

## **GEROtherm® REX**

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Complete diffusion-tight geothermal probe with protective layer

## GEROthem® REX

### The completely diffusion-tight geothermal probe with protective layer

The GEROthem® REX geothermal probe prevents the penetration of gaseous substances into the heat transfer medium. This in turn assures proper operation of the heat pump and protects it from damage due to outgassing.

#### Product

The core pipe, which carries the medium, is made from state-of-the-art, crack-resistant PE100-RC and is certified to SKZ HR3.26. The pipe's diffusion resistance is achieved by using a polymer-matrix film with an integral diffusion barrier. It also features a scratch-resistant protective layer for mechanical protection (Image 1). The diffusion barrier on the proven HakaGerodur probe foot is provided by a vapour-deposited metal layer. The multilayer structure is protected by a top coat (silvery). The geothermal probe is compatible with the products from the GEROthem® system range and guarantees long durability on account of its good corrosion and chemical resistance. This innovation is patented; Patent No. EU 3 450 878.

#### EWS foot (U-bend) measurements

The Innoform testing institute in Oldenburg was commissioned to carry out permeation tests on a HakaGerodur EWS baffle (Image 2) with permeation barrier layer. The results (Image 3) show that permeation is 10 times lower than with uncoated EWS baffles.

#### REX pipe measurements

On behalf of Gerodur MPM Kunststoffverarbeitung GmbH & Co. KG, Neustadt in Sachsen, a GEROfit REX pipe (PE100-RC with permeation barrier layer) was examined by DBI Gas- und Umwelttechnik GmbH. In the series of measurements (Image 4), no permeation could be detected through the GEROfit REX pipe (PE100-RC with permeation barrier layer).

#### SIA 384/6

A diffusion resistance value is considered to be a weighted value over the probe foot with 20 m of probe pipes and additionally the proportional length of any transition pipes with  $<0.50 \text{ cm}^3/(1 \text{ m}^2 \cdot d \cdot 1.0 \text{ bar})$  ( $d = \text{day}$ ).

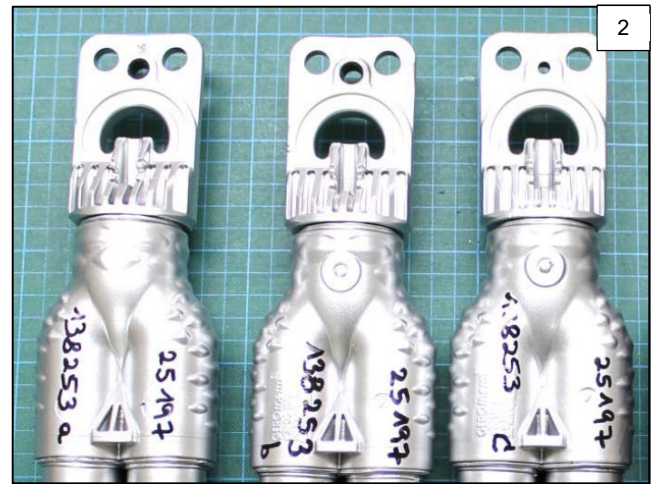
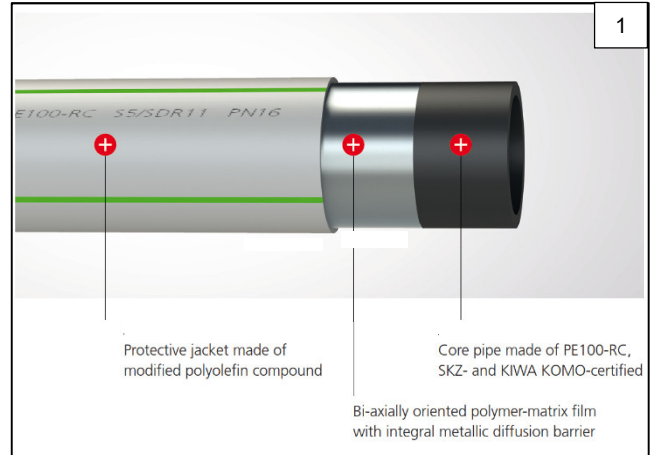


Image 2: EWS baffle with barrier coating

Innoform sample No. Description/designation according to client	with air = approx. 21% O <sub>2</sub> measured value [cm <sup>3</sup> /(test item * d * 0.21 bar)]	to 100% O <sub>2</sub> calculated value [cm <sup>3</sup> /(test item * d * 1.0 bar)]
138253a (HDPE sample pipe with EWS baffle and barrier coating)	0.018	0.086
138253b (HDPE sample pipe with EWS baffle and barrier coating)	0.016	0.077
138253c (HDPE sample pipe with EWS baffle and barrier coating)	0.013	0.062

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