

Merbenit HM21

Elastic adhesive and sealant based on SMP, ideal for vehicle engineering. Elastic and sealing bonding in metal, apparatus and mechanical engineering, weather-resistant, very wide adhesion range, paint-compatible.

Product advantages

- Very wide adhesion range
- Easy to process
- High elasticity, good mechanical strength
- Long processing time
- Without addition of solvents, isocyanates, silicones or phthalates
- Low odour
- Non-corrosive on surfaces
- Can be ground and painted
- Very good sealing properties
- Impact- and vibration-resistant (shock-absorbing)
- Good weather and UV resistance

Technical data

Chemical base	Silane modified polymer
Mechanism of curing	1 comp. moisture curing
Consistency, DIN EN ISO 7390	Stable, ≤ 3 mm
Tooling time	max. 20 min.
Curing rate after 24h	ca. 2.5 mm
Curing rate after 48h	ca. 3.5 mm
Shore-A-hardness, DIN ISO 48-4	ca. 45
Tensile strength DIN 53504 S2*	ca. 2.2 N/mm ²
Modulus elongation at 100%, DIN 53504 S2 *	ca. 1.3 N/mm ²
Elongation at break, DIN 53504 S2 *	ca. 270%
Density	1.52 ± 0.05 g/cm ³
Volume change, DIN EN ISO 10563	≤ 5%
Temperature resistance after curing	- 40 °C to + 90 °C
Application temperature	+ 5 °C to + 40 °C

All measurements were performed under normal conditions (23 °C and 50 % relative humidity).

* The data are based on measurements after 3 months.

Application

Elastic and sealing bonding in the fields of metal, apparatus and mechanical engineering, plastics, ventilation and air conditioning technology, car body, wagon, vehicle and container construction, lift construction, passenger bridges, household appliances, seam sealing on vehicles and connection joints.

Substrate range

Suitable materials include metals, thermal coated, painted, galvanised, anodised, chromated or hot-dip galvanised surfaces, various plastics, ceramics, concrete, plaster, wood, glass, painted surfaces, etc. Due to the wide variety of different plastics and compositions, as well as materials that are prone to stress cracking (PC, PMMA), preliminary tests are recommended. Please also refer to the section on primers.

Materials that are not suitable include PP, PE, PTFE (Teflon), silicones, bituminous substrates.

In case of high temperatures of metal profiles, deck strips or copper deck strips exposed to the sun, our neutral-curing silicones Gomastit 400 and Gomastit 407 are ideal.

Preliminary tests are always recommended for unknown applications!

Meets the standards and certificates

- EMICODE EC1Plus
- Eurofins IAC Gold

Technical data sheet Merbenit HM21

Substrate preparation

To achieve reproducible results the substrate has to be pretreated according to the state of technology. All undefined surfaces must be removed using suitable methods. Apply the adhesive/sealant promptly to the prepared surface. Depending on the substrate and the expected requirements a mechanical or chemical pre-treatment is recommended respectively cleaning with rubbing alcohol, isopropyl or acetone. For application the surface has to be clean, durable and free of dust, oil and grease. The compatibility with adjacent materials, coatings etc. must be determined in advance.

Primer

With many materials, good adhesion is achieved without primer. Preliminary tests are recommended. Primers can be used to improve adhesion:

- on porous, absorbent surfaces such as concrete, masonry, plaster: Apply V21 primer with a brush. The use of V21 primer is generally recommended when exposed to water.
 - on smooth, non-absorbent surfaces such as plastic, stainless steel, thermal coating: Apply a thin layer of V40 primer with a lint-free cloth. As thermal coatings can vary greatly, the use of V40 primer or preliminary tests are generally recommended.
 - on UV-exposed glass: Black Glass primers serve as a protective barrier against the effects of UV radiation.
 - In direct contact with bituminous substrates, V17 primer can be used as a barrier layer.
 - please observe the drying times and information on the packaging of the respective primers or in the respective technical data sheets at www.merz-benteli.ch -> Accessories.
- Primers are sensitive to moisture. Close the packaging immediately after use and use up as quickly as possible.
- Note: primers and thinly applied sealants leave stains that cannot be completely removed.

Processing

- Can be applied directly from the cartridge / bag using a suitable caulking gun (manual, air, battery)
- Cut the nozzle tip according to the joint width V-nozzles are recommended for bonding applications
- Depending on the bonding surface, material expansion, tension and mechanical stresses a layer thickness of 1 - 6 mm is recommended
- For vapour permeable substrates the material can be applied in a large area using a notched trowel
- Can be applied with automatic dispensing equipment
- Non-cured adhesive can be removed with rubbing alcohol or isopropyl
- Cured adhesive can only be removed mechanically

Paint compatibility

Due to the wide variety of varnishes and paints on the market, we recommend preliminary tests. Delayed drying may occur with alkyd resin paints. If applied to painted or plastered surfaces, the paint/plaster must be allowed to dry sufficiently (usually 10 days). Movement-compensating sealants with greater elasticity than paint must not be painted over completely (cracking).

Chemical resistance

- Good resistance to water, sea water, aliphatic solvents, oils, greases, diluted inorganic acids and alkalis
- Moderate resistance to esters, ketones and aromatic compounds
- Not resistant to concentrated acids and chlorinated hydrocarbons, gasoline, petrol oil

The chemical resistance depends on the exposure time, temperature and concentration of the chemical. Preliminary tests under practical conditions are therefore highly recommended. Our data sheets on chemical resistance contain further information.

Colours

- white
- grey
- black

Packaging

Cartridges of 290 ml in boxes of 12 units
Sausages of 600 ml in boxes of 12 units
Hoblocks of 20 liter

Shelf life and storage conditions

- 15 months from date of production in original packaging
- Store cool and dry (10 - 25 °C)
- Further information on request

Work and environmental safety

Important information about work and environmental safety is available on the material safety data sheet.

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