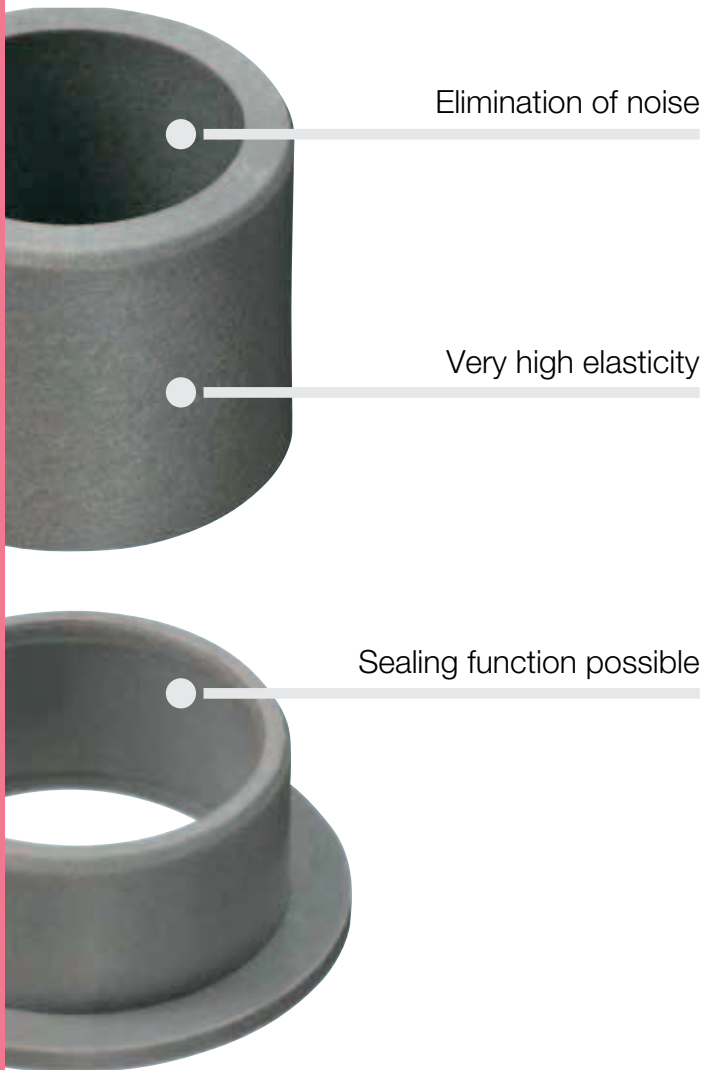


# iglidur® B

**The flexible material.** Vibration dampening is the salient feature of the iglidur® B bearings, which are also well-suited for edge loads at low forces.



### When to use it?

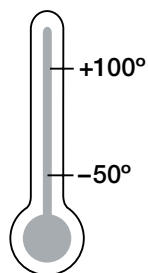
- When maximum vibration dampening is required
- When sealing function has to be integrated
- When high edge loads occur



### When not to use it?

- In applications with high atmospheric humidity  
▶ **iglidur® J, page 89**
- When a cost-effective universal bearing is required  
▶ **iglidur® R, page 249**
- When the highest wear resistance is required  
▶ **iglidur® J, page 89**

### Temperature



### Product range

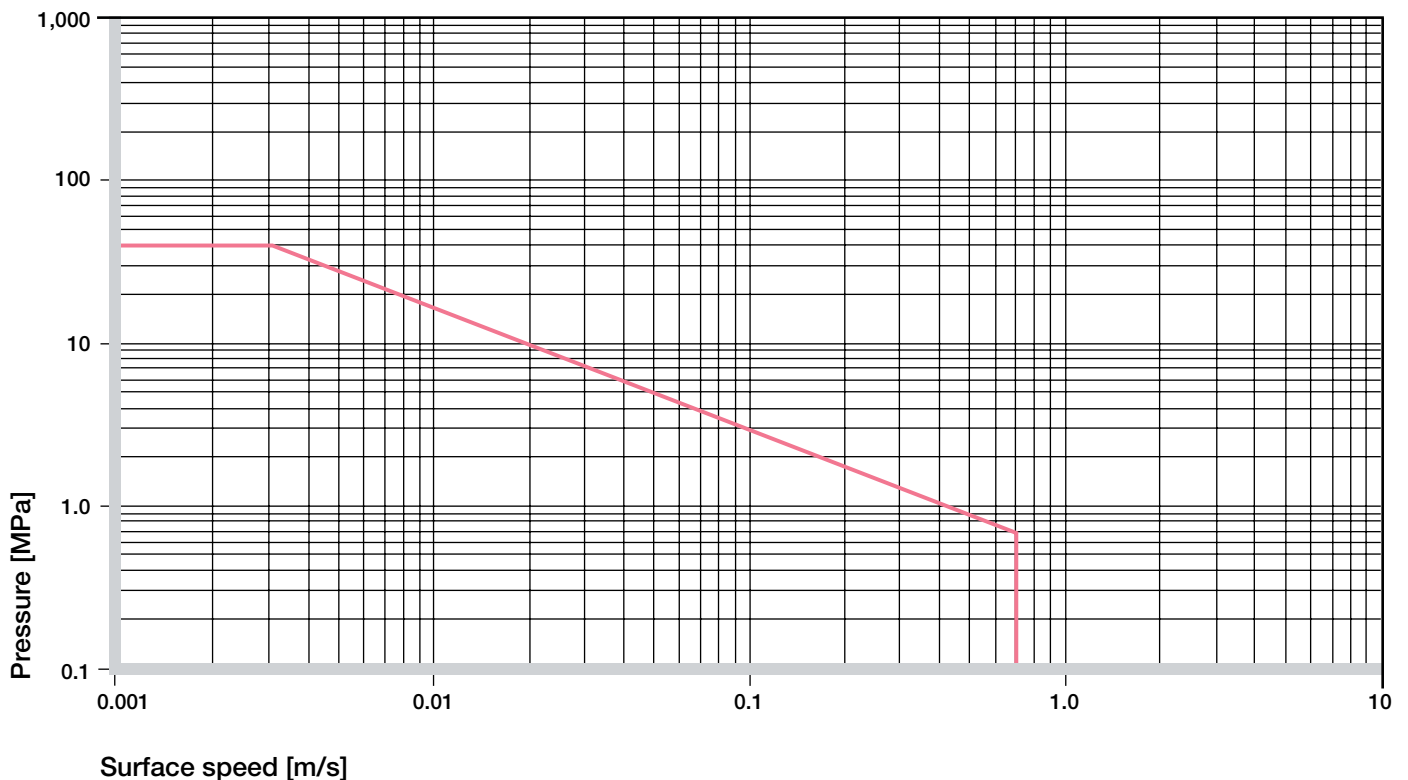
on request



Material data			
General properties	Unit	iglidur® B	Testing method
Density	g/cm <sup>3</sup>	1.15	
Colour		grey	
Max. moisture absorption at +23 °C/50 % r.h.	% weight	1.0	DIN 53495
Max. moisture absorption	% weight	6.3	
Coefficient of sliding friction, dynamic against steel	μ	0.18–0.28	
pv value, max. (dry)	MPa · m/s	0.15	
Mechanical properties			
Modulus of elasticity	MPa	1,800	DIN 53457
Tensile strength at +20 °C	MPa	55	DIN 53452
Compressive strength	MPa	20	
Max. recommended surface pressure (+20 °C)	MPa	40	
Shore D hardness		69	DIN 53505
Physical and thermal properties			
Max. long term application temperature	°C	+100	
Max. short term application temperature	°C	+130	
Max. short term ambient temperature <sup>1)</sup>	°C	+150	
Min. application temperature	°C	-40	
Thermal conductivity	W/m · K	0.24	ASTM C 177
Coefficient of thermal expansion (at +23 °C)	K <sup>-1</sup> · 10 <sup>-5</sup>	12	DIN 53752
Electrical properties			
Specific volume resistance	Ωcm	> 10 <sup>10</sup>	DIN IEC 93
Surface resistance	Ω	> 10 <sup>9</sup>	DIN 53482

<sup>1)</sup> Without additional load; no sliding movement; relaxation possible

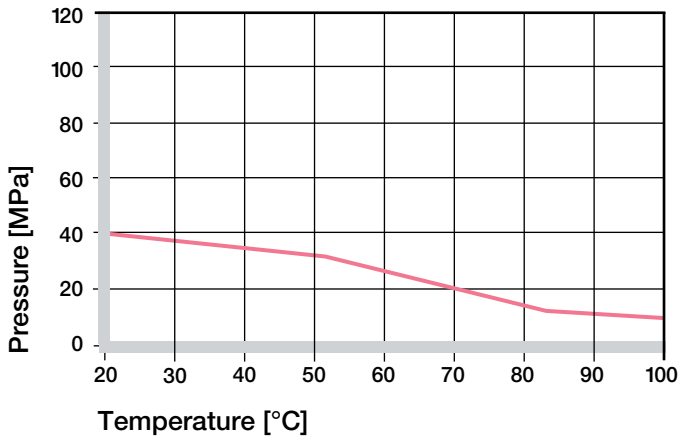
**Tabelle 01: Material data**



**Graph 01: Permissible pv values for iglidur® B with a wall thickness of 1 mm dry running against a steel shaft at +20 °C, mounted in a steel housing**

## Mechanical Properties

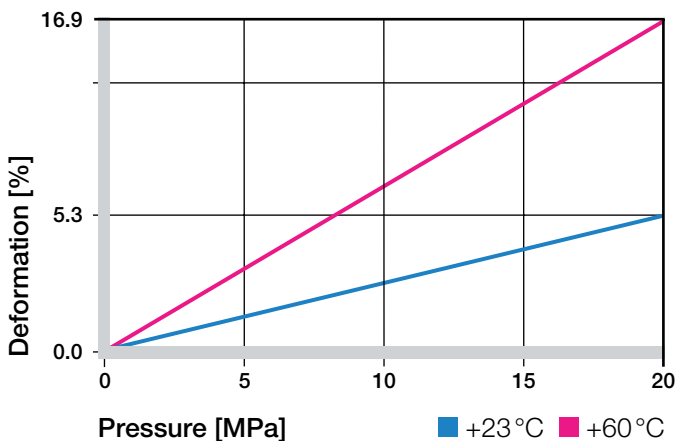
The recommended maximum surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this. With increasing temperatures, the compressive strength of iglidur® B plain bearings decreases. The Graph 02 shows this inverse relationship. However, at the longterm maximum temperature of +100°C the permissible surface pressure is almost 10 MPa.



**Graph 02: Recommended maximum surface pressure as a function of temperature (40 MPa at +20 °C)**

The compressive strength of the iglidur® B bearings is on the one hand low, but on the other, is an important property of the bearing. They are mainly used where vibration dampening and acoustic separation are required. The deformation at 40 MPa and under ambient temperature is 5.3 % (Graph 03).

## ► Surface Pressure, page 43



**Graph 03: Deformation under pressure and temperature**

## Permissible Surface Speeds

iglidur® B bearings can be continuously used up to 0.7 m/s. The frictional heat provides the speed limits. In practice, though, this temperature level is rarely reached, due to varying application conditions.

## ► Surface Speed, page 45

m/s	Rotating	Oscillating	Linear
Continuous	0.7	0.5	2
Short term	1	0.7	3

**Table 02: Maximum running speed**

## Temperatures

The operating temperature of the iglidur® B bearings is limited to +100°C. From +50 °C onward, the very soft bearing should be mechanically fastened, so that the danger of bushings creeping out of the bores is avoided. The wear resistance too declines disproportionately from +70 °C.

## ► Application Temperatures, page 46

iglidur® B	Application temperature
Minimum	-40 °C
Max. long term	+100 °C
Max. short term	+130 °C
Add. securing is required from	+50 °C

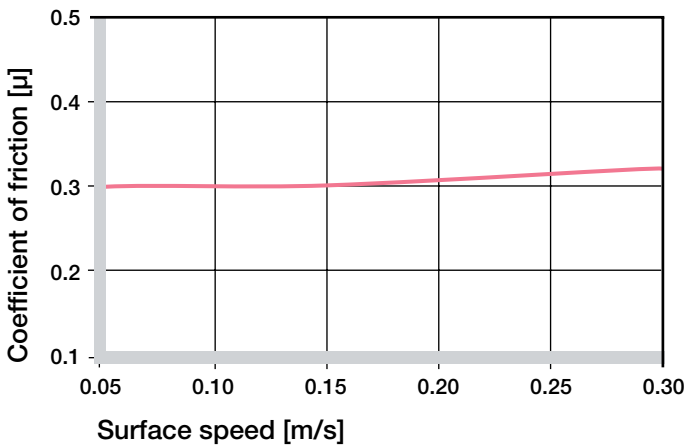
**Table 03: Temperature limits**

# iglidur® B | Technical Data

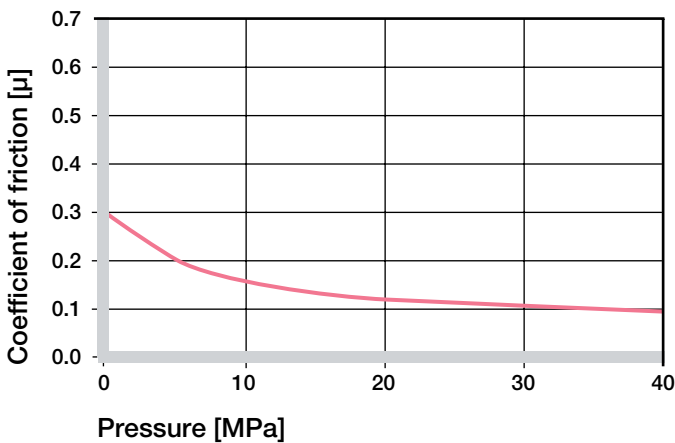
## Friction and Wear

The coefficients of friction increase slightly with the speed and decrease with the load. Surface finishes of the shaft between 0.4 and 0.6 Ra are ideal. The iglidur® B bearings assume a center position in wear resistance. As far as the bearing load is not too high, the attained coefficients of wear are pretty good. An increase in load results in a disproportionate increase in abrasion.

- ▶ Coefficients of Friction and Surfaces, **page 48**
- ▶ Wear Resistance, **page 49**



Graph 04: Coefficient of friction as a function of the running speed,  $p = 0.75 \text{ MPa}$



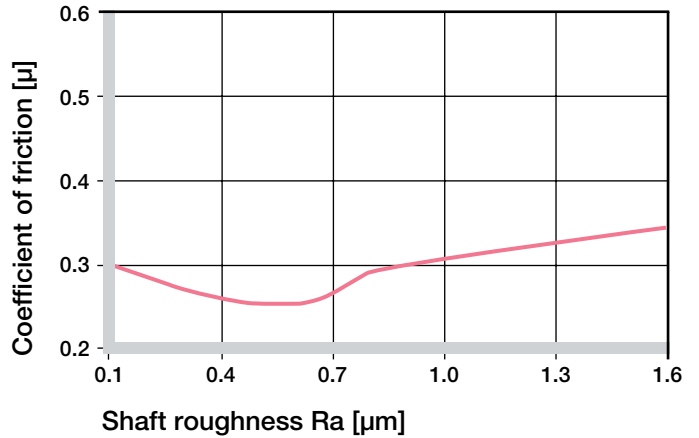
Graph 05: Coefficient of friction as a function of the pressure,  $v = 0.01 \text{ m/s}$

## Shaft Materials

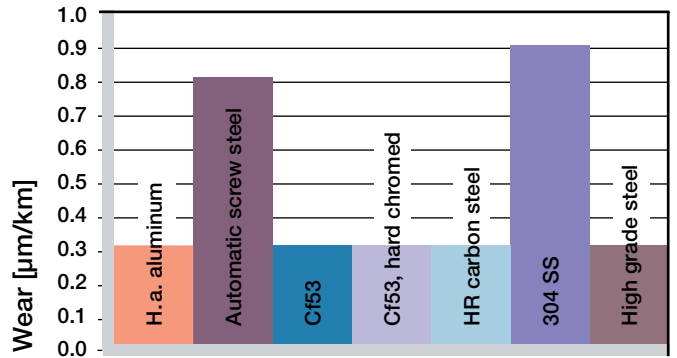
The influence of the shaft is not very large in wear resistance.

Graph 07 and 08 clarify that very similar wear data are attained with different shaft materials. If high operational performances are expected, the bearing load should not be too high.

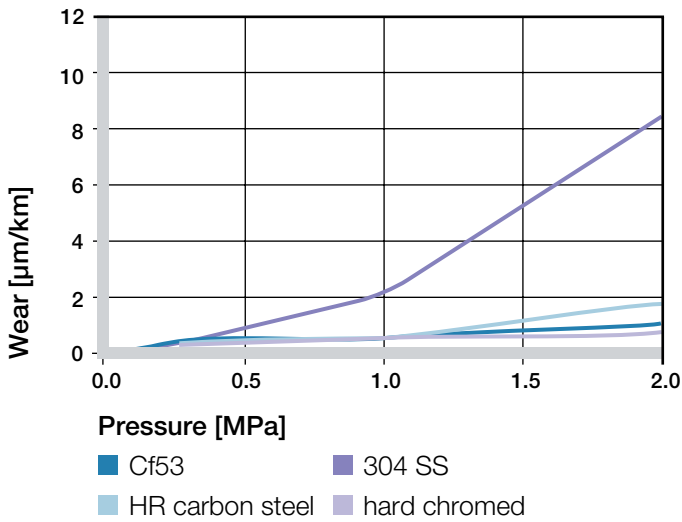
### ▶ Shaft Materials, **page 51**



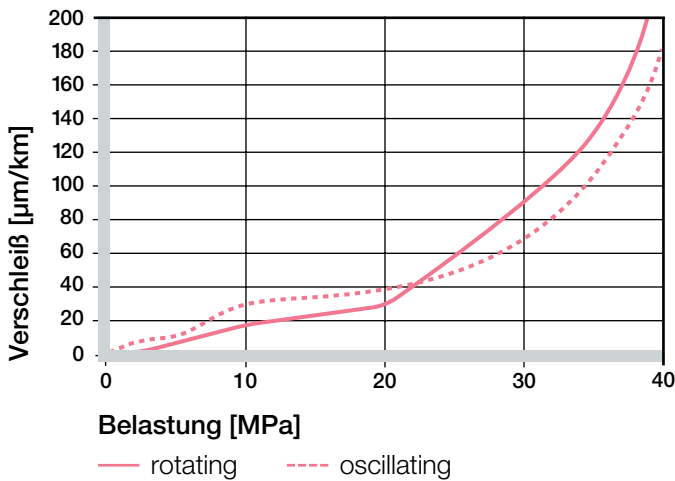
Graph 06: Coefficient of friction as function of the shaft surface (Cf53 hardened and ground steel)



Graph 07: Wear, rotating with different shaft materials, pressure  $p = 0.75 \text{ MPa}$ ,  $v = 0.5 \text{ m/s}$



Graph 08: Wear with different shaft materials in rotational operation, as a function of the pressure



Graph 09: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the pressure

iglidur® B	Dry	Greases	Oil	Water
C.o.f. µ	0.18–0.28	0.09	0.04	0.04

Table 04: Coefficient of friction against steel (Ra = 1 µm, 50 HRC)

## Additional Properties

### Chemical Resistance

iglidur® B plain bearings are not very resistant to chemicals. Where chemical resistance is required, other iglidur® materials featuring better characteristics should be used.

► Chemical Table, page 974

Medium	Resistance
Alcohol	+ to 0
Hydrocarbons	–
Greases, oils without additives	–
Fuels	–
Diluted acids	0 to –
Strong acids	–
Diluted alkalines	–
Strong alkalines	–

+ resistant 0 conditionally resistant – not resistant  
All data given at room temperature [+20 °C]

Table 05: Chemical resistance

### Radiation Resistance

Plain bearings of iglidur® B are radiation resistant to a radiation intensity of  $3 \cdot 10^2$  Gy.

### UV Resistance

iglidur® B plain bearings are not resistant to the impact of UV radiation.

### Vacuum

Use of iglidur® B plain bearings is limited in a vacuum. Only dehumidified bearings should be tested.

### Electrical Properties

iglidur® B plain bearings are electrically insulating.

Volume resistance	> $10^{10}$ Ωcm
Surface resistance	> $10^9$ Ω 10

# iglidur® B | Technical Data

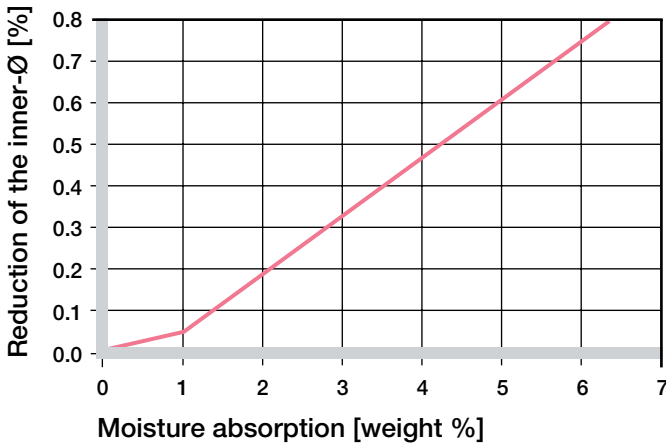
## Moisture Absorption

The moisture absorption is relatively high and must be considered in the selection and design.

### Maximum moisture absorption

At 2+3 °C/50% r.h.	1.0 % weight
Max. moisture absorption	6.3 % weight

Table 06: Moisture absorption



Graph 10: Effect of moisture absorption on plain bearings

## Installation Tolerances

iglidur® B plain bearings are standard bearings for shafts with a h tolerance (h9 recommended at least). The bearings are designed for pressfit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter of the bearings is automatically adjusted to an E10 tolerance.

► Testing Methods, page 55

Diameter d1 [mm]	Shaft h9 [mm]	iglidur® B D11 [mm]	Housing H7 [mm]
up to 3	0-0.025	+0.020 +0.080	0 +0.010
> 3 to 6	0-0.030	+0.030 +0.105	0 +0.012
> 6 to 10	0-0.036	+0.040 +0.130	0 +0.015
> 10 to 18	0-0.043	+0.050 +0.160	0 +0.018
> 18 to 30	0-0.052	+0.065 +0.195	0 +0.021
> 30 to 50	0-0.062	+0.080 +0.240	0 +0.025
> 50 to 80	0-0.074	+0.100 +0.290	0 +0.030

Table 07: Important tolerances for plain bearings according to ISO 3547-1 after pressfit

## Product Range

iglidur® B plain bearings are manufactured to special order.

# My Sketches

