

1. Product Description

StenSeal® PU JFR is a single-component, cold-applied, polyurethane-based, jet fuel and chemical resistant joint sealant. **StenSeal® PU JFR**, manufactured using **Stenkim®**'s proprietary advanced polymer technology, is an elastomeric, highly wear-resistant, excellent adhesive strength material with outstanding chemical resistance, making it suitable for heavy traffic conditions and resistant to dynamic movement. **StenSeal® PU JFR** is resistant to jet exhaust, jet fuels, hydraulic fluids and oils.

It is completely resistant to ultraviolet radiation. **StenSeal® PU JFR** 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 is designed for airport runways, parking areas, terminals, ramps, cargo areas, and service roads. It is also a versatile and economical joint sealant for highways exposed to all types of traffic, parking areas, secondary roads, bridge connections, ramps, stadiums, industrial floors, pavements, fuel stations, and road and concrete areas in petrochemical and other industrial facilities. It is suitable for all types of outdoor horizontal joints.

3. Joint Design

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

For adjusting depth, a backer rod must be used inside the joint. Backer material must be placed at the calculated total joint and recess depth. 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 curing. 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 - metres / 14 kg	196	117	87	61	49	37	29	24	21	18	16

Single-Component, Jet Fuel Resistant, Polyurethane Sealant

Highlights

- Polyurethane-based, single-component
- Cold-applied
- Self-leveling
- Very 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 sealant residues must be completely removed. Loose materials on the joint walls must be removed; broken joint walls must be repaired.

4.2. Primer

StenSeal® PU JFR 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 plastic, 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 rod must be 10-25% larger than the joint width, and the rod must be placed tightly in the joint.

Rods must not be damaged 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 adhesion to the sealant.

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. Fit a nozzle narrow enough to enter the joint to the applicator.

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 self-levels and generally does not require additional finishing.

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. Repairing cracks and ensuring watertightness is especially important on concrete pavements at airports and highways.

StenSeal® PU JFR can also be used for these purposes. In general, routing a groove at least 10 mm deep and 6 mm wide is recommended. Saw-cut repair is sufficient where cracks are infrequent.

In areas with severe cracking, coating is recommended for narrow cracks and combined sealing for wide cracks.

4.5. Restrictions

It is not recommended for joints narrower than 5 mm. Not suitable for dirty, oily, bituminous, or wet joints. Cleaning such joints before application is important for ensuring good adhesion.

StenSeal® PU JFR 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. Despite its high load-bearing resistance, studded tires, ice chains, and spiked heels may cause damage.



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.

5. Cleaning

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

6. Safety

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

7. Storage

The material must be kept in dry indoor storage. Recommended storage temperature is 5-35 °C. Under these conditions, the material will retain its properties in unopened containers for 12 months from the production date.

8. Disclaimer

This document is provided for general information and reflects **Stenkim®**'s laboratory data and field experience at the time of publication. **Stenkim®** reserves the right to revise this information at any time without 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 application and for all conditions of transport, storage, handling, 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.



9. Technical Data

Property	Method	Result
Base Polymer		Single-Component Polyurethane
Solid Content		99
Color		Catalog
Density		1.49 ± 0.10 g/cm ³
Movement Class	In extension	25%
Movement Class	In contraction	25%
Elongation at Break		> 650%
Hardness (Shore)	EN ISO 48-4	A15-25
Resilience	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
Rate of Cure @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 Liquid Fuel Immersion (Antifreeze)	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 sausage-type packages
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.

