# StenSeal® ASR

## 1. Product Description

**StenSeal® ASR** is a hot-applied crack repair and joint sealant, composed of modified asphalt, polymers, plasticizers and fillers. It has high cold elasticity and resilience. It allows heavy traffic shortly after application.

It is designed for filling cracks, canals and joints in asphalt pavements, and concrete-asphalt joints.

**Asphalt-Polymer-Based Hot-Applied Joint and Crack Sealant**

### Highlights

- Asphalt-polymer-based hot-applied
- Ready-to-use
- Maintains its elasticity even at very low temperatures; does not get brittle, crack or fracture
- Hardens quickly and withstands heavy traffic shortly after application
- Used for sealing joints and repairing cracks in asphalt pavements

## 2. Uses

**StenSeal® ASR** can be used for repairing cracks and small sized broken surfaces, sealing cable canals and joints at any kind of asphalt surface. It is suitable for infrastructures that are not in contact with solvents and fuels, as it does not allow microbiological contamination and is elastic. It can also be used in concrete pavements and concrete-asphalt joints.

It is preferred in places exposed to continuous water contact such as water channels, dams, hydroelectric power plants.

## 3. Joint Design

Joint width must not be less than eight times the expected movement or 10 mm. Up to 15 mm width, joint sealant depth must be equal to the width. Between 15-30 mm joint widths, sealant depth must be equal to 80% of the width.

For wider joints, sealant depth must be set to 30 mm. For adjusting depth, a backer rod must be used inside the joint. 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. For dynamic cracks in asphalt and concrete pavements, it is recommended to saw the cracks in horizontal lines. For static cracks, joints and minor repairs, the application depth should be greater than the width or 4 mm; if not, it should be cut to reach the appropriate dimension.

## 4. 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.

## 5. Backer Material

To achieve the sealant depth determined by the joint width, a heat-resistant material that preferably does not adhere to the sealant must be placed in the joint. Flax or PP rope is suitable for this purpose. Diameter of the rope must be 5-10% larger than the joint width; the rope must be pressed tight into the joint.

Dried sand can be used in areas with no risk of freezing and low joint movement. In such cases, it is helpful to place a paper tape over the backer material to prevent adhesion to the sealant.

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## 6. Heating

**StenSeal® ASR** must be melted in a pot with mixer and temperature-controlled oil jacket. Material poured in the melting pot must be homogeneously heated and mixed. The mixture is heated to 160-170 °C and these temperatures are maintained during application.

Mixing should be carried out at low rpm and contact of hot material with air should be kept to a minimum. The temperature of oil in the jacket should never exceed 200 °C. Higher oil temperatures may damage the material due to local overheating.

## 7. Application

Melted material must be poured hot into the joint or crack. In large-scale applications, the use of pumping systems equipped with a heated steel hose is recommended. Especially in cold weather, it is recommended to heat the surfaces with an LPG burner or an electric blower and to apply **StenSeal® ASR** in the hot joint or crack for better adhesion.

If the slope of the ground is higher than 2%, it is useful to place barrier rods perpendicular to the joint at certain intervals to prevent flow. Application must not be carried out at temperatures below 10 °C and in extremely windy or rainy weather. For dynamic cracks, routing a groove at least 10 mm deep and 10 mm wide is recommended.

These kinds of cracks should be filled like joints. Repair by routing alone is sufficient at places where the cracks are infrequent. In areas with severe cracking, coating is recommended for narrow cracks and combined sealing for wide cracks.

The width of the static joints and cracks in asphalt is not so important. As long as the application depth is at least the crack width, these cracks can be repaired without widening and without opening a groove. However, to ensure the exact depth and surface cleanliness, opening a groove is beneficial.

## 8. Application Tools

Use of professional-quality equipment is recommended. Application equipment can be cleaned with hot water after work is completed.

## 9. 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 aliphatic solvents such as white spirit, kerosene and diesel fuel. These solvents are flammable, so they should not be used with hot equipment or near open flames.

Equipment cleaning with solvents should be done after the equipment has completely cooled down.

## 10. Restrictions

Not recommended for joints narrower than 10 mm. Not used on dirty, oily and wet surfaces. Cleaning such joints before application is important for ensuring good adhesion.

Despite its high load-bearing resistance, studded tires, ice chains, and spiked heels may cause damage. During application, ambient temperature should not be below 10 °C or the dew point. If application under conditions outside this range is necessary, contact **Stenkim®**.

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## 11. Safety

Required safety measures must be observed during the application of the material and the applicators must use protective clothing, gloves and goggles. 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.

## 12. Storage

Shelf life is 1 year without opening the package. Products must be stored at +10 °C to +25 °C in closed conditions protected from direct sunlight.

## 13. 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.

## 14. Technical Data

| Property | Method | Result |
|---|---|---|
| Base Polymer | | Styrene Butadiene Block Copolymer |
| Color | | Black |
| Density | EN ISO 2811-2 | 1.2 ± 0.1 g/cm$^3$ |
| Movement Class | | 25% |
| Hardness (Shore) | EN ISO 868 | A20-40 |
| Maximum Heating Temperature | | 170 °C |
| Penetration | ASTM D 5329 | 1.5 ± 0.5 mm |
| Bond | ASTM D 5329 | Pass |
| Flow | ASTM D 5329 | 1.8 ± 0.5 mm |
| Rebound | ASTM D 5329 | > 80% |
| Asphalt Compatibility | ASTM D 5329 | Pass |
| Shelf Life | | 1 year |
| Packaging | | 12 kg plastic packages |

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

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