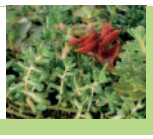
SIG DESIGN TECHNOLOGY

A solid foundation for green roofs.

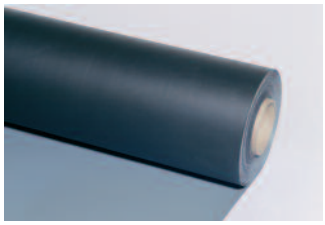
Roofing membranes

He who sows on Rhepanol® hg, will reap enormous benefits.



The youngest offspring of a leading roofing membrane system: Rhepanol hg

Actually, there should be no need to introduce Rhepanol. This name speaks for itself and more than 80 million square metres of roof area, over a period of 40 years is overwhelming evidence! So far there has been just one type – Rhepanol fk. But now our roofing membrane familiy is extended – providing even "more possibilities per square metre". The new member is **Rhepanol hg.** This membrane is far more than just another good reason to rely on the know-how and the established quality of FDT when waterproofing flat roofs. **Rhepanol hg** is the perfect solution for every kind of "green" roof – intensive or extensive, or landscaped, to your own demands. Wheather for new buildings or refurbishment projects.



Rhepanol hg.
Roof sealing and root penetration protection in one single membrane.

Specially designed for ever growing demands

What is so special about **Rhepanol hg?** Well it is designed to meet the criteria laid out in the FLL Guideline for resistance to root penetration. As to its ingredients, this roofing membrane is also based on the long-term proven material polyisobutylene (PIB) according to DIN 16731, as has already been the case with Rhepanol fk for 30 years. The difference, however, why progressing and even persistently boring root systems will despair of **Rhepanol hg,** lies elsewhere. **Rhepanol hg** is optimised in terms of resistance to root penetration and hot air welding characteristics. That is why the seams are also absolutely resistant to root penetration without any further sealing. And this is exactly what the **"h"** stands for in the name. The **"g"** means the stabilisation of the roofing membrane by the central glass fleece reinforcement.

QUICK-CHECK

- **Based on PIB (polyisobutylen)**
- **Root resistant according to the FLL Guideline**
- **Hot air weldable**
- **Dimensionally stable due to the glass fleece reinforcement**
- **For intensive, extensive and landscaped green roofs**
- **Ideal for new buildings - and perfect for roof refurbishment, because of its compatibility with bitumen**
- **Membrane width: 2.05 m**
- **Colour: grey**

Making history with Rhepanol® hg.
As a green roof on a state cultural monument,
the Villa Windstoßer.

Georg Frick:
"You can tell that this is an FDT system, **Rhepanol hg** *is easy to handle and the hot air welded seams are secure and totally reliable, immediatly!"*

VILLA WINDSTOSSER, STUTTGART

- 2004: refurbishment of the state cultural monument
- System: Rhepanol hg
- Solution: loosely laid with vegetation as ballast
- Green roof area: 400 m² (extensive/intensive)
- Architect: Prof. Hans-Werner Krause, Stuttgart
- Applicator: Frick, Weissach
- Photo: Ludwig Windstoßer, municipal archives Stuttgart

What is a green roof to expect from Rhepanol® hg?

A long and carefree life.

Meeting the demands for green roofs with Rhepanol hg

With **Rhepanol hg,** designers, landscape architects and installers find even more benefits from the Rhepanol quality mark. This solution meets the demands of our times. Principals, investors and house owners are ever more eager to have green roof areas. Along with aesthetic and ecological advantages, a green roof is a convincing alternative in particular with respect to economic aspects. So it is no longer a secret, but rather common understanding that planted roof coverings have a significantly longer service life due to the protection against UV radiation, temperature extremes, hailstorms and encrustation.

Easy application of **Rhepanol hg** *by hot air welding, without any further sealing.*

Systematically utilising the root resistance of Rhepanol hg

Rhepanol hg forms the basis for a long-term irreproachable maintenance of the roof area. The arithmetics are simple: the high longevity which is characteristic for all Rhepanol products anyway, plus the root resistance of **Rhepanol hg,** plus the life prolonging properties of a professionally installed vegetation layer, will make customer satisfaction a timeless feature. And just as plausible as this flat roof mathematics is the constantly high quality of **Rhepanol hg,** which is in particular underlined by these two certificates.

Considering the experts recommendations

MPA Darmstadt

No. 1: The General Building Construction Supervision Test Certificate of the State Material Testing Institute (MPA) Darmstadt according to DIN 16731.

No. 2: Certificate of the C.A.U. GmbH for an outstanding ecological profile according to DIN EN ISO 14040 ff. within a life cycle assessment.

Rhepanol hg *used as a base for an extensive green roof.*

Rhepanol hg keeps roots, rhizomes and their buddies at bay

With **Rhepanol hg** as a sealing under the vegetation ballast, the space for development of the flora is clearly limited. Where the roofing membrane ends, i.e. at the upper edge, as far as the vegetation is concerned the protection against root penetration starts. This means "So far and no further!". For extensive vegetation like moss and sedum, or grass and herb variations, as well as for vegetation mats of plants needing more care like lawns, perennials, bushes, shrubs or even trees. **Rhepanol hg** will not surrender.

Even more: Rhepanol hg incorporates the best qualities

This positive "repelling behaviour" of **Rhepanol hg** does not loose its effectiveness even in contact with water. The hot air welded seam area is 100% watertight. The fact that the roofing membrane remains unaffected by external influences, is due to its robust constitution. It is sustained, for example, by a balanced ratio of tensile strength and elongation. Owing to the high flexibility the covering and the seams are almost free from tensions. A similar advantage is provided by the very good perforation resistance, providing protection against impact loads, in particular during the application. All this, in combination with flexibility at extremely low temperature and the resistance to UV-radiation and hailstorms, results in outstanding performance.

QUICK-CHECK

- **Loose laying with vegetation as ballast**
- **Outstanding ecological profile: free from plasticizers, halogen fire proofing agents and heavy metals**
- **Highly resistant to perforation**
- **Flexible at temperatures as low as –60 °C**
- **Hail-resistant according to DIN EN 13583**
- **Permanently resistant to UV-radiation**
- **Compatible with all kinds of insulation materials and resistant to polystyrene**
- **No fire hazard from open flames**
- **Compatible for application with Rhepanol fk and self-sealing edge**

Rhepanol® hg.

Complete protection against root penetration.

No understatement – with **Rhepanol hg** *the only growth is – upward.*

Rhepanol hg – the only base to build on! Simple and reliable.

Loosely laid with ballast.

The layer build-up may vary for different green roofs. Most preferably, however, **Rhepanol hg** should be an integral part of it. Just as you can see in the photo on the right. As a first layer on the supporting deck, the FDT vapour control layer fk. The next layer provides the thermal insulation (e.g. PU or PIR). Due to the compatibility of **Rhepanol hg** with most forms of insulation, the roofing membrane can be rolled out directly onto it – without a separation layer. Next, the drainage layer is installed for the protection, the storing and draining of water. The last but one layer is a rot-proof synthetic fleece serving as a filter and preventing substrate particles from soiling the drainage layer. On top of the layer build-up you will have the vegetation substrate with the plants growing on it.

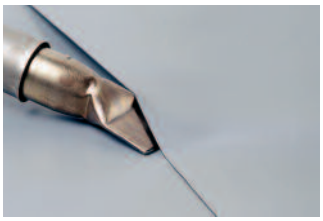
The layers from the top to the bottom:

- Vegetation
- Vegetation substrate
- Synthetic fleece
- Drainage layer
- Rhepanol hg
- Thermal insulation layer
- FDT vapour control layer fk

Seamlessly watertight:
Rhepanol hg provides reliable protection against root penetration!

Hot air welded.

In practice, when unrolling the membrane the edges overlap by five centimetres. The membrane seams are heated with a handheld hot air welder or a welding machine and homogeneously fused together with a pressure roller. The glass fleece reinforcement sustains the shape and consistency of the material throughout the welding process. The effect is most desirable: The membranes melt into an inseparable connection which withstands any intrusion.



Also easily integrated:
Rhepanol hg with Rhepanol fk and self-sealing edge system

In the situation that the design concept means a combination of planted and exposed, or "non-green" roof areas, on the same building, a combination of both forms of the Rhepanol system is no problem! The traditional self-sealing edge of the "fk" membrane will form a perfect joint with the new "hg" membrane. There is even no need for constructional separation in the connecting areas.

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