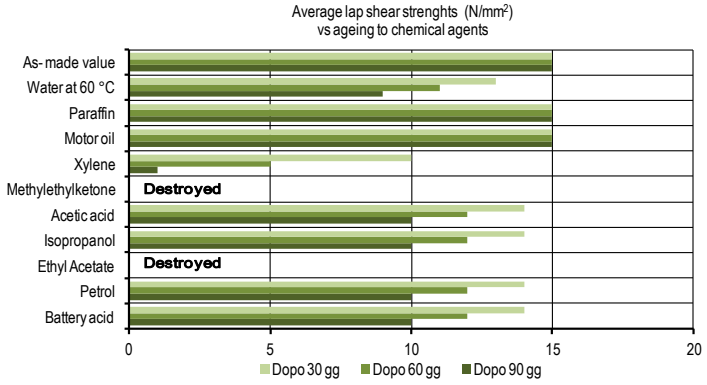
The tests have been conducted at 20°C on metal to metal joints, which have been hardened for 48 hours at 20°C.

Pre-treatment has been made by sanding and degreasing with acetone.

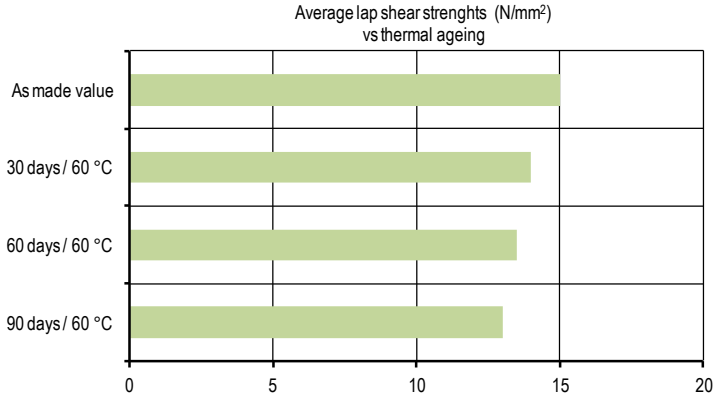


The tests have been conducted at 20°C on plastic to plastic joints, which have been hardened for 48 hours at 20°C.

Pre-treatment has been made by abrading and degreasing with isopropanol.



If not otherwise specified, the tests have been carried out at 20 °C after immersion for 30, 60 and 90 days at 20 °C on steel to steel joints which have been hardened for 48 hours at 20 °C.



The tests have been carried out at 20°C on steel to steel joints, which have been aged at 60 °C.

At the end of the 3 thermo cycles of 24 hours each ranging from -40 °C to 100 °C, there has been no variation in the average lap shear strength.

Pre-treatment has been made by sanding and degreasing with acetone.

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PRODUCT STORAGE:

BEST-PU 1505 has a shelf life of 12 months from production as long as it is stored in a cool and dry place, between +20 °C and +30 °C. Expiry date is indicated on the label.

The cartridges have to be kept in a sealed plastic bag and protected from light and heating sources inside the original packaging.

Once opened, the cartridges will last until the expiry date (as long as the above conditions are met) leaving the last mixer used onto the cartridge.

PRODUCT HANDLING CAUTIONS:

BEST-PU products are generally quite harmless to handle provided that certain precautions are normally taken when handling chemicals are observed.

The uncured materials must not be allowed to come into contact with foodstuffs or food utensils, and measures should be taken to prevent the uncured materials from coming in contact with the skin, since people with particularly sensitive skin 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 has to be avoided. Disposable paper should be used to dry the skin.

Adequate ventilation of the working area is recommended.

These precautions are described in greater detail in the safety data sheet for the individual products and should be referred to for further information.

GENERAL

The data and information above correspond to the current know-how of BEST-Klebstoffe GmbH & Co. KG. Our information and data have been developed from laboratory tests and extensive practical experience. It is the user's responsibility to perform receiving inspections and to determine suitability for the user's purpose of any production methods. We disclaim all warranties expressed or implied, that any product will have specific properties for a particular purpose. BEST-Klebstoffe GmbH & Co. KG reserves the right to change the contents of this document as necessary.

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