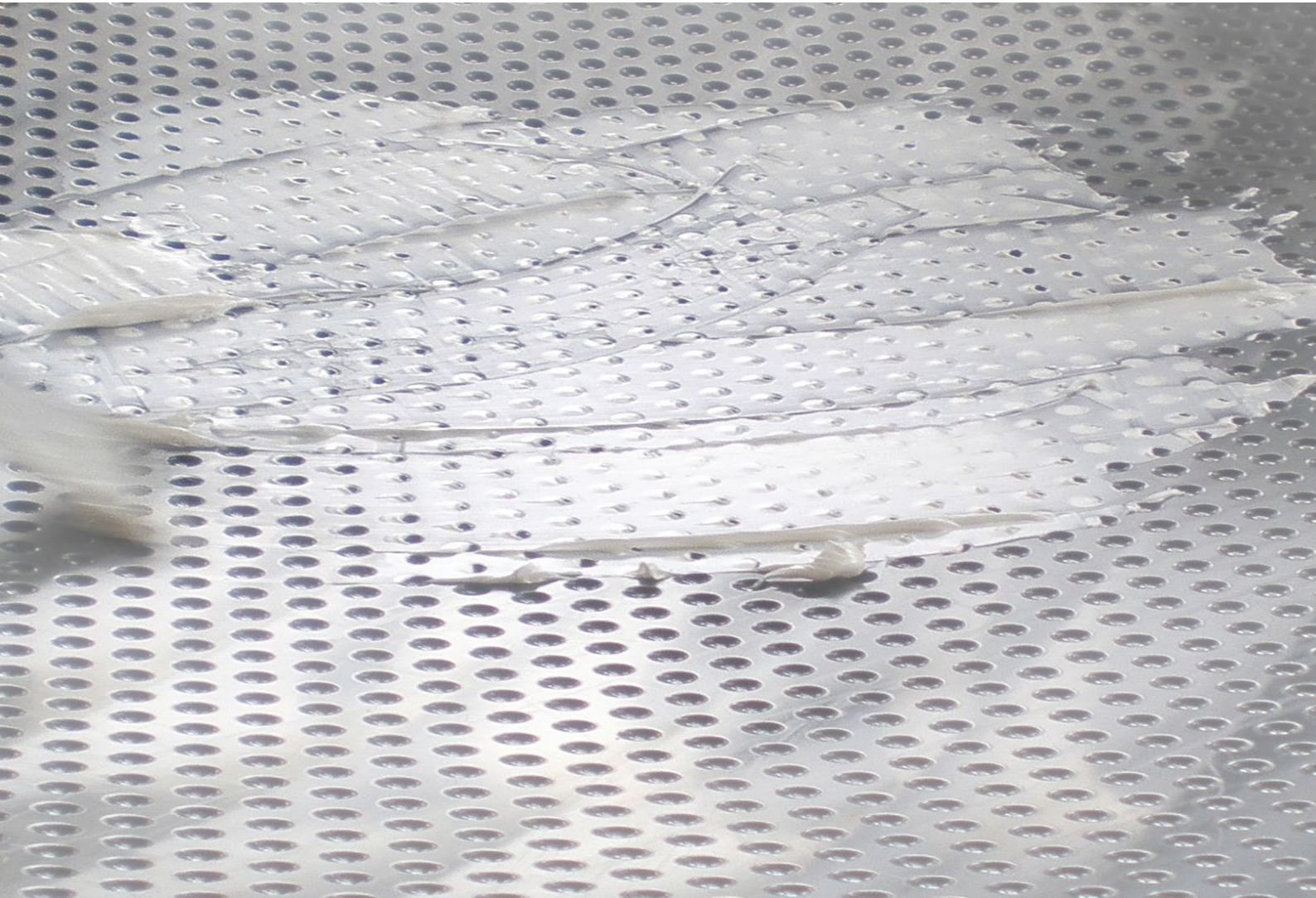




Structural bearings

Infrastructure | Buildings | Industrial structures

mageba high-performance sliding material for maximised durability



ROBO®SLIDE 75

durable, compact, PFAS free



mageba



Superior sliding material for demanding requirements

Introduction

Bearings are constantly exposed to daily movements caused by temperature, ever increasing traffic and other loads. In addition, the structures themselves become larger and more complex. These conditions ask for a sliding material with high strength and minimum wear.

PTFE¹ has been the standard sliding material for many decades. Whilst performing well in terms of sliding friction coefficients, there are **3 disadvantages of PTFE**:

- It's **high wear** compromises the durability of the overall product.
- Pure PTFE is clearly inferior to UHMWPE² in terms of **strength**.
- PTFE is a so-called **PFAS**³ which does not self-degrade but persists practically forever. In fact a ban of these "eternal chemicals" by the European Union is in preparation.

mageba's solution

To counteract these disadvantages, mageba has been using UHMWPE for years and is now going one step further in terms of strength and durability with the newest generation ROBO®SLIDE 75.

The well-proven system of small reservoirs (so-called dimples as shown on the front page) provides a permanent supply of silicone grease, thereby ensuring high durability and low sliding friction.

Testing

Extensive testing has been carried out by the independent Materials Testing Institute (MPA) of the Karlsruhe Institute of Technology (KIT) in accordance with the European Assessment Document EAD-050004-00-0301.

The assessed sliding friction coefficients are below the maximum value of 3% defined for PTFE acc. to EN 1337-2.

Furthermore, the operating temperature range is extended from -35/+48 °C for PTFE to -50/+80 °C for ROBO®SLIDE 75.

Samples of ROBO®SLIDE 75 were successfully tested for a record accumulated sliding path of 75 km, under a continuous pressure of 60 MPa.

This sliding path demonstrates a 7.5 times higher durability than that of PTFE acc. to EN 1337-2 or acc. to various ETAs.

Key characteristics and benefits of ROBO®SLIDE 75

- **Newest generation UHMWPE**
- **Market-leading durability / resistance to abrasion tested for 75 km or 75 years respectively**
- **Doubled compressive strength, compared to PTFE, for compact bearings**
- **Tested for use with stainless steel, hard chromed, and special alloy mating surfaces**
- **PFAS free**

Comparison of ROBO®SLIDE 75 and PTFE

	ROBO®SLIDE 75 acc. to ETA 23/0831	PTFE acc. to EN 1337-2
Char. strength [MPa]	180 at 35 °C	90 at 30 °C
Expectable lifetime [years]	75 ^a	10 – 25 ^b
Min/Max temperature	-50 °C / +80 °C	-35 °C / +48 °C
Sliding friction	2.3 – 2.8 % ^c	2.0 – 3.0 % ^c
PFAS free	Yes	No

^a acc. to EAD 050004-00-0301 for 75 km accum. sliding path

^b acc. to EN 1990. 10 km accum. sliding path acc. to EN 1337-2

^c main surface, at 50% utilization

Comparison of durability of various sliding materials

Material	Standard	Tested accum. sliding path [km]
New UHMWPE ROBO®SLIDE 75	ETA 23/0831	75
First generation UHMWPE	various ETAs	50
Modified, high strength PTFE	various ETAs	10
PTFE	EN 1337-2	10



mageba in house production facility of structural bearings

Customer support

Our product specialists will be pleased to advise you in the selection of the most suitable bearing type for your project.

¹ Polytetrafluoroethylene

² Ultra-high-molecular-weight polyethylene

³ Per- and polyfluoroalkyl substances

mageba infrastructure products



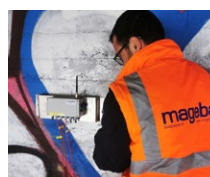
Structural bearings



Expansion joints



Seismic devices



Structural monitoring

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