

ELASTOSIL® 121

Silicone Sealant for Construction of Aquaria and Glazing Applications

Characteristics

ELASTOSIL® 121 is a one-part, acid-curing, silicone sealant with excellent mechanical properties and high curing rate for construction of aquariums and industrial applications.

ELASTOSIL® 121 cures at room temperature under the action of atmospheric moisture to give a permanently flexible silicone rubber.

- Non-sag
- Ready gunnability at low (+5°C) and high (+40°C) temperatures
- Low shrinkage on curing
- Flexible at low (-40°C) and high temperatures (+150°C)

Special characteristics

- very fast crosslinking: quickly becomes tack-free
- good tooling properties
- Excellent tooling characteristics for professional use
- special high-viscosity paste

Applications

ELASTOSIL® 121 is a high-performance sealant designed for sealing of joints exposed to high mechanical loads and for sealing of joints which need to quickly build up mechanical strength.

ELASTOSIL® 121 is suitable for the construction of aquariums which meet the requirements of DIN 32 622. The bond thickness must be at least 1 mm. During curing the temperature should be between +15 and +40°C.

The sealant can be applied by either hand or machine to seal a wide variety of materials, such as glass, coated glass, ceramic tiles, enamel, painted surfaces (wood and others), aluminum, steel and many plastics.

ELASTOSIL® 121 is also a sealant for use in glazing and industrial applications and for the construction of silos and containers

Restrictions on use

ELASTOSIL® 121 should not be used on substrates such as marble, concrete, fibrous cement and mortar, as the product releases acetic acid during curing.

ELASTOSIL® 121 should not be used in contact with metals such as lead, copper, brass or zinc as corrosion will result.

ELASTOSIL® 121 may be discolored in contact with some organic elastomers, e.g. EPDM, APTK and neoprene.

ELASTOSIL® 121 is not suitable for applications involving contact with natural stone, such as marble, granite, quartzite, as it can cause staining.

ELASTOSIL® 121 is not recommended for structural glazing bonding.

ELASTOSIL® 121 should not be used on prestressed polyacrylate elements as it may cause environmental stress cracking (crazing).

Before using ELASTOSIL® 121 on the edge of laminated glass, we recommend contacting your nearest WACKER service center for detailed information.

The curing time can be extended at lower temperature, lower humidity or by low volume of air change.

Adhesion

ELASTOSIL® 121 exhibits excellent primerless adhesion to most non-porous siliceous material, e.g. glass, tiles, ceramics, enamel, glazed tiles and clinker; impregnated, varnished or painted wood; and some plastics.

Users must carry out their own tests due to the great variety of substrates.

The adhesion can be improved in many cases by pretreatment of the substrates with a primer.

Product data

Unvulcanized rubber

Property	Test procedure	Unit	Value
Density at 23°C	ISO 1183, methode A	[g/cm³]	1.03*
Consistency	ISO 7390, profile U 20		Non-sag
Extrusion rate at 23°C	PV 08127	[ml/min]	250
Skin-forming time at 23°C / 50 % r.h.		[min]	ca. 15
Vulcanization at 23°C / 50 % r.h.		[mm/24h]	ca. 3
Shrinkage on cure	ISO 10563	[%]	ca. 3

* transparent

These figures are intended as a guide and should not be used in preparing specifications.

Product data

Vulcanized rubber

After 4 weeks storage at 23°C / 50 % rh

Property	Test procedure	Unit	Value
Tensile strength	ISO 8339	[N/mm ²]	0.8
Ultimate elongation	ISO 8339	[%]	200
Modulus at 100 % elongation	ISO 8339	[N/mm ²]	0.5
Hardness, Shore A	ISO 868		22
Movement capability	ISO 11600	[%]	25
Combined tension and shear resistance	DIN 52 455, DIN 53 281	[N/mm ²]	1.6
Tear strength	ISO 34, method C	[N/mm]	5.7

These figures are intended as a guide and should not be used in preparing specifications.

If adhesion difficulties arise please contact our technical service.

Specifications

ELASTOSIL® 121 meets the requirements of the following standards or institutions:

TÜV Rheinland (Rhineland Technical Inspection Authority):

Approved as sealing compound for the construction of aquariums (R 60007911 dated July 13. 2004)

ISO 11600:

Classification of sealants for Building Construction: G – 25 HM

ASTM C 920:

Elastomeric joint sealants: type S, grade NS, class 25, use NT, G and A.

TT-S-001543 A:

Sealing compound: silicone rubber base (for caulking, sealing and glazing in buildings and other structures). Class A: compounds resistant to 50% maximum total joint movement.

TT-S-00230 C:

Sealing compound: elastomeric type, single component (for caulking, sealing and glazing in buildings and other structures), type II, class A.

BS 5889, 1989:

“One-part gun grade silicone-based sealants.” Type B “Sealing compound for universal use in construction joints”.

UNI 9610, 9611:

Silicone sealant for joints – requirements and test, packaging.

Weather and heat resistance

ELASTOSIL® 121 has excellent weatherability and is virtually unaffected by UV, radiation, ozone, rain, snow, sunlight, and extremes of temperature. Its mechanical and physical properties do not change appreciably on aging or exposure to weather. This has been confirmed in 6000-h weatherometer tests performed in accordance with DIN 53 387.

Even after many years in service, seals remain fully functional. Cured ELASTOSIL® 121 stays elastic at temperatures from as low as –40°C to as high as +150°C. It will even withstand brief exposure to lower and higher temperatures.

Processing

ELASTOSIL® 121 is supplied as a paste-like, one-part, ready-to-use material.

It may be gunned at temperatures ranging from +5°C to +40°C and can thus be used in any climate.

ELASTOSIL® 121 is readily applied to most types of glass (laminated, coated, uncoated), ceramic tiles, glazed tiles, enamel and many other materials.

However, as surfaces vary greatly from application to application, it is best to carry out preliminary adhesion and compatibility tests before use.

ELASTOSIL® 121 is compatible with all cured one-part silicone sealants. Where two or more different sealants are used, allow the first to cure completely before applying the next.

Joint design and dimensions

The requirements for the construction of aquaria are set out in DIN 32 622. The bond thickness must be at least 1 mm. During curing the temperature should be between +15 and +40°C.

Surface preparation

ELASTOSIL® 121 should only be applied to surfaces which are clean, dry, free of all loose material, dirt, rust or oil and other contaminants.

Cleaning:

Contaminated surfaces may be cleaned mechanically, if porous, or with a solvent if nonporous. Glass may be cleaned with water containing a surfactant or with a solvent. In the latter case, apply the solvent with a clean, oilfree, lintfree cloth. Remove residual solvent with a fresh, clean dry cloth before it evaporates.

Caution:

Always follow the recommendations and instructions provided by the solvent manufacturer. As solvents are usually flammable, keep them away from heat, naked flames or sparks. Ensure adequate ventilation. Do not inhale solvent fumes or allow solvent to remain in contact with the skin for prolonged periods.

Primers:

Ceramic tiles, enamels and glass do not usually require priming. To determine if priming is necessary, apply a bead of ELASTOSIL® 121 to the substrate and test its adhesion.

Masking and Tooling:

Masking tape affords a simple means of protecting critical areas beside joints from contact with the sealant. Do not allow the masking tape to touch the clean faces of the joint. Tool the sealant immediately after application and remove the tape before a skin forms.

Storage

ELASTOSIL® 121 has a shelf life of at least 12 months when stored in a cool (below 25°C), dry place in moisture-tight original container. The best before date of each cartridge is printed on top rim.

If the material is kept beyond the recommended shelf life, it is not necessarily unusable, but a quality control should be performed on the properties relevant to the

application.

Colors

ELASTOSIL® 121 is available in the colors "Transparent" and "Black."

Packaging

ELASTOSIL® 121 is usually supplied in standard size cartridges that fit all standard caulking guns as well as in 400 ml sausages. Other types of packaging can be supplied on request.

Safety information

During vulcanization acetic acid is released. These vapors should not be inhaled for long periods or in high concentration. Hence, good ventilation of the work place is necessary. Should uncured silicone rubber come into contact with eyes or mucous membranes, the affected area must be rinsed thoroughly with water as irritation will otherwise be caused. Avoid prolonged contact of uncured sealant with the skin - use a dry cloth or paper to remove it.

Keep out of reach of children.

Cured silicone rubber, however, can be handled without any risk to health.

Comprehensive instructions are given in the corresponding Material Safety Data Sheets. They are available from Wacker subsidiaries.

The data presented in this leaflet are in accordance with the present state of our knowledge, but do not absolve the user from carefully checking all supplies immediately on receipt. We reserve the right to alter product constants within the scope of technical progress or new developments. The recommendations made in this leaflet should be checked by preliminary trials because of conditions during processing over which we have no control, especially where other companies' raw materials are also being used. The recommendations do not absolve the user from the obligation of investigating the possibility of infringement of third parties' rights and, if necessary, clarifying the position. Recommendations for use do not constitute a warranty, either express or implied, of the fitness or suitability of the products for a particular purpose.

The management system has been certified according to DIN EN ISO 9001 and DIN EN ISO 14001

WACKER

and ELASTOSIL® are registered trademarks of Wacker Chemie AG.

Version from 02-05-06

For technical, quality, or product safety questions, please contact:

Wacker Chemie AG
WACKER-SILICONES
Hanns-Seidel-Platz 4
D-81737 Munich, Germany

www.wacker.com
silicones@wacker.com