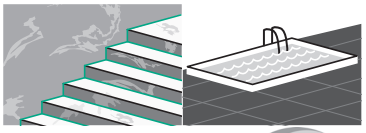
440

RAMSAUER®

LASTING BONDS.

Naturstein

1-component neutral silicone sealant



eco Basis ecobau Cert.

Natural Stone

CE 0757
13
Ramsauer
RA-440-V01-13
EN 15651-1 F Ext.-Int.
EN 15651-3 XS
EN 15651-4 PW Ext.-Int.

25 JAHRE QUALITÄT

Technical data sheet

Version: 04-2024

Tests/benefits:

· DIN EN ISO 15651-1 F20LM Ext.-Int.
· DIN EN ISO 15651-3 XS1
· DIN EN ISO 15651-4 PW20LM Ext.-Int.
· ISO 16938-1:2008
· DIN EN ISO 846
· Suitable for use in the foodstuffs industry
· Certificate of compatibility for the foodstuff industry
· Suitable for use for cleanrooms
· Fulfils the French VOC requirement Class A+

1. Mechanical Properties

Base	Neutral cure oxime silicone sealant
Skin formation time	~ 6 Min. (23°C/50% relative humidity)
Full curing time	~2.5 mm/24 hours (at +23°C/50% relative humidity)
Density	~ 1.01 (EN ISO 1183-1) coloured ~ 1.22 (EN ISO 1183-1) coloured, matte
Shore A hardness	~ 24 (DIN EN ISO 868)
Volume shrinkage	~ 3.8% (EN ISO 10563)
Tear propagation resistance	~ 5.1 N/mm (ISO 34-1)
Tensile stress at break	~ 0.54 N/mm² (DIN EN ISO 8339)
Module	~ 0.46 N/mm² (EN ISO 8339)
Elongation at break	~ 100% (DIN EN ISO 8339)
Resistance to high and low temperatures	-50°C to +150°C (long-term exposure)
Application temperature (substrate, environment)	Lower +5°C, upper +35°C
Admissible total deformation	20%
Colours	Also available in textured and matte finishes as per the current colour chart
Packaging	310ml cartridge; 400 & 600ml foil bag; industrial container 20-l drum; 200-l drums
Shelf life of cartridges and foil bags	12 months in original packaging in cool and dry storage conditions
Shelf life of industrial container	6 months, cool and dry in sealed original container

2. Properties

When exposed to atmospheric moisture, 440 Naturstein cross-links to form a surface-dried vulcanised-layer. No corrosion occurs in case of contact with metals thanks to the neutral cross-linking system. Furthermore, the sealant does not contain any migrating ingredients (plasticisers); this means that there is no risk of edge zone contamination in the case of natural stone. 440 Naturstein contains fungicidal respectively bactericidal agents that counteract infestation by microorganisms (moulds, bacteria). The sealant is resistant to commercially available cleaning agents and disinfectants. Excellent UV-, weathering- and aging-resistance. In vulcanised state, 440 Naturstein is physiologically harmless and inert. With the exception of the structured and matt colors, the material is also ideal for use underwater in salt- and chlorine water pools.

440 Naturstein

RAMSAUER®

LASTING BONDS.

3. Priming table

Key

+	Good adhesion without priming
-	No adhesion
Primer	Recommended primer

	coloured	coloured, matte
Glass	+	+
Tiles	+	+
Pine wood	+	+
Wet ground concrete	+	+
Concrete, formwork smoothness	+	+
Steel DC 04	+	+
Hot-dip galvanised steel	+	+
Stainless steel	+	+
Zinc	+	+
Aluminium	+	+
Aluminium AlMg1	+	+
Aluminium AlCuMg1	+	+
Aluminium 6016	+	+
Anodised aluminium	+	+
Brass MS 63 Hardness F 37	+	+
PVC Kömadur ES	+	Primer 100 / Primer 105
PVC soft	+	Primer 100 / Primer 105
PC Makrolon Makroform 099	+	+
Polyacrylic PMMA XT 20070 Röhm*1	Primer 40	Primer 40
Polystyrene PS Iroplast	Primer 100 / Primer 105	Primer 100 / Primer 105
ABS Metzoplast ABS 7 H	Primer 100 / Primer 105	Primer 100 / Primer 105
PET	+	+
PU waste quality	+	+
Copper	+	+
Polycarbonate	-	-
PMMA Röhm sanitary quality	Primer 100	Primer 100
Mirrors*2	-	-
Natural stone	+	+

This table is based on adhesion tests with Rocholl test specimens under laboratory conditions. In practice, the adhesive properties depend on a large number of external influences (weathering, contamination, loads, etc.). Therefore, this table is for guidance only and does not constitute a binding statement. For further information please contact our application engineering department. The tests carried out above only refer to the adhesive properties and have no significance in terms of compatibility with the stated substrates.
***1:** Different PLEXIGLAS® types exhibit certain differences in their chemical resistance. Stresses must be expected in some applications. The resulting stresses, in combination with certain agents, can lead to "stress cracking". The duration, temperature and concentration of the acting substance have a fundamental influence on any "stress cracks". When using our products in combination with PLEXIGLAS®, the suitability must therefore be checked in advance.
***2:** The compatibility with various mirror coatings by different manufacturers is regularly tested in our laboratory. Advance testing is recommended due to production processes of the various manufacturers, into which we have no insights, and as a function of the existing substrate and bonding variants.

4. Application

440 Naturstein is a specially developed silicone sealant for jointing natural stone such as marble, gneiss, porphyry, granite, terrazzo, etc. The sealant is suitable for use in joints exposed to heavy loads as well as exept the structured and matt colors, in underwater areas. Also suitable for use in kitchen areas due to the very good mechanical properties and following tests. 440 Naturstein is suitable for use in cleanrooms.

440 Naturstein

RAMSAUER®

LASTING BONDS.

5. Meets the requirements of IVD instruction sheet

No. 3-1	Construction and sealing of joints in sanitary and wet areas - Part 1: Sealing of sprayable sealants
No. 14	Sealants and mould infestation
No. 17	Perimeter joints in swimming bath/pool construction
No. 21	Elastic joint sealing in the food sector
No. 23	Sealing joints and connections to natural stone

6. Processing

General instructions: The expiry date of the material must be observed, otherwise the stated mechanical properties of the product can no longer be guaranteed. Observe the ambient temperature and substrate temperature. Mask the joint edges and ensure professional backfilling (e.g., with a suitable backer-up rod) to avoid three-point adhesion.

Pretreatment of the adhesion surfaces: the adhesion surfaces must be loadbearing, dry, and free of dust, grease, and oil. If required, carefully pretreat the adhesion surfaces using a suitable primer. Precoat the joint edges with Primer 70. Observe the flash-off time of approx. 20 minutes! In underwater areas, use Primer 160 on absorbent substrates, Primer 100 on plastics and Primer 140 on non-absorbent substrates. Primer must be applied with special caution, as there is a risk of staining on some types of natural stone in case of smears or splashes.

Joint design: For motion compensating joints, the dimensions must be designed to absorb the maximum motion expected. A minimum cross-section of 3x5 mm must be adhered to for the joint. The joint design must comply with the applicable standards and regulations.

Application of the sealant: Working within the application temperature limits, the product must be applied uniformly to the joint avoiding inclusions. If the substrate is pretreated with primer, its flash-off time must be observed. The tooling work must be completed within the stated skin formation time. When reworking, good contact with the adhesive surfaces/joint edges must be ensured (use Ramsauer Glättmittel 506 tooling agent). The applied tooling agent must always be fresh and unused. Use the tooling agent sparingly. When using tooling agents, any water streaks that have formed must be removed immediately after sealing, as visual flaws can otherwise be expected. To keep a matte surface appearance, matte colours may only be dry finished.

7. Application restrictions

Do not apply primer to the surface of the natural stone slab. Primers create stains which can only be removed mechanically (e.g., by grinding). On natural stone surfaces, 440 Naturstein must not be spread beyond the joint, as the material is difficult to remove. To avoid this, the desired joint width is usually marked with flat masking tape. In rooms where emulsion paints have been used, it is important to ensure that the coats are completely dry and have flashed off, as the sealant can discolour in combination with 440 Naturstein during grouting or sealing work indoors.

Caution: The textured and matte finishes are not suitable for underwater use.

Substrates containing tar and bitumen are unsuitable as adhesion substrates. Always avoid contact with materials containing bitumen and/or plasticisers, e.g. butyl, neoprene, EPDM, etc. Not suitable for aquarium and terrarium construction due to fungicidal content. Not approved for bonding mirrors. Heavy exposure to environmental influences, tobacco smoke, etc., can lead to discolouration of the silicone.
Cleaning agents or disinfectants containing hypochlorite (e.g., Ramsauer 503 Schimmelspray [mould spray]) must not be used for Ag+ finishing, as this can lead to visual flaws. Neutral or alkaline cleaning agents are recommended for cleaning. The disinfection of swimming baths/pools by means of various processes (e.g., chlorination; alternative processes using UV irradiation, etc.,) and the water circulation must be adjusted to suit the various pool sizes and types. The currently applicable standards and guidelines for the operation of swimming baths/pools must be observed. Incorrect disinfection and/or water circulation can result in mould growth on the joint.

440 Naturstein

RAMSAUER®

LASTING BONDS.

8. Safety instructions

Please refer to the current EC safety data sheets. Data sheets are available at any time from our website at **www.ramsauer.eu**.

9. Application notes

Good ventilation must be ensured during processing and curing. Due to the large number of possible influences during processing and application, the processor must always carry out a test processing before use. Note the expiry date of the material. 1-component sealants are not suitable for full-surface bonding. The curing speed increases with increasing coating thickness. If the 1-component material is used in coating thicknesses of more than 15 mm, please contact our application engineering department. If the products are stored and/or transported over a longer period of time (several weeks) at higher temperatures/humidity, the shelf life may be reduced or the material properties may change. During application of the **Niro** hue, the colour pigment used here can cause visual flaws, dark separating lines, etc., where two silicone layers overlap. This is not a reason for complaint, but a typical product property.

10. Liability for defects

The information, in particular the suggestions for the processing and use of our products, is based on our knowledge and experience in normal use cases at the time of printing. Depending on the specific circumstances, in particular with regard to substrates, processing and environmental conditions, the results may differ from this information. Therefore the guarantee of a work result or a liability, for whatever legal reasons, can be justified neither from these references, nor from a verbal consultation, unless we are guilty of intent or gross negligence in this respect. Ramsauer guarantees that its products comply with the technical properties specified in the technical data sheets until the expiry date.

Product users must consult the latest technical data sheet, which can be requested from us. Our current General Terms and Conditions apply, which you can download at any time from our homepage at **www.ramsauer.eu**. On publication of a new version/revision of the technical data sheet, all previous versions of the respective product lose their validity.

Ramsauer GmbH & Co KG • Alte Bundesstraße 147 • 5350 Strobl, Austria • E-Mail: office@ramsauer.eu • Tel.: +43 (0)6135 8205-0 • www.ramsauer.eu