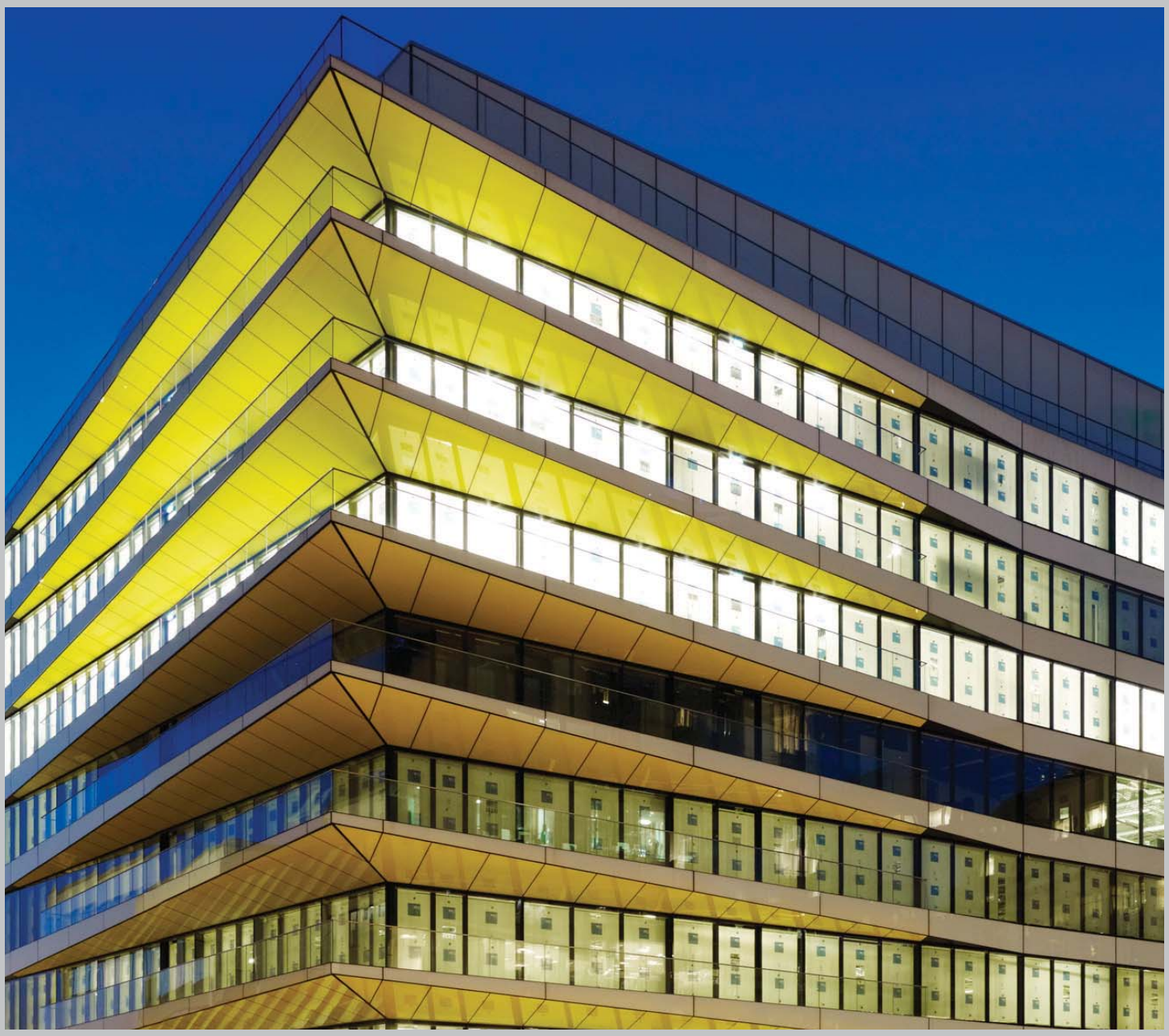


GENERAL GUIDELINES
Glass Embedding with self-levelling Polyurethane

BUILDING TRUST

CONTENTS

PURPOSE AND GENERAL INFORMATION

THIS DOCUMENT CONTAINS RECOMMENDATIONS AND HINTS FOR THE APPLICATION OF SELF-LEVELLING POLYURETHANE PRODUCTS FOR THE EMBEDDING OF GLASS PANELS. THESE GUIDELINES ARE RELEVANT FOR THE FOLLOWING PRODUCTS:

- SikaGlaze GG-735	Two part polyurethane Long open time, easy-to-use High mechanical strength, rigid embedding Minimal movement of top glass edge
- Sika Icosit KC-340/7	Twp part polyurethane Short open time, fast curing Flexible bump absorption

The information herein is offered for general guidance only. Since glass embedding is a critical application and conditions and safety requirements as well as substrates may vary greatly, the customer must grant the suitability of the construction and the products for each specific project and contact Sika for advice.

For detailed information about specific embedding products and surface pre-treatment agents please refer to the most recent Product Data Sheets and Safety Data Sheets on our website, www.sika.co.nz.

An appliction video is available on www.sika.com/ses

Picture 1: General Health and Safety Instructions

INTRODUCTION

SikaGlaze GG-735 and Sika Icosit KC-340/7 are self-levelling two-part polyurethane products suitable for embedding glass panes into a support frame (e.g. anodized aluminium, polyester powder-coated aluminium, galvanised or stainless steel) or into an appropriate grove in the concrete slab. This technique is also known as glass wall grouting. SikaGlaze GG-735 and Sika Icosit KC-340/7 cure in place after the application and fix the glass panels with minimised mechanical stress into the groove. They have proven their suitability for structural silicone glazing in many projects under various climatic conditions. This technology is also very suitable for embedding of curved glass panels (see picture 2).

Picture 2: Embedding of curved glass

DESIGN, JOINT DIMENSIONING, CONSUMPTION

1.0 DESIGN, JOINT DIMENSIONING, CONSUMPTION

Joints must be properly dimensioned as changes are complicated after construction and adhesive application, respectively. Basis for dimensioning of the necessary joint dimensions are the rheological and curing properties of the product used, the exposure of the building elements, their construction and size as well as expected external loads (impact and temperature, etc.).

- To ensure an easy injection of the grout (similar to that of liquid honey), the lateral thickness of the grout (gap between glass and U profile) should be at least 10mm.

- If embedding can only be performed from one side, a separation of 12 to 15mm is recommended, depending on the surface roughness, to allow the material to rise up on the other side.

- A clearance of approximately 10mm should be allowed for bottom grouting.

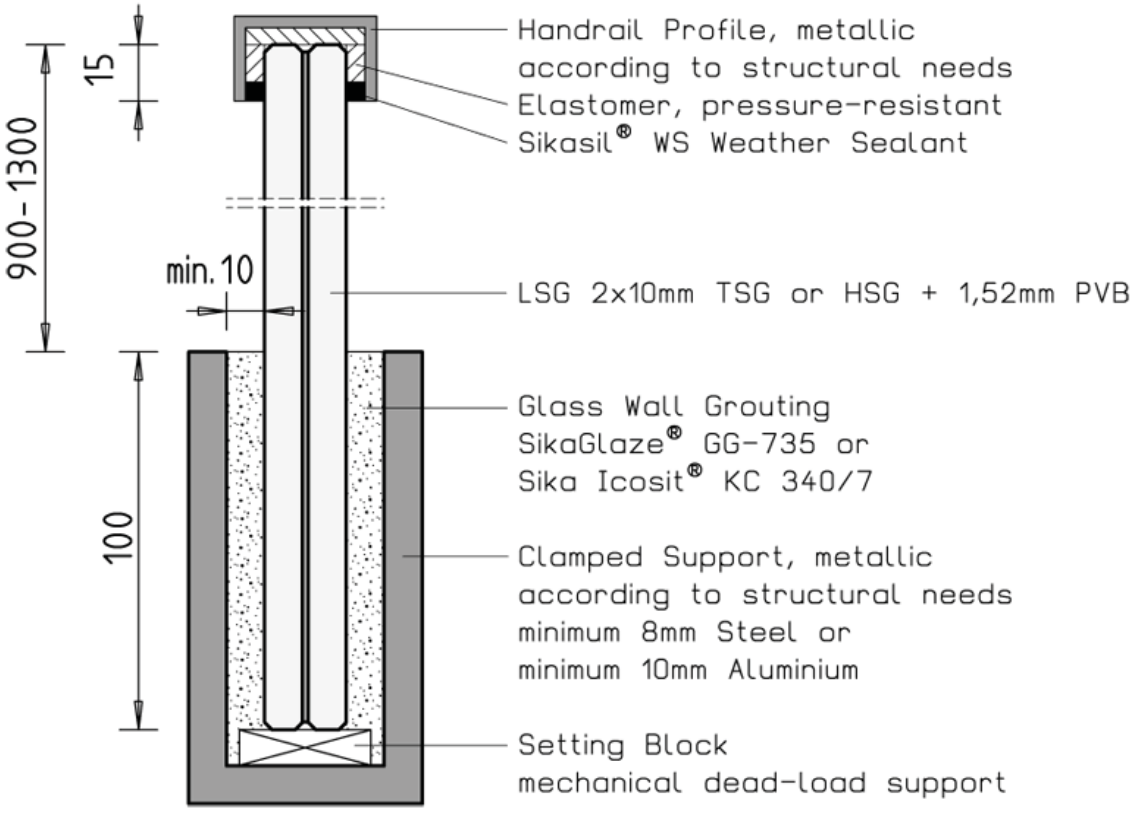
- A grout depth of more than 150mm should be avoided.

For further details see pictures 3 and 4.

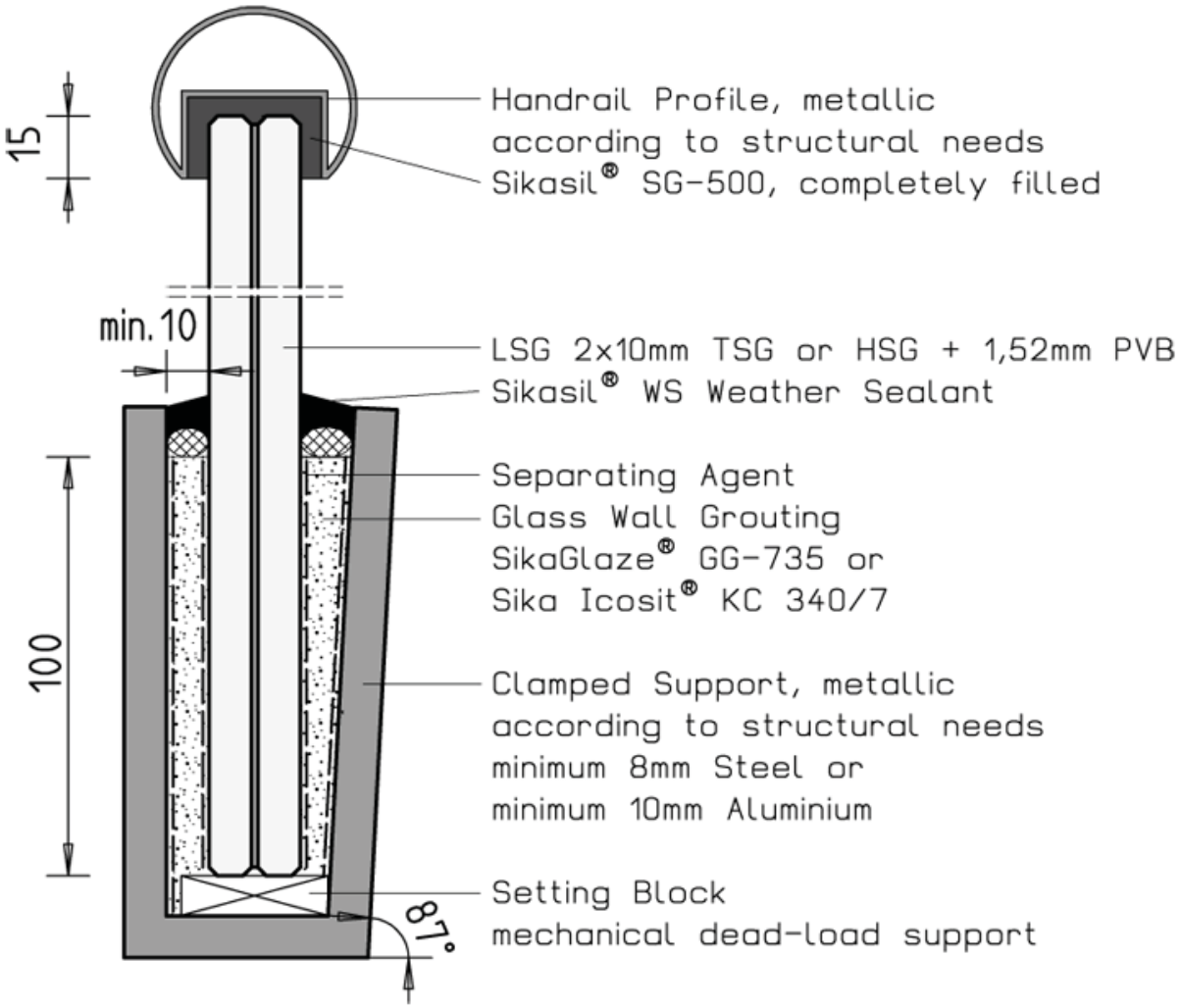
CONSUMPTION

- Clearance 10mm, filling-height 100mm [2.5 litres / running metre glass panel,

- Clearance 15mm, filling-height 150mm [5.3 litres / running metre glass panel,



Picture 3: General detail



Picture 4: Feasible modifications of handrail, U-profile, and weather sealant as UV-protection in outdoor application

Sika offers a comprehensive project service package including design reviews. For more information please contact you local Sika Technical Sales Representative.

PRODUCT PROPERTIES

SikaGlaze GG-735 · Sika Icosit KC-340/7

2.0 PRODUCT PROPERTIES

2.1 SikaGlaze GG-735

PROPERTIES	**COMPONENT A** SikaGlaze GG-735	**COMPONENT B** SikaGlaze GG-735
Chemical base	Polyols, filled	Isocyanate derivatives
Colour (CQP[1] 001-1)	Beige	Brown
Colour mixed	Beige	
Density (CQP 006-5)	1.6g/cm³ approx.	1.2g/cm³ approx.
Density mixed (calculated)	1.5g/cm³ approx.	
Mixing ratio by weight	100 : 19	
Application temperature	5 - 35°C (41 - 95°F)	
Pot-life[2] (CQP 536-3)	35 min. approx.	
Curing time before transport (20°C / 68°F)	12 hours approx.	
Shore D hardness[2] (CQP 537-2)	80 D approx.	
Shelf life (storage between 10°C and 30°C)	Twelve (12) months	Nine (9) months
Packaging	Pail 5kg Pail 25kg	Can 1kg Can 5kg

[1] CQP = Corporate Quality Procedure [2] 23°C (73°F) / 50% r.h.

2.2 Sika Icosit KC-340/7

PROPERTIES	**COMPONENT A** Sika Icosit KC-340/7	**COMPONENT B** Sika Icosit KC-340/7
Chemical base	Polyols	Isocyanate derivatives
Colour (CQP[1] 001-1)	Black	Black
Colour mixed	Black	
Density (CQP 006-5)	0.97g/cm³ approx.	1.23g/cm³ approx.
Density mixed (calculated)	1.0g/cm³ approx.	
Mixing ratio by weight	100 : 15	
Application temperature	5 - 35°C (41 - 95°F)	
Pot-life[2] (CQP 536-3)	8 min. approx.	
Tack-free time (20°C / 68°F)	2 hours approx.	
Curing time before transport (20°C / 68°F)	12 hours approx.	
Shore A hardness[2] (CQP 023-1 / ISO 868)	75 A approx.	
Shelf life (storage between 10 and 25°C)	Nine (9) months	
Packaging [3]	Cartridge 2.6kg	Can 0.4kg

[1] CQP = Corporate Quality Procedure [2] 23°C (73°F) / 50% r.h. [3] Bigger package sizes available on request

PRODUCT STORAGE AND WORKING PLACE CONDITIONS

Surface Pre-Treatment

3.0 PRODUCT STORAGE AND WORKING PLACE CONDITIONS

Product containers have to be kept between 10°C and 25°C (50 - 75°F) in a dry place. Do not expose to direct sunlight or frost. After opening of the packaging, the content must be protected against humidity. Minimum temperature during transportation is 0°C (32°F) for max. 6 hours.

The working place should be as dust-free as possible. Ideal conditions are 23°C (73°F) and 50% r.h. As these conditions are usually attainable only in laboratory, one should try to make the application conditions as close as possible. SikaGlaze GG-735 and Sika Icosit KC-340/7 may be processed within 5 - 35°C (41 - 95°F). All substrates must be stored under the same conditions (i.e. 5 - 35°C (41 - 95°F) at least 24 hours prior to the application of SikaGlaze GG-735 and Sika Icosit KC-340/7.

Due to higher viscosity at low temperatures, SikaGlaze GG-735 and Sika Icosit KC-340/7 should have a temperature of min. 15°C (60° F) during the application. Therefore both grout products should be stored at least 24 hours prior to the application at a temperature of min. 15°C (60°F).

4.0 SURFACE PRE-TREATMENT

4.1 Surface Pre-treatment Preventing Adhesion for Easy Repair Glazing

To ease glass removal in case of accidental breakage, the profile can be coated with a film of release agent, such as Sika Trennmittel-815 or Silicone Spray, before the grout is injected. This prevents the grout from adhering to the profile, so that the glass is only restrained by the profile and can be removed later on, for example with the aid of a crane.

4.2 Surface Pre-treatment, if Good Adhesion Required

If a good adhesion is requested (e.g. due to individual construction details or local regulations) the surfaces must be clean, dry and free from oil, grease and dust. Do not contaminate pre-treated surfaces during any phase of production. If contamination occurs, surfaces have to be pre-treated again.

Advice on specific pre-treatment methods based on laboratory adhesion tests will be given on request. Please note that, with the exception of clear float glass, Sika has to test the adhesion of glass grout products on project basis on production-run samples of the original materials used in the specific project. The use of the surface pre-treatment agents recommended in the laboratory report is mandatory.

In the case of adhesion to glass and U-profile the stress in the construction caused by thermal movement must be taken into consideration, based on the maximal temperature range during the service life.

PRODUCT APPLICATION

5.0 PRODUCT APPLICATION

5.1 Construction Preparation

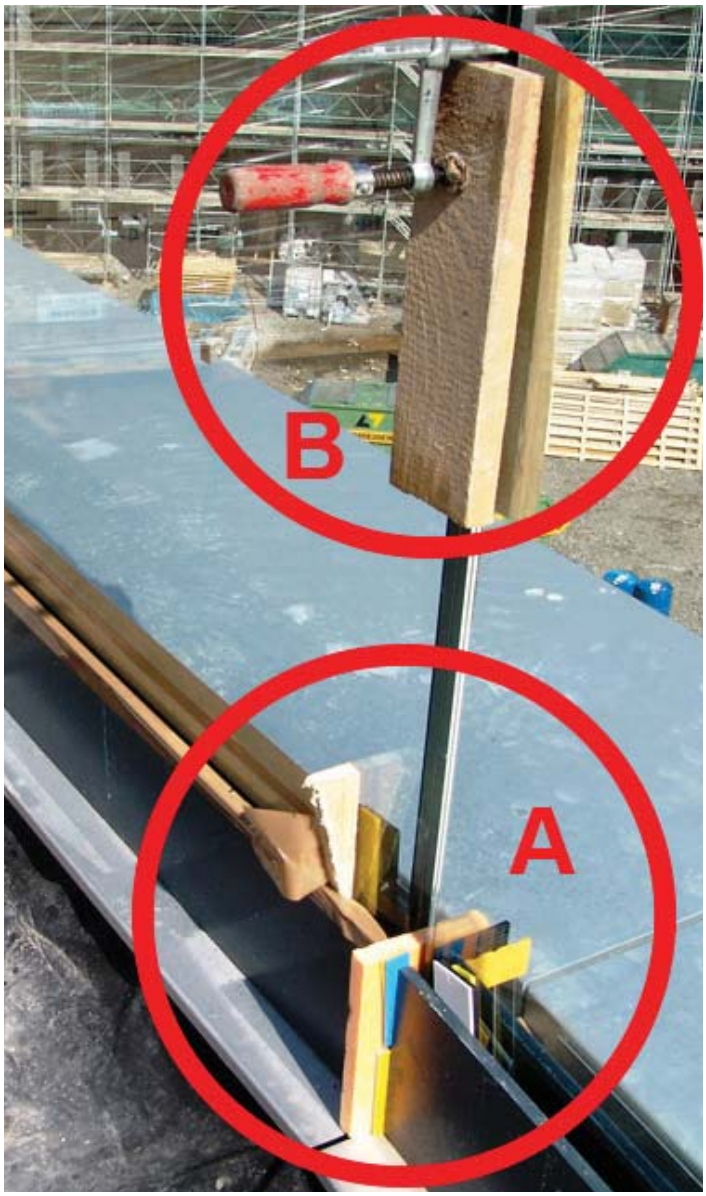
Cover the surrounding area to prevent soiling.

Before starting mixing the two components and any filling into the U-profile the masking process has to be finalized. Immediately clean soiling, since cured material can only be removed mechanically.

Align the glass, for example by placing blocks underneath and wedges along the sides.

The blocks should have at maximum the Shore hardness of the fully cured grout product (SikaGlaze GG-735: 80 Shore D; Sika Icosit KC-340/7: 75 Shore A). If setting blocks and wedges are prepared of the same material used as grout the fixing aids can stay in the construction after curing. This gives a uniform stress distribution along the glass panel.

Picture 5: Glass fixing blocks in U-channel



Picture 6: Example of preliminary glass fixation with wedges (A) and clamps (B)

5.2 Product Preparation and Application

5.2.1 SikaGlaze GG-735

Both components of SikaGlaze GG-735 are supplied in metal containers. For mixing A and B component use a suitable separate container.

- Stir the base part thoroughly before use

- Weigh base and curing component in a mixing ratio of 100:19

- Add the hardener in the given ratio

- Stir constantly, including along the base and side of the container, until a homogeneous mixture is obtained, approx. 3 min at 600 to 800 rpm, depending on temperature (the lower the temperature, the longer the mixing time). A butterfly or basket mixer is preferred but spiral mixer is also suitable.

- If possible, inject the grout on only one side of the glass and allow it to rise up on the other side on its own. This avoids air inclusions. Stir carefully with a metal rod to accelerate the levelling.

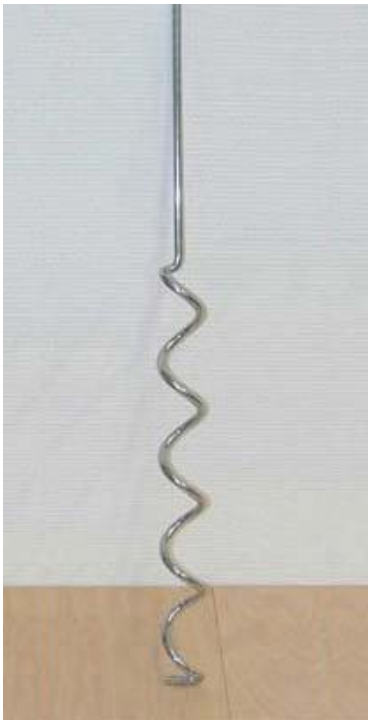
Picture 7: Mixing of SikaGlaze GG-735

Picture 8: Easy injection of SikaGlaze GG-735 by using a sloped metal sheet

5.2.2 Sika Icosit KC-340/7

Sika Icosit KC-340/7 base component is supplied in a 3-l cartridge, the corresponding amount of curing agent in a metal can. Do not tip the cartridge, as otherwise the grout may flow out uncontrollably. For mixing use the equipment offered by Sika or equivalent tools. If Sika Icosit KC-340/7 is used out of bigger containers weigh base and curing component in a mixing ratio of 100:15 by weight.

Picture 9:
Sika Icosit KC-340/7
A component in 3-l cartidge
B Component in small can



Picture 10:
Spiral mixer Type 207

Picture 11:
Cartidge stand Type 252

- Stir the A component separately until it has a smooth and homogenious consistency.

- Pour B component into the A-part cartridge.

- Stir for 60 to 90 seconds, depending on temperature (the lower the temperature, the longer the mixing time), at 600 to 800 rpm.

- Stir completely, including along the base and side of the cartridge.

- Inject the mixed grout as shown in picture 12.

- The content of the cartridge can also be pressed out manually for relatively small jobs. However, in this case the nozzle opening must be sufficiently large.

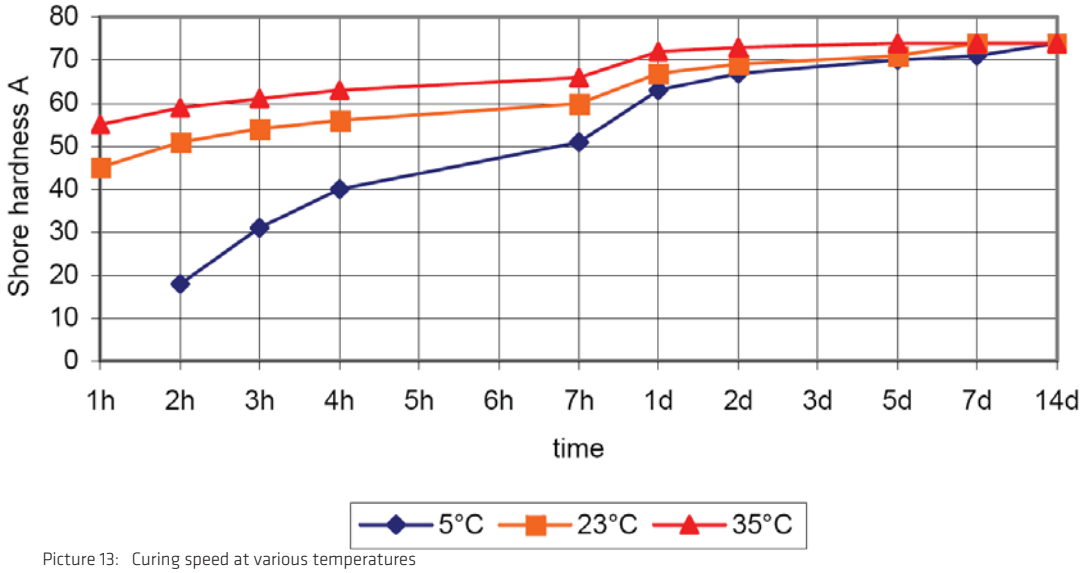
- For large glazing areas, it is recommended to work in areas of approx. 1.5m. For this purpose, standard commercial PE backer rods can be pressed between the glass and the profile to separate the individual sections.

- If possible, inject the grout on only one side of the glass and allow it to rise up on the other side on own, this avoids air inclusions.

Good worksite preparation is essential due to the short open time of the product.

Faster application is possible by pouring the grout out off the wider opening of the cartridge over a sloped metal sheet (picture 12).

Picture 12: Pouring of Sika Icosit KC 340-7



Picture 13: Curing speed at various temperatures

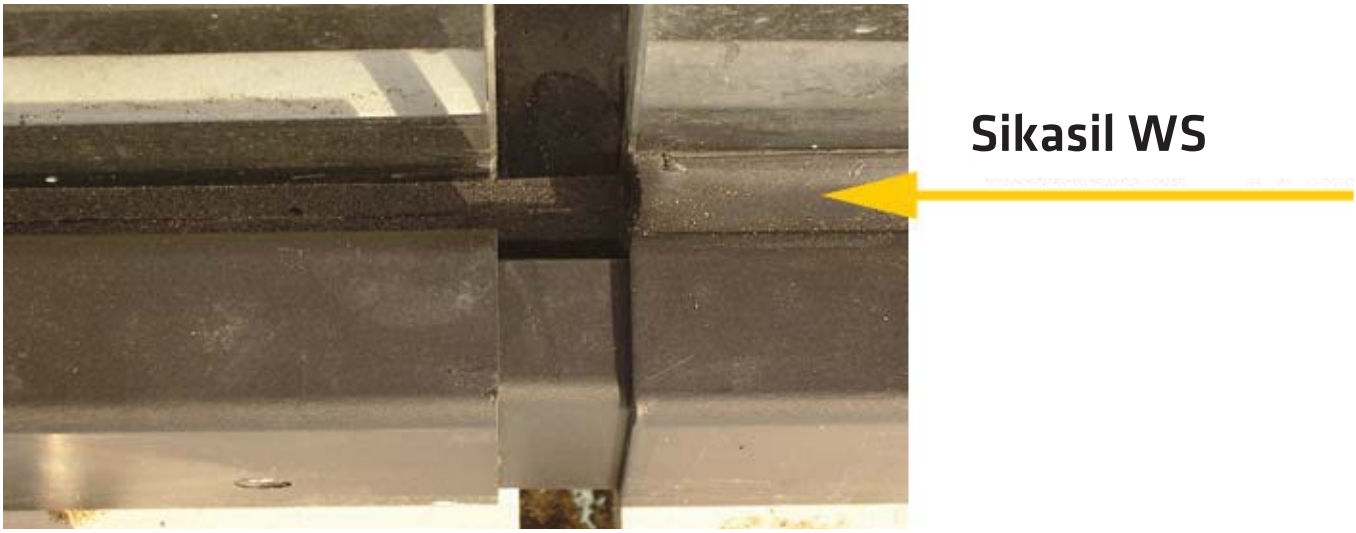
5.2.3 Removal

Uncured SikaGlaze GG-735 and Sika Icosit KC-340/7 may be removed from tools and equipment with Sika Remover-208. Once cured, the material can only be removed mechanically.

Hands and exposed skin should be cleaned immediately using a suitable industrial hand cleaner and water. Spilt grout can be immediately removed with a dry cloth or paper. Do not use solvents!

5.2.4 UV protection for outdoor application

In order to protect the PU grout against UV radiation in outdoor applications a bead of Sikasil WS must be applied on top of the fully cured grout, earliest after 24 hours (see picture 14).



Picture 14: Bead of Sikasil WS for UV protection of PU grouts

6.0 LOG BOOK DOCUMENTATION

Perfect results require carrying out each processing step perfectly. Sika therefore recommends that applicators follow the instructions of this guideline closely and install an appropriate documentation system (log book).

Following data should be recorded:

- Date and time of application.

- Ambient temperature, weather conditions.

- Name of applicator.

- Name, batch number and expiry date of grout products.

- Name of release agent, if used.

- Kind of substrate.

7.0 REPAIR GLAZING

- If the glass panel has been pretreated with a release agent prior to the injection of the grout the panel can be lifted out by a crane equipped with suckers.

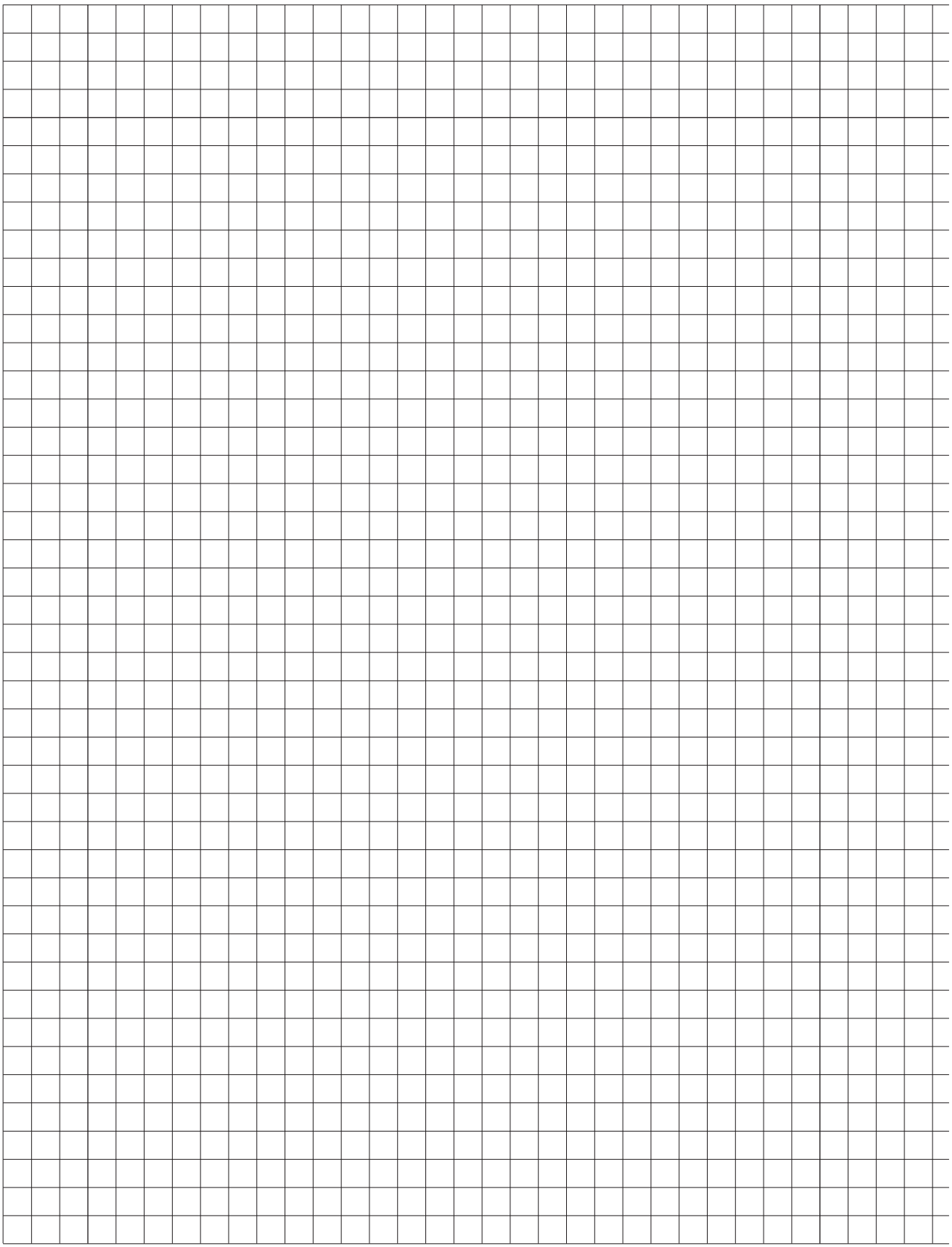
- Cut out a suitable amount of grout with a suitable tool, (vibration cutter or sharp knife). Clean the void from dust and remains of grout.

- Re-adjust the new glass panel with new setting blocks and wedges.

- Inject the grout mixed as described under point 5. Respect described workplace conditions and application temperatures.

- Only install weather sealants after the grout has cured completely. Use the sealant originally recommended by Sika for this purpose.

NOTES



LEGAL NOTES

The information contained herein and any other advice are given in good faith based on Sika's current knowledge and experience of the products when properly stored, handled and applied under normal conditions in accordance with Sika's recommendations. The information only applies to the application(s) and product(s) expressly referred to herein and is based on laboratory tests which do not replace practical tests. In case of changes in the parameters of the application, such as changes in substrates etc., or in case of a different application, consult Sika's Technical Service prior to using Sika products. The information contained herein does not relieve the user of the products from testing them for the intended application and purpose. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local Product Data Sheet for the product concerned, copies of which will be supplied on request.

WHO WE ARE

Sika AG, Switzerland, is a globally active speciality chemicals company. Sika supplies the building and construction industry as well as manufacturing industries (automotive, bus, truck, rail, solar and wind power plants, façades). Sika is a leader in processing materials used in sealing, bonding, damping, reinforcing and protecting loadbearing structures. Sika's product lines feature high quality concrete admixtures, specialty mortars, sealants and adhesives, damping and reinforcing materials, structural strengthening systems, industrial flooring as well as roofing and waterproofing systems.

Our most current General Sales Conditions shall apply.
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