

## MEMO

BUILDING TRUST



**TO** whom it may concern

**FROM** Reto Gränicher

**PAGES** 1/2

**DATE** July 10, 2023

## Sarnafil® AT FSH SELF-HEALING - FACT SHEET

### 1. Experience of test areas since spring 2021

Since spring 2021, we have carried out tests with damage to the waterproofing membrane on different roof surfaces and documented them. Partially with and without installed monitoring sensor technology, all test areas showed no leaks or irregularities.

### 2. Structure and function of the membrane

The Sarnafil® AT FSH or Sarnafil® AT FSH SA membrane is a 1.8 mm thick Sarnafil® AT carrier membrane with a superabsorbent non-woven layer that can absorb water quickly. Due to the absorption of moisture and the immediate swelling of the superabsorbers in the form of a "hydrogel", waterproofing is ensured in the event of minor damage or perforations as long as the damp condition persists on the sheet. When the surface dries, so does the hydrogel until moisture/water contact recurs its swelling.

### 3. Use of superabsorbers, which are well established in daily life

The technology used is similar to the baby nappies known to everyone; colloquially known as "Pampers nappies". Superabsorbers are plastics that are capable of absorbing many times their own weight in polar liquids. These are mainly water or aqueous solutions. When absorbing the liquid, the superabsorbent swells in the fleece and forms a hydrogel, which has a sealing function. In contrast to pampers, the unique technology in the superabsorbent non-woven layer prevents the water from spreading laterally. Limited damages or perforations hence only cause small wet spots in the felt.

### 4. Explanation of leakage cycles / current findings

The superabsorbers used, which are bound in the fleece fibers, have an almost unlimited and often reproducible functional capability of approx. 10,000 cycles. This corresponds to approx. 67 years for one cycle (fleece backside dry -> wet -> dry), if one assumes that the cycle takes place once per rainy day in North of Spain with an average of 150 rainy days per year. Since drying times of two days were the rule in some of our tests, this even corresponds to twice the time of our calculations.

### 5. Info on exclusivity

Sika has the manufacturer's exclusivity for roof applications for the above-mentioned sheet variants!

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PAGES 2/2  
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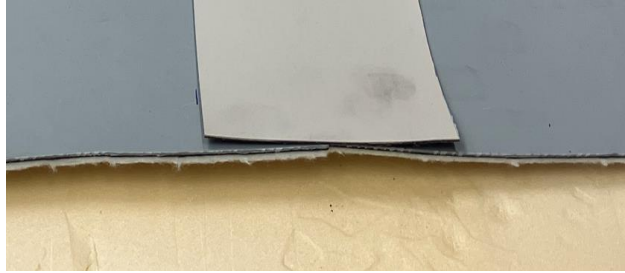
### 6. Application detailing (overlaps, butt joint, etc.)

In order to ensure the functional suitability of seam overlaps (Fig. 1) as well as joint areas (Fig. 2), a continuous fleece backing with a maximum tolerance of one centimeter (Fig. 3) must be maintained.

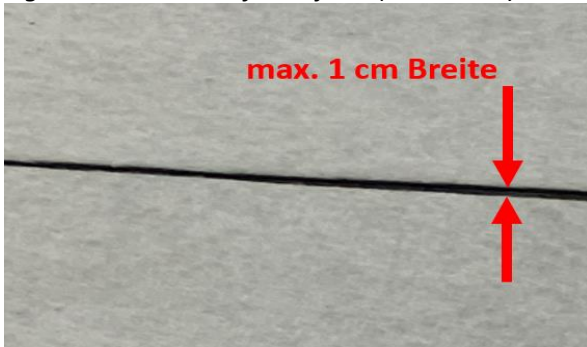
*Figure 1 (overlap)*



*Figure 2 (butt joint)*



*Figure 3 Tolerance of butt joint (max. 1 cm)*



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