

1. Product Description

StenSeal® PU JFR-NS is a polyurethane-based, single-component, cold-applied, non-sagging type joint sealant, resistant to jet fuels and chemicals. **StenSeal® PU JFR-NS**, manufactured using **Stenkim®**'s proprietary advanced polymer technology, is an elastomeric material with high abrasion resistance, strong adhesion and high chemical resistance, making it suitable for heavy traffic conditions and resistant to dynamic movement. It is completely resistant to ultraviolet radiation.

StenSeal® PU JFR-NS conforms to EN 14188-2 (Type D) and ASTM C 920 (Type S, Grade P, Class 25, Use T) specifications. Compliance with EN 14188-2 has been certified by TSE.

2. Uses

StenSeal® PU JFR-NS is specially manufactured for inclined, vertical and overhead joints. It is a versatile and economical joint sealant for inclined or vertical joints in airports, highways, parking areas, ramps, stadiums, sidewalks, fuel stations, petrochemical facilities and other industrial installations. It provides effective adhesion to both surfaces in joints between dissimilar materials. It is suitable for walls, staircases, precast panels, prefabricated structures, channels, wells, and concrete pipe connections.

3. Joint Design

Joint width must not be less than four times the expected movement or 8 mm. In joints narrower than 20 mm, the sealant depth must be equal to 80% of the joint width. For wider joints, sealant depth must be set to 16 mm.

To adjust the depth, backing material must be used inside the joint. The backer material must be placed at a depth equal to the combined sealant depth and the recess left at the surface. The calculated dimensions for some joint widths are given in the table.

For new concrete slabs, the design and filling of control joints (formed during casting or cut after casting) are also important for controlling shrinkage cracks that may occur during and after drying. It is recommended to review our technical documentation regarding joint design.

Joint Width (mm)	8	10	12	14	16	18	20	24	28	32	36
Sealant Thickness - mm	6	8	9	11	12	14	16	16	16	16	16
Sealant Recess - mm	3	4	5	6	6	7	8	8	8	8	8
Backer Rod Diameter - mm	10	13	15	18	20	23	25	30	35	40	45
Minimum Backer Rod Depth - mm	9	12	14	17	18	21	24	24	24	24	24
Consumption - meters / 14 kg	201	121	89	63	50	38	30	25	22	19	17

Single-Component, Jet-Fuel-Resistant, Cold-Applied, Non-Sag Polyurethane-Based Joint Sealant

Highlights

- Non-sagging type
- Ideal for vertical and overhead joints
- High abrasion resistance and adhesion strength
- Resistant to dynamic movement
- Resistant to jet fuels, oils, diluted acids and bases, and various chemicals
- Can be used indoors and outdoors
- Resistant to UV radiation
- Easy to use and practical



4. Application

4.1. Surface Preparation

Joint surfaces must be clean and dry. Oil, grease, bitumen, and old joint materials must be completely removed. Loose material on the joint edges must be removed; broken joint edges must be repaired.

4.2. Primer

StenSeal® PU JFR-NS can be used in new concrete joints without primer. However, primer application helps minimize the negative effects of possible contamination, concrete moisture, and loose material in all cases. Therefore, **StenAst® S** is recommended for glass and similar surfaces, and for all surfaces subject to continuous water contact.

4.3. Backer Material

A backer rod that preferably does not adhere to the sealant must be placed in the joint to achieve the sealant depth determined by the joint width. Closed-cell polyethylene foam rods (**StenBacker**) are suitable for this purpose. The diameter of the backer rod must be 10-25% larger than the joint width, and the rod must be placed tightly in the joint.

Care must be taken not to damage the backer rods during placement. In wide joints, semi-rigid materials, such as polystyrene foam, can be used instead of a backer rod. In such cases, a polyethylene tape must be placed over the backing material to prevent the sealant from adhering to it.

4.4. Application

The amount of sealant that can be used within the pot life must be determined according to the application area and the capacity of the application equipment. The material must be used within the pot life after the package is opened. Under no circumstances should any solvent be used to thin sealant that has exceeded its pot life.

Material that has exceeded its pot life must not be used. After opening the package, the product is homogenized and loaded into a piston-type sealant gun. For tube packages, cut open the tip of the package and place the package in the applicator.

Fit the applicator with a nozzle narrow enough to enter the joint. During application, advance the nozzle tip by sliding it over the backing material in the joint. This ensures that no gap remains beneath the sealant and that a sufficient amount of sealant is applied.

After application, the sealant surface must be smoothed with a spatula. It is recommended to tape both sides of the joint before application, especially where decorative appearance is important. In this way, material that gets onto the area outside the joint during application is removed by pulling off the tape after application.

4.5. Restrictions

It is not recommended for joints narrower than 8 mm. Not suitable for dirty, oily, bituminous, or wet joints. Cleaning such joints before application is important for ensuring good adhesion.

StenSeal® PU JFR-NS is affected by water before curing, like all other polyurethane-based materials. Therefore, the joints must be dry and the sealant must not contact water until chemical curing occurs. Although the surface has high load-bearing capacity, studded tires, snow chains and stiletto heels may damage it.

During application, ambient temperature must not exceed 35 °C or fall below 5 °C. If application under conditions outside this range is necessary, contact **Stenkim®**.



4.6. Application Tools

Use of professional-quality equipment is recommended.

4.7. Cleaning

Equipment and any other tools contaminated with sealant must be cleaned before the sealant cures. For that purpose, tools must first be wiped with a cloth or rag and then cleaned with **StenSolver CL** or aromatic solvents such as toluene and xylene.

5. Safety

Applicators and supervisors must read the Safety Data Sheet (SDS) carefully and follow the instructions provided. Emptied packages must be disposed of in compliance with relevant regulations and laws. The application must be carried out by skilled workers under the supervision of experts and the applicators must use all personal protective equipment required for the worksite and the task such as goggles, mask and gloves.

6. Storage

The material must be kept in dry indoor storage. The recommended storage temperature is 10-25 °C. Under these conditions, the material will retain its properties in unopened containers for 12 months from the production date.

7. Disclaimer

This document is provided for general information and is based on **Stenkim®**'s laboratory data and field experience at the time of publication. **Stenkim®** reserves the right to revise this information without prior notice.

Stenkim® warrants that its products conform to the stated specifications on delivery. The buyer is responsible for determining the product's suitability for the intended purpose and for all conditions of transport, storage, application, and use. **Stenkim®** accepts no liability for results obtained under conditions outside its control. **Stenkim®**'s liability under this warranty is limited to replacement of non-conforming product and excludes any consequential or indirect damages.



8. Technical Data

Property	Method	Result
Base Polymer		Single-Component Polyurethane
Solids Content (by weight)		99%
Color		Catalog
Density		1.45 ± 0.10 g/cm ³
Movement Class	In extension	25%
Movement Class	In compression	25%
Elongation at Break		> 650%
Hardness (Shore)	EN ISO 868	A15-25
Elastic Recovery	EN 14188-2	>90%
Adhesion and Cohesion Properties	EN 14188-2	No Damage
Hydrolysis Resistance	EN 14188-2	Pass
Skin Formation Time @23 °C, 50% RH	EN 14188-2	2 hours
Cure Rate @23 °C, 50% RH		3 mm / 24 hours
Time to Open to Heavy Traffic @20 °C		2 days
Change in Mass and Volume After Liquid Fuel Immersion (JET A-1)	EN 14188-2	Pass
Change in Mass and Volume After Antifreeze Immersion	EN 14188-2	Pass
Change in Adhesion and Cohesion After Liquid Immersion (JET A-1)	EN 14188-2	Pass
Change in Adhesion and Cohesion After Liquid Immersion (Antifreeze)	EN 14188-2	Pass
Shelf Life		1 year
Packaging		14 kg cans and 600 ml tubes
Related Standards		ASTM C 920, EN 14188-2, EN ISO 11600

Stenkim® reserves the right to make changes to the values in this table at any time.

