Materials for general purpose

Materials for general purpose

This group includes iglidur® materials that can be used almost universally under normal conditions (temperature, media, etc.). iglidur® G is the decathlete among iglidur® materials. It performs exceedingly well in almost all technical disciplines. With reduced moisture absorption and improved wear and temperature behaviour for many applications, iglidur® G1 represents an advanced development of this classic. The iglidur® GLW is specially suitable for solutions in large batches. iglidur® P and iglidur® K have a similar potential as iglidur® G paired with significantly reduced moisture absorption, which is advantageous for use in wet environments.

Online product finder
www.igus.eu/iglidur-finder

Online service life calculation
www.igus.eu/iglidur-expert

iglidur® G
The classic all-rounder

Temperature [°C] [123]	+130	– +
Surface pressure [MPa] [124]	80	– +
Coefficient of friction [µ] [125]	0.22	– +
Wear [µm/km] [125]	1.75	– +
Price index		– +

iglidur® G1
More universal

Temperature [°C] [123]	+180	– +
Surface pressure [MPa] [124]	91	– +
Coefficient of friction [µ] [125]	0.11	– +
Wear [µm/km] [125]	0.76	– +
Price index		– +

iglidur® M250
The robust all-rounder according to ISO 2795

Temperature [°C] [123]	+80	– +
Surface pressure [MPa] [124]	20	– +
Coefficient of friction [µ] [125]	0.56	– +
Wear [µm/km] [125]	2.10	– +
Price index		– +

iglidur® P210
Specialist for pivoting, rolling applications and more

Temperature [°C] [123]	+100	– +
Surface pressure [MPa] [124]	50	– +
Coefficient of friction [µ] [125]	0.17	– +
Wear [µm/km] [125]	0.38	– +
Price index		– +

[123] Upper long-term application temperature [124] Max. recommended surface pressure at +20°C [125] Best pairing for p = 1 MPa, v = 0.3m/s, rotating

EN 09/2023

iglidur® P230
The low-cost all-rounder

Temperature [°C] [123]	+110	– +
Surface pressure [MPa] [124]	60	– +
Coefficient of friction [µ] [125]	0.13	– +
Wear [µm/km] [125]	1.53	– +
Price index		– +

iglidur® P
The cost-effective outdoor all-rounder

Temperature [°C] [123]	+130	– +
Surface pressure [MPa] [124]	50	– +
Coefficient of friction [µ] [125]	0.24	– +
Wear [µm/km] [125]	1.80	– +
Price index		– +

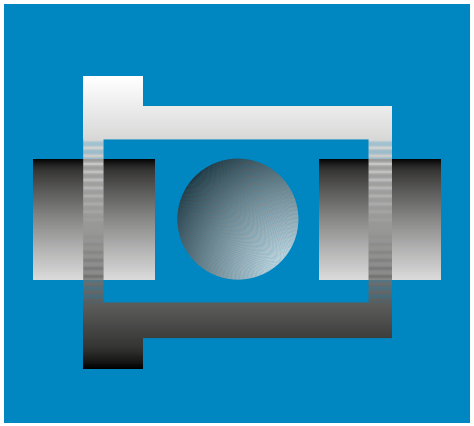
iglidur® K
Versatile and cost-effective

Temperature [°C] [123]	+170	– +
Surface pressure [MPa] [124]	50	– +
Coefficient of friction [µ] [125]	0.16	– +
Wear [µm/km] [125]	0.60	– +
Price index		– +

iglidur® GLW
Low-cost material for high-volume production

Temperature [°C] [123]	+100	– +
Surface pressure [MPa] [124]	80	– +
Coefficient of friction [µ] [125]	0.23	– +
Wear [µm/km] [125]	8.30	– +

EN 09/2023



The classic all-rounder

Excellent price-performance ratio

iglidur® G

When to use it?

- When an economical all-round performance bearing is required
- For low to medium speeds
- When the bearing needs to run on different shaft materials
- For pivoting and rotational movements

When not to use it?

- When mechanical reaming of the bore is necessary
  iglidur® M250
- When lowest wear is required
  iglidur® W300
- When universal chemical resistance is required
  iglidur® X
- When temperatures are constantly higher than +130 °C
  iglidur® H, iglidur® X, iglidur® H370
- For underwater applications
  iglidur® H370

EN 09/2023

EN 09/2023

Bearing technology | Plain bearings | iglidur® G

Ø
1.5-195.0mm

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

The classic all-rounder
Excellent price-performance ratio

iglidur® G plain bearings cover an extremely wide range of different requirements - they are truly "all-round". Therefore, the material is rightly called universal. Typical applications include medium to high loads, medium surface speeds and medium temperatures.

- Over 650 sizes available from stock
- High wear resistance
- Resistant to dirt
- Cost-effective
- Lubrication-free
- Maintenance-free
- Resistant to dirt

Typical application areas

- Agricultural machines
- Construction machinery industry
- Sports and leisure
- Automotive industry
- Mechatronics
- Machine building

Descriptive technical specifications			
Wear resistance at +23°C	–	■■■□□	+
Wear resistance at +90°C	–	■■■□□	+
Wear resistance at +150°C	–	■■□□□	+
Slide property	–	■■■■□	+
Wear resistance under water	–	■□□□□	+
Media resistance	–	■■■□□	+
Resistant to edge pressures	–	■■■■□	+
Resistant to shock and impact loads	–	■■■■□	+
Dirt resistance	–	■■■■■	+

Online product finder
www.igus.eu/iglidur-finder

Online service life calculation
www.igus.eu/iglidur-expert

EN 09/2023

iglidur® G
+130°C
80MPa

Technical data

General properties			Testing method
Density	g/cm³	1.46	
Colour		matt grey	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.7	DIN 53495
Max. moisture absorption	% weight	4.0	
Coefficient of friction, dynamic, against steel	µ	0.08-0.15	
pv value, max. (dry)	MPa · m/s	0.42	
Mechanical properties			
Flexural modulus	MPa	7,800	DIN 53457
Flexural strength at +20°C	MPa	210	DIN 53452
Compressive strength	MPa	78	
Max. permissible surface pressure (+20°C)	MPa	80	
Shore D hardness		81	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+130	
Max. application temperature short-term	°C	+220	
Min. application temperature	°C	-40	
Thermal conductivity	W/m · K	0.24	ASTM C 177
Coefficient of thermal expansion (at +23°C)	$K^{-1} \cdot 10^{-5}$	9	DIN 53752
Electrical properties			
Specific transitional resistance	Ωcm	$> 10^{13}$	DIN IEC 93
Surface resistance	Ω	$> 10^{11}$	DIN 53482

Table 01: Material properties

-40°C up to +130°C

80MPa

HB

RoHS-II

ISO 3547-1

iglidur® G is the decathlete among iglidur® materials. It performs exceedingly well in all technical disciplines and is the classic all-rounder, primarily with respect to the overall general, mechanical, thermal and tribological specifications.

Moisture absorption

The moisture absorption of iglidur® G plain bearings in ambient conditions is approximately 0.7 % weight. The saturation limit submerged in water is 4.0% weight. This must be taken into account for these types of applications.

Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® G1 bearings.

Radiation resistance

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

Resistance to weathering

iglidur® G plain bearings are resistant to weathering. The material properties are slightly affected. Discolouration occurs.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® G plain bearings decreases. Diagram 02 shows this inverse relationship. With the long-term permitted application temperature of +130°C, the permitted surface pressure still amounts to 35MPa. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® G at radial loads. The plastic deformation is minimal up to a pressure of approximately 100MPa. However, it is also dependent on the service time.

Surface pressure, page 45

EN 09/2023

Bearing technology | Plain bearings | iglidur® G

Permissible surface speeds

iglidur® G has been developed for low to medium surface speeds. The maximum values shown in table 03 can only be achieved at low pressures. At the given speeds, friction can cause a temperature increase to maximum permissible levels. In practice, though, this level is rarely reached due to varying application conditions.

Surface speed, page 48

Temperature

The ambient temperatures strongly influence the properties of plain bearings. The temperatures prevailing in the bearing system also have an influence on the wear. With increasing temperatures, the wear increases and this effect is significant when temperatures rise over +120°C. For temperatures over +80°C an additional securing is required.

Application temperatures, page 53
Additional securing, page 53

Friction and wear

Similar to wear resistance, the coefficient of friction μ also changes with the surface speed and load (diagrams 04 and 05).

Coefficient of friction and surfaces, page 51
Wear resistance, page 54

Shaft materials

The friction and wear are also dependent, to a large degree, on the mating partner. Shafts that are too smooth increase both the coefficient of friction and the wear of the bearing. For iglidur® G a ground surface with an average surface finish Ra = 0.8μm is recommended. Diagram 06 shows results of testing different shaft materials with plain bearings made from iglidur® G. It is important to notice that with increasing loads, the recommended hardness of the shaft increases. The "soft" shafts tend to wear themselves and thus increase the wear of the overall system. If the loads exceed 2MPa it is important to recognise that the wear rate (the gradient of the curves) clearly decreases with the hard shaft materials. If the shaft material you plan on using is not shown in these test results, please contact us.

Shaft materials, page 56

Installation tolerances

iglidur® G plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 61

Chemicals	Resistance
Alcohols	+ up to 0
Diluted acids	0 up to –
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	–
Strong alkalines	0

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1170

		Rotating	Oscillating	linear
Long-term	m/s	1.0	0.7	4.0
Short-term	m/s	2.0	1.4	5.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.08-0.15	0.09	0.04	0.04

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

	Housing		Plain bearings		Shaft	
Ø d1 [mm]	H7 [mm]		E10 [mm]		h9 [mm]	
0-3	+0.000	+0.010	+0.014	+0.054	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.020	+0.068	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.025	+0.083	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.032	+0.102	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.040	+0.124	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.050	+0.150	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.060	+0.180	-0.074	+0.000
> 80-120	+0.000	+0.035	+0.072	+0.212	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.085	+0.245	-0.100	+0.000

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

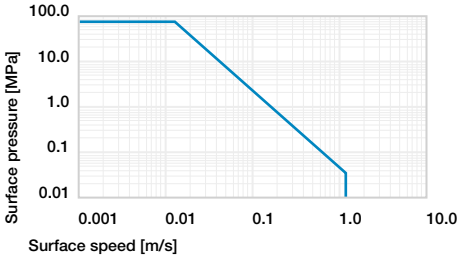


Diagram 01: Permissible pv values for iglidur® G plain bearing with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing.

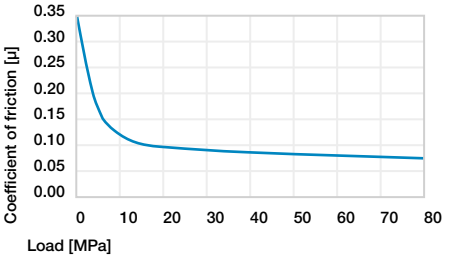


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

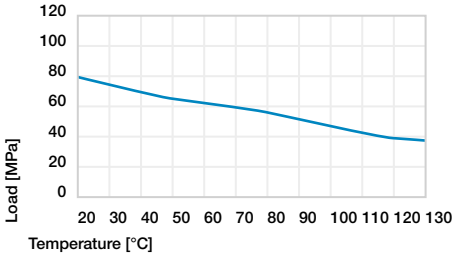


Diagram 02: Maximum recommended surface pressure as a function of temperature (80MPa at +20°C)

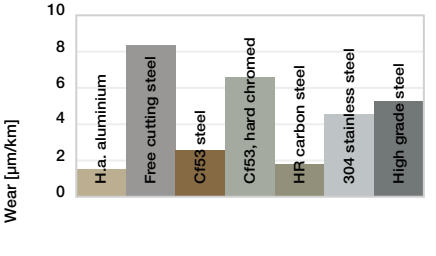


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

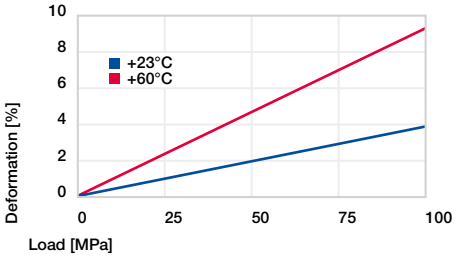


Diagram 03: Deformation under pressure and temperature

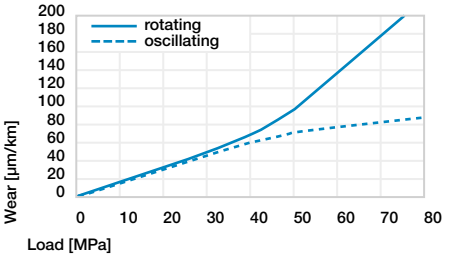


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

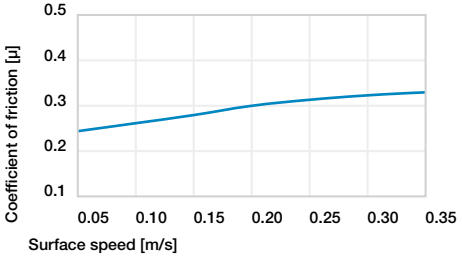
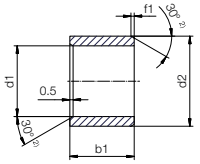


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

Bearing technology | Plain bearings | iglidur® G

Sleeve bearings (form S)



[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2

Dimensions according to ISO 3547-1 and special dimensions

Order example: GSM-0103-02 – no minimum order quantity.
G iglidur® material S Cylindrical M Metric 01 Inner Ø d1 03 Outer Ø d2 02 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
1.5		3.0	2.0	GSM-0103-02
2.0		3.5	3.0	GSM-0203-03
2.5	+0.014	4.5	5.0	GSM-02504-05
3.0	+0.054	4.5	3.0	GSM-0304-03
3.0		4.5	5.0	GSM-0304-05
3.0		4.5	6.0	GSM-0304-06
4.0		5.5	4.0	GSM-0405-04
4.0	+0.020	5.5	6.0	GSM-0405-06
4.0	+0.068	7.0	5.5	GSM-0407-05
4.5		6.0	8.0	GSM-0406-08
5.0		6.0	4.6	GSM-0506-046
5.0	+0.010	6.0	5.0	GSM-0506-05
5.0	+0.040	6.0	7.0	GSM-0506-07
5.0		7.0	5.0	GSM-0507-05
5.0	+0.020	7.0	7.0	GSM-0507-07
5.0	+0.068	7.0	8.0	GSM-0507-08
5.0		7.0	10.0	GSM-0507-10
6.0		7.0	6.0	GSM-0607-06
6.0		7.0	12.0	GSM-0607-12
6.0	+0.010	7.0	17.0	GSM-0607-17
6.0	+0.040	7.0	17.5	GSM-0607-17.5
6.0		7.0	19.0	GSM-0607-19
6.0		8.0	1.5	GSM-0608-015
6.0		8.0	2.5	GSM-0608-025
6.0		8.0	3.0	GSM-0608-03
6.0	+0.020	8.0	4.0	GSM-0608-04
6.0	+0.068	8.0	5.0	GSM-0608-05
6.0		8.0	5.5	GSM-0608-055
6.0		8.0	6.0	GSM-0608-06

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
6.0		8.0	8.0	GSM-0608-08
6.0		8.0	9.5	GSM-0608-09
6.0	+0.020	8.0	10.0	GSM-0608-10
6.0	+0.068	8.0	11.8	GSM-0608-11
6.0		8.0	13.8	GSM-0608-13
7.0	+0.013	8.0	10.0	GSM-0708-10
7.0	+0.049	8.0	19.0	GSM-0708-19
7.0		9.0	8.0	GSM-0709-08
7.0	+0.025	9.0	9.0	GSM-0709-09
7.0	+0.083	9.0	10.0	GSM-0709-10
7.0		9.0	12.0	GSM-0709-12
8.0		9.0	5.0	GSM-0809-05
8.0	+0.013	9.0	6.0	GSM-0809-06
8.0	+0.049	9.0	8.0	GSM-0809-08
8.0		9.0	12.0	GSM-0809-12
8.0		10.0	5.0	GSM-0810-05
8.0		10.0	6.0	GSM-0810-06
8.0		10.0	6.8	GSM-0810-07
8.0		10.0	8.0	GSM-0810-08
8.0		10.0	10.0	GSM-0810-10
8.0		10.0	12.0	GSM-0810-12
8.0	+0.025	10.0	13.8	GSM-0810-13
8.0	+0.083	10.0	14.0	GSM-0810-14
8.0		10.0	15.0	GSM-0810-15
8.0		10.0	16.0	GSM-0810-16
8.0		10.0	18.0	GSM-0810-18
8.0		10.0	20.0	GSM-0810-20
8.0		10.0	22.0	GSM-0810-22
8.0		10.0	25.0	GSM-0810-25

[3] After press-fit. *Testing methods, page 61*

EN 09/2023

Product range

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
8.0	+0.040 +0.130	12.0	9.0	GSM-0812-09
9.0	+0.013	10.0	12.0	GSM-0910-12
9.0	+0.049	10.0	16.0	GSM-0910-16
9.0	+0.025	11.0	6.0	GSM-0911-06
9.0	+0.083	11.0	20.0	GSM-0911-20
10.0		11.0	6.0	GSM-1011-06
10.0		11.0	7.0	GSM-1011-07
10.0	+0.013	11.0	10.0	GSM-1011-10
10.0	+0.049	11.0	20.0	GSM-1011-20
10.0		11.0	25.0	GSM-1011-25
10.0		11.0	30.0	GSM-1011-30
10.0		12.0	4.0	GSM-1012-04
10.0		12.0	4.5	GSM-1012-045
10.0		12.0	5.0	GSM-1012-05
10.0		12.0	6.0	GSM-1012-06
10.0		12.0	7.0	GSM-1012-07
10.0		12.0	8.0	GSM-1012-08
10.0	+0.025	12.0	9.0	GSM-1012-09
10.0	+0.083	12.0	10.0	GSM-1012-10
10.0		12.0	12.0	GSM-1012-12
10.0		12.0	14.0	GSM-1012-14
10.0		12.0	15.0	GSM-1012-15
10.0		12.0	17.0	GSM-1012-17
10.0		12.0	20.0	GSM-1012-20
10.0		13.0	13.5	GSM-1013-13
10.0	+0.025	14.0	10.0	GSM-1014-10
10.0	+0.115	14.0	20.0	GSM-1014-20
10.0	+0.040 +0.130	16.0	10.0	GSM-1016-10
12.0		13.0	4.7	GSM-1213-047
12.0	+0.016	13.0	10.0	GSM-1213-10
12.0	+0.059	13.0	12.0	GSM-1213-12
12.0		13.0	15.0	GSM-1213-15
12.0		14.0	4.0	GSM-1214-04
12.0		14.0	5.0	GSM-1214-05
12.0		14.0	6.0	GSM-1214-06
12.0		14.0	8.0	GSM-1214-08
12.0		14.0	10.0	GSM-1214-10
12.0	+0.032	14.0	12.0	GSM-1214-12
12.0	+0.102	14.0	14.0	GSM-1214-14
12.0		14.0	15.0	GSM-1214-15
12.0		14.0	20.0	GSM-1214-20
12.0		14.0	25.0	GSM-1214-25
12.0		15.0	6.0	GSM-1215-06
12.0		15.0	22.0	GSM-1215-22
12.0	+0.050	16.0	10.0	GSM-1216-10
12.0	+0.160	16.0	20.0	GSM-1216-20

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
13.0		15.0	7.0	GSM-1315-070
13.0		15.0	7.5	GSM-1315-075
13.0		15.0	10.0	GSM-1315-10
13.0		15.0	15.0	GSM-1315-15
13.0		15.0	20.0	GSM-1315-20
13.0		15.0	25.0	GSM-1315-25
14.0		16.0	3.0	GSM-1416-03
14.0	+0.032	16.0	6.0	GSM-1416-06
14.0	+0.102	16.0	8.0	GSM-1416-08
14.0		16.0	10.0	GSM-1416-10
14.0		16.0	12.0	GSM-1416-12
14.0		16.0	15.0	GSM-1416-15
14.0		16.0	20.0	GSM-1416-20
14.0		16.0	25.0	GSM-1416-25
14.0		16.0	45.0	GSM-1416-45
15.0	+0.016	16.0	10.0	GSM-1516-10
15.0	+0.059	16.0	15.0	GSM-1516-15
15.0		17.0	4.0	GSM-1517-04
15.0		17.0	10.0	GSM-1517-10
15.0		17.0	12.0	GSM-1517-12
15.0		17.0	15.0	GSM-1517-15
15.0		17.0	20.0	GSM-1517-20
15.0		17.0	25.0	GSM-1517-25
16.0		18.0	5.5	GSM-1618-055
16.0		18.0	8.0	GSM-1618-08
16.0	+0.032	18.0	10.0	GSM-1618-10
16.0	+0.102	18.0	12.0	GSM-1618-12
16.0		18.0	13.5	GSM-1618-13.5
16.0		18.0	15.0	GSM-1618-15
16.0		18.0	20.0	GSM-1618-20
16.0		18.0	25.0	GSM-1618-25
16.0		18.0	30.0	GSM-1618-30
16.0		18.0	38.5	GSM-1618-38.5
16.0		18.0	50.0	GSM-1618-50
17.0		19.0	15.0	GSM-1719-15
18.0	+0.016 +0.059	19.0	15.0	GSM-1819-15
18.0		20.0	6.0	GSM-1820-06
18.0		20.0	10.0	GSM-1820-10
18.0		20.0	12.0	GSM-1820-12
18.0		20.0	15.0	GSM-1820-15
18.0	+0.032	20.0	20.0	GSM-1820-20
18.0	+0.102	20.0	25.0	GSM-1820-25
18.0		20.0	34.0	GSM-1820-34
18.0		20.0	38.0	GSM-1820-38
18.0		20.0	45.0	GSM-1820-45
18.0		22.0	30.0	GSM-1822-30

[3] After press-fit. *Testing methods, page 61*

EN 09/2023

Bearing technology | Plain bearings | iglidur® G

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
19.0	+0.040 +0.124	22.0	6.0	GSM-1922-06
19.0		22.0	28.0	GSM-1922-28
19.0		22.0	35.0	GSM-1922-35
20.0	+0.020 +0.072	21.0	20.0	GSM-2021-20
20.0		22.0	3.0	GSM-2022-03
20.0		22.0	8.0	GSM-2022-08
20.0		22.0	10.5	GSM-2022-105
20.0		22.0	15.0	GSM-2022-15
20.0		22.0	20.0	GSM-2022-20
20.0		22.0	22.0	GSM-2022-22
20.0		22.0	28.0	GSM-2022-28
20.0		22.0	30.0	GSM-2022-30
20.0		22.0	47.0	GSM-2022-47
20.0		23.0	4.5	GSM-2023-045
20.0		23.0	10.0	GSM-2023-10
20.0		23.0	15.0	GSM-2023-15
20.0		23.0	20.0	GSM-2023-20
20.0		23.0	24.0	GSM-2023-24
20.0	+0.040 +0.124	23.0	25.0	GSM-2023-25
20.0		23.0	30.0	GSM-2023-30
20.0		23.0	35.0	GSM-2023-35
22.0		24.0	8.0	GSM-2224-08
22.0		24.0	10.0	GSM-2224-10
22.0		24.0	12.0	GSM-2224-12
22.0		24.0	15.0	GSM-2224-15
22.0		24.0	17.0	GSM-2224-17
22.0		24.0	20.0	GSM-2224-20
22.0		24.0	30.0	GSM-2224-30
22.0		24.0	48.0	GSM-2224-48
22.0		25.0	15.0	GSM-2225-15
22.0		25.0	20.0	GSM-2225-20
22.0		25.0	25.0	GSM-2225-25
22.0		25.0	30.0	GSM-2225-30
22.0		25.0	38.5	GSM-2225-38.5
24.0	+0.020 +0.072	25.0	25.0	GSM-2425-25
24.0		27.0	6.0	GSM-2427-06
24.0		27.0	15.0	GSM-2427-15
24.0	+0.040 +0.124	27.0	20.0	GSM-2427-20
24.0		27.0	24.0	GSM-2427-24
24.0		27.0	25.0	GSM-2427-25
24.0		27.0	30.0	GSM-2427-30
25.0	+0.020 +0.072	26.0	23.0	GSM-2526-23
25.0		26.0	25.0	GSM-2526-25
25.0	+0.040 +0.124	28.0	12.0	GSM-2528-12
25.0		28.0	15.0	GSM-2528-15
25.0		28.0	20.0	GSM-2528-20
25.0	+0.040 +0.124	28.0	24.0	GSM-2528-24
25.0		28.0	25.0	GSM-2528-25
25.0		28.0	30.0	GSM-2528-30
25.0		28.0	35.0	GSM-2528-35
25.0		28.0	50.0	GSM-2528-50
26.0		30.0	16.0	GSM-2630-16
27.0	+0.040 +0.124	30.0	5.0	GSM-2730-05
28.0		32.0	10.5	GSM-2832-105
28.0		32.0	12.0	GSM-2832-12
28.0		32.0	15.0	GSM-2832-15
28.0		32.0	20.0	GSM-2832-20
28.0		32.0	23.0	GSM-2832-23
28.0		32.0	25.0	GSM-2832-25
28.0		32.0	30.0	GSM-2832-30
28.0	+0.065 +0.195	35.0	19.0	GSM-2835-19
28.0		35.0	28.0	GSM-2835-28
29.0	+0.040 +0.124	33.0	6.0	GSM-2933-06
30.0	+0.020 +0.072	31.0	5.0	GSM-3031-05
30.0		31.0	12.0	GSM-3031-12
30.0		31.0	30.0	GSM-3031-30
30.0	+0.040 +0.124	34.0	12.0	GSM-3034-12
30.0		34.0	15.0	GSM-3034-15
30.0		34.0	20.0	GSM-3034-20
30.0		34.0	24.0	GSM-3034-24
30.0		34.0	25.0	GSM-3034-25
30.0		34.0	30.0	GSM-3034-30
30.0		34.0	35.0	GSM-3034-35
30.0		34.0	40.0	GSM-3034-40
30.0		34.0	52.5	GSM-3034-525
32.0		36.0	15.0	GSM-3236-15
32.0		36.0	20.0	GSM-3236-20
32.0		36.0	30.0	GSM-3236-30
32.0		36.0	40.0	GSM-3236-40
35.0		39.0	14.0	GSM-3539-14
35.0		39.0	20.0	GSM-3539-20
35.0		39.0	25.0	GSM-3539-25
35.0		39.0	30.0	GSM-3539-30
35.0	+0.050 +0.150	39.0	40.0	GSM-3539-40
35.0		39.0	50.0	GSM-3539-50
35.0		41.0	50.0	GSM-3541-50
36.0		40.0	20.0	GSM-3640-20
37.0		41.0	20.0	GSM-3741-20
38.0		42.0	25.0	GSM-3842-25
40.0		44.0	10.0	GSM-4044-10
40.0		44.0	16.5	GSM-4044-16
40.0		44.0	20.0	GSM-4044-20
40.0		44.0	30.0	GSM-4044-30

[3] After press-fit. *Testing methods, page 61*

EN 09/2023

Product range

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
40.0	+0.050 +0.150	44.0	40.0	GSM-4044-40
40.0		44.0	50.0	GSM-4044-50
40.0		44.0	52.5	GSM-4044-525
42.0		46.0	40.0	GSM-4246-40
44.0		48.0	20.0	GSM-4448-20
45.0		50.0	10.0	GSM-4550-10
45.0		50.0	20.0	GSM-4550-20
45.0		50.0	22.0	GSM-4550-22
45.0		50.0	23.5	GSM-4550-235
45.0		50.0	30.0	GSM-4550-30
45.0		50.0	38.0	GSM-4550-38
45.0		50.0	40.0	GSM-4550-40
45.0		50.0	50.0	GSM-4550-50
50.0		55.0	20.0	GSM-5055-20
50.0		55.0	25.0	GSM-5055-25
50.0		55.0	30.0	GSM-5055-30
50.0		55.0	40.0	GSM-5055-40
50.0		55.0	50.0	GSM-5055-50
50.0		55.0	60.0	GSM-5055-60
52.0	+0.060 +0.180	57.0	20.0	GSM-5257-20
55.0		60.0	20.0	GSM-5560-20
55.0		60.0	40.0	GSM-5560-40
55.0		60.0	50.0	GSM-5560-50
55.0		60.0	60.0	GSM-5560-60
60.0		65.0	30.0	GSM-6065-30
60.0		65.0	40.0	GSM-6065-40
60.0		65.0	50.0	GSM-6065-50
60.0		65.0	60.0	GSM-6065-60
60.0		65.0	70.0	GSM-6065-70
62.0	+0.100 +0.250	67.0	35.0	GSM-6267-35
62.0	+0.060 +0.180	67.0	72.0	GSM-6267-72
65.0		70.0	30.0	GSM-6570-30
65.0		70.0	50.0	GSM-6570-50
65.0		70.0	104.0	GSM-6570-104
68.0		73.0	60.0	GSM-6873-60
70.0		75.0	60.0	GSM-7075-60
72.0		77.0	24.5	GSM-7277-24.5
72.0		77.0	76.0	GSM-7277-76
75.0		80.0	40.0	GSM-7580-40
75.0		80.0	60.0	GSM-7580-60
80.0		85.0	60.0	GSM-8085-60
80.0		85.0	100.0	GSM-8085-100
85.0		90.0	100.0	GSM-8590-100
90.0		95.0	100.0	GSM-9095-100
95.0		100.0	100.0	GSM-95100-100
100.0		105.0	21.5	GSM-100105-21.5
100.0	+0.072 +0.212	105.0	30.0	GSM-100105-30
100.0		105.0	32.0	GSM-100105-32
100.0		105.0	100.0	GSM-100105-100
105.0		110.0	100.0	GSM-105110-100
110.0		115.0	100.0	GSM-110115-100
120.0		125.0	100.0	GSM-120125-100
125.0		130.0	100.0	GSM-125130-100
130.0		135.0	100.0	GSM-130135-100
135.0	+0.085 +0.245	140.0	80.0	GSM-135140-80
140.0		145.0	100.0	GSM-140145-100
140.0		145.0	104.0	GSM-140145-104
150.0		155.0	100.0	GSM-150155-100

[3] After press-fit. *Testing methods, page 61*

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including delivery times, prices, online tools
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No low-quantity surcharges.
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EN 09/2023

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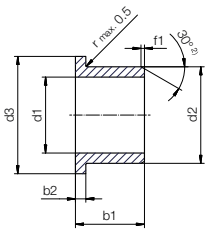
Flange bearings (form F)



[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2

Dimensions according to ISO 3547-1 and special dimensions

Order example: GFM-0304-02 – no minimum order quantity.
G iglidur® material F With flange M Metric 03 Inner Ø d1 04 Outer Ø d2 02 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
3.0		4.5	7.5	2.0	0.50	GFM-0304-02
3.0		4.5	7.5	2.7	0.75	GFM-0304-0275
3.0	+0.014 +0.054	4.5	7.5	3.0	0.75	GFM-0304-03
3.0		4.5	7.5	5.0	0.75	GFM-0304-05
3.0		4.5	7.0	5.0	0.75	GFM-030407-05
4.0	+0.010	5.0	9.5	4.0	0.50	GFM-04050-04
4.0	+0.040	5.0	9.5	6.0	0.50	GFM-04050-06
4.0		5.5	9.5	2.5	0.75	GFM-0405-0255
4.0		5.5	9.5	3.0	0.75	GFM-0405-03
4.0	+0.020 +0.068	5.5	9.5	4.0	0.75	GFM-0405-04
4.0		5.5	9.5	6.0	0.75	GFM-0405-06
4.0		5.5	8.0	10.0	1.00	GFM-040508-10
5.0		6.0	10.0	3.5	0.50	GFM-0506-035
5.0		6.0	10.0	4.0	0.50	GFM-0506-04
5.0	+0.010 +0.040	6.0	10.0	5.0	0.50	GFM-0506-05
5.0		6.0	10.0	6.0	0.50	GFM-0506-06
5.0		6.0	10.0	15.3	0.50	GFM-0506-15
5.0		7.0	11.0	3.5	1.00	GFM-0507-03
5.0		7.0	11.0	4.0	1.00	GFM-0507-04
5.0		7.0	15.0	4.0	1.00	GFM-050715-04
5.0		7.0	11.0	5.0	1.00	GFM-0507-05
5.0	+0.020 +0.068	7.0	9.5	5.0	1.00	GFM-050709-05
5.0		7.0	11.0	7.0	1.00	GFM-0507-07
5.0		7.0	11.0	11.0	1.00	GFM-0507-11
5.0		7.0	11.0	14.5	1.00	GFM-0507-145
5.0		7.0	11.0	30.0	1.00	GFM-0507-30
6.0	+0.010	7.0	11.0	2.4	0.50	GFM-0607-024
6.0	+0.040	7.0	11.0	4.5	0.50	GFM-0607-045

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
6.0	+0.010	7.0	11.0	6.0	0.50	GFM-0607-06
6.0	+0.040	7.0	11.0	10.0	0.50	GFM-0607-10
6.0		8.0	12.0	2.5	1.00	GFM-0608-025
6.0		8.0	14.0	2.8	1.00	GFM-060814-028
6.0		8.0	12.0	4.0	1.00	GFM-0608-04
6.0		8.0	12.0	4.8	1.00	GFM-0608-048
6.0		8.0	12.0	5.0	1.00	GFM-0608-05
6.0	+0.020	8.0	12.0	6.0	1.00	GFM-0608-06
6.0	+0.068	8.0	12.0	7.0	1.00	GFM-0608-07
6.0		8.0	12.0	8.0	1.00	GFM-0608-08
6.0		8.0	12.0	10.0	1.00	GFM-0608-10
6.0		8.0	14.0	12.0	1.00	GFM-060814-12
6.0		8.0	12.0	25.0	1.00	GFM-0608-25
6.0		8.0	12.0	35.0	1.00	GFM-0608-35
7.0		8.0	12.0	1.7	0.50	GFM-0708-017
7.0	+0.013	8.0	12.0	3.0	0.50	GFM-0708-03
7.0	+0.049	8.0	12.0	6.0	0.50	GFM-0708-06
7.0		8.0	12.0	8.0	0.50	GFM-0708-08
7.0		9.0	15.0	3.5	1.00	GFM-0709-035
7.0		9.0	15.0	6.0	1.00	GFM-0709-06
7.0	+0.025 +0.083	9.0	15.0	10.0	1.00	GFM-0709-10
7.0		9.0	19.0	10.0	1.00	GFM-070919-10
7.0		9.0	15.0	12.0	1.00	GFM-0709-12
8.0		9.0	15.0	3.0	0.50	GFM-0809-03
8.0		9.0	13.0	3.5	0.50	GFM-0809-035
8.0	+0.013 +0.049	9.0	13.0	5.5	0.50	GFM-0809-055
8.0		9.0	13.0	8.0	0.50	GFM-0809-08
8.0		9.0	13.0	12.0	0.50	GFM-0809-12

[3] After press-fit. *Testing methods, page 61*

Product range

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
8.0		10.0	15.0	3.0	1.00	GFM-0810-03
8.0	+0.025 +0.083	10.0	18.0	3.0	1.00	GFM-081018-03
8.0		10.0	15.0	4.0	1.00	GFM-0810-04
8.0	+0.040 +0.098	10.0	14.0	5.0	1.00	GFM-081014-05
8.0		10.0	15.0	5.5	1.00	GFM-0810-05
8.0		10.0	14.0	6.0	1.00	GFM-081014-06
8.0		10.0	15.0	6.5	1.00	GFM-0810-065
8.0	+0.025	10.0	15.0	7.5	1.00	GFM-0810-07
8.0	+0.083	10.0	13.0	8.0	1.00	GFM-081013-08
8.0		10.0	14.0	8.0	1.00	GFM-081014-08
8.0		10.0	15.0	9.5	1.00	GFM-0810-09
8.0		10.0	15.0	10.0	1.00	GFM-0810-10
8.0	+0.040 +0.098	10.0	14.0	10.0	1.00	GFM-081014-10
8.0		10.0	14.0	11.0	1.00	GFM-0810-11
8.0		10.0	16.0	11.5	1.50	GFM-081016-11
8.0		10.0	12.0	12.5	1.00	GFM-081012-125
8.0	+0.025	10.0	15.0	15.0	1.00	GFM-0810-15
8.0	+0.083	10.0	16.0	15.0	1.50	GFM-081016-15
8.0		10.0	17.0	15.0	1.00	GFM-081017-15
8.0		10.0	15.0	25.0	1.00	GFM-0810-25
8.0		10.0	15.0	30.0	1.00	GFM-0810-30
8.0	+0.040	12.0	16.0	6.0	2.00	GFM-0812-06
8.0	+0.130	12.0	21.0	8.0	2.00	GFM-081221-08
9.0	+0.013	10.0	15.0	6.5	0.50	GFM-0910-065
9.0	+0.049	10.0	15.0	17.5	0.50	GFM-0910-17
10.0	+0.013 +0.046	11.0	20.0	3.5	0.50	GFM-1011-03
10.0	+0.013	11.0	15.0	4.4	0.50	GFM-1011-044
10.0	+0.049	11.0	15.0	10.0	0.50	GFM-1011-10
10.0		12.0	18.0	3.5	1.00	GFM-1012-035
10.0		12.0	18.0	4.0	1.00	GFM-1012-04
10.0		12.0	18.0	5.0	1.00	GFM-1012-05
10.0		12.0	18.0	6.0	1.00	GFM-1012-06
10.0		12.0	16.0	6.0	1.00	GFM-101216-06
10.0		12.0	18.0	7.0	1.00	GFM-1012-07
10.0	+0.025	12.0	18.0	9.0	1.00	GFM-1012-09
10.0	+0.083	12.0	16.0	9.0	1.00	GFM-101216-09
10.0		12.0	18.0	10.0	1.00	GFM-1012-10
10.0		12.0	18.0	12.0	1.00	GFM-1012-12
10.0		12.0	15.0	12.0	1.00	GFM-101215-12
10.0		12.0	18.0	15.0	1.00	GFM-1012-15
10.0		12.0	16.0	15.0	1.00	GFM-101216-15
10.0		12.0	18.0	17.0	1.00	GFM-1012-17
11.0	+0.016 +0.059	12.0	16.0	6.0	0.50	GFM-1112-06
12.0		13.0	17.0	3.0	0.50	GFM-1213-03
12.0		13.0	17.0	12.0	0.50	GFM-1213-12

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
12.0	+0.016 +0.059	13.0	15.0	12.0	0.50	GFM-121315-12
12.0		14.0	20.0	3.0	1.00	GFM-1214-03
12.0		14.0	18.0	4.0	1.00	GFM-121418-04
12.0		14.0	20.0	5.0	1.00	GFM-1214-05
12.0		14.0	20.0	6.0	1.00	GFM-1214-06
12.0		14.0	20.0	7.0	1.00	GFM-1214-07
12.0		14.0	18.0	8.0	1.00	GFM-121418-08
12.0		14.0	20.0	9.0	1.00	GFM-1214-09
12.0		14.0	20.0	10.0	1.00	GFM-1214-10
12.0		14.0	18.0	10.0	1.00	GFM-121418-10
12.0		14.0	20.0	11.0	1.00	GFM-1214-11
12.0		14.0	20.0	12.0	1.00	GFM-1214-12
12.0		14.0	18.0	12.0	1.00	GFM-121418-12
12.0		14.0	20.0	15.0	1.00	GFM-1214-15
12.0		14.0	18.0	15.0	1.00	GFM-121418-15
12.0		14.0	20.0	17.0	1.00	GFM-1214-17
12.0	+0.032 +0.102	14.0	20.0	20.0	1.00	GFM-1214-20
12.0		14.0	18.0	20.0	1.00	GFM-121418-20
12.0		14.0	20.0	24.0	1.00	GFM-1214-24
12.0		14.0	20.0	31.0	1.00	GFM-1214-31
12.0		14.0	20.0	40.0	1.00	GFM-1214-40
13.0		15.0	22.0	6.0	1.00	GFM-1315-06
13.0		15.0	22.0	8.0	1.00	GFM-1315-08
13.0		15.0	22.0	40.0	1.00	GFM-131522-40
14.0		16.0	22.0	3.0	1.00	GFM-1416-03
14.0		16.0	22.0	4.0	1.00	GFM-1416-04
14.0		16.0	22.0	6.0	1.00	GFM-1416-06
14.0		16.0	22.0	8.0	1.00	GFM-1416-08
14.0		16.0	22.0	10.0	1.00	GFM-1416-10
14.0		16.0	22.0	12.0	1.00	GFM-1416-12
14.0		16.0	22.0	17.0	1.00	GFM-1416-17
14.0		16.0	22.0	21.0	1.00	GFM-1416-21
15.0		16.0	20.0	2.0	0.50	GFM-1516-02
15.0	+0.016	16.0	20.0	2.5	0.50	GFM-1516-025
15.0	+0.059	16.0	20.0	3.0	0.50	GFM-1516-03
15.0		16.0	20.0	15.0	0.50	GFM-1516-15
15.0		17.0	23.0	4.0	1.00	GFM-1517-04
15.0		17.0	23.0	4.5	1.00	GFM-1517-045
15.0		17.0	23.0	5.0	1.00	GFM-1517-05
15.0		17.0	23.0	9.0	1.00	GFM-1517-09
15.0		17.0	23.0	12.0	1.00	GFM-1517-12
15.0	+0.032 +0.102	17.0	23.0	17.0	1.00	GFM-1517-17
15.0		17.0	23.0	20.0	1.00	GFM-1517-20
15.0		18.0	24.0	32.0	1.50	GFM-151824-32
16.0		18.0	24.0	4.0	1.00	GFM-1618-04
16.0		18.0	24.0	5.0	1.00	GFM-1618-05
16.0		18.0	24.0	6.0	1.00	GFM-1618-060

[3] After press-fit. *Testing methods, page 61*

Bearing technology | Plain bearings | iglidur® G

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
16.0		18.0	24.0	9.0	1.00	GFM-1618-09
16.0		18.0	24.0	12.0	1.00	GFM-1618-12
16.0		18.0	24.0	16.0	1.00	GFM-1618-16
16.0		18.0	24.0	17.0	1.00	GFM-1618-17
16.0		18.0	24.0	21.0	1.00	GFM-1618-21
17.0		19.0	25.0	9.0	1.00	GFM-1719-09
17.0		19.0	25.0	16.0	1.00	GFM-1719-16
17.0		19.0	25.0	25.0	1.00	GFM-1719-25
18.0		20.0	26.0	4.0	1.00	GFM-1820-04
18.0	+0.032 +0.102	20.0	26.0	6.0	1.00	GFM-1820-06
18.0		20.0	22.0	6.0	1.00	GFM-182022-06
18.0		20.0	26.0	9.0	1.00	GFM-1820-09
18.0		20.0	26.0	11.0	1.00	GFM-1820-11
18.0		20.0	26.0	12.0	1.00	GFM-1820-12
18.0		20.0	26.0	17.0	1.00	GFM-1820-17
18.0		20.0	26.0	22.0	1.00	GFM-1820-22
18.0		20.0	26.0	30.0	1.00	GFM-1820-30
18.0		20.0	26.0	32.0	1.00	GFM-1820-32
18.0		22.0	26.0	28.0	2.00	GFM-1822-28
20.0		21.0	26.0	3.5	0.50	GFM-2021-035
20.0	+0.020 +0.072	21.0	25.0	15.0	0.50	GFM-2021-15
20.0		21.0	25.0	20.0	0.50	GFM-2021-20
20.0		23.0	30.0	7.0	1.50	GFM-2023-07
20.0		23.0	26.0	7.0	1.50	GFM-202326-07
20.0		23.0	30.0	11.5	1.50	GFM-2023-11
20.0		23.0	28.0	15.0	1.50	GFM-202328-15
20.0		23.0	30.0	16.5	1.50	GFM-2023-16
20.0		23.0	29.0	20.0	1.50	GFM-202329-20
20.0		23.0	30.0	21.5	1.50	GFM-2023-21
20.0	+0.040 +0.124	23.0	26.0	21.5	1.50	GFM-202326-21
22.0		24.0	30.0	25.0	1.00	GFM-2224-25
22.0		25.0	29.0	4.5	1.50	GFM-222529-045
22.0		25.0	30.0	21.5	1.50	GFM-222530-215
22.0		25.0	30.0	25.0	1.50	GFM-222530-25
22.0		25.0	35.0	31.5	1.50	GFM-222535-315
24.0		27.0	32.0	7.0	1.50	GFM-2427-07
24.0		27.0	32.0	10.5	1.50	GFM-2427-10
25.0	+0.020 +0.072	26.0	30.0	25.0	0.50	GFM-2526-25
25.0		27.0	32.0	7.0	1.00	GFM-2527-07
25.0		27.0	32.0	48.0	1.00	GFM-2527-48
25.0		28.0	30.0	10.0	1.50	GFM-252830-10
25.0		28.0	35.0	11.5	1.50	GFM-2528-11
25.0	+0.040 +0.124	28.0	35.0	16.5	1.50	GFM-2528-16
25.0		28.0	35.0	21.5	1.50	GFM-2528-21
26.0		30.0	37.0	12.0	2.00	GFM-2630-12
27.0		30.0	38.0	20.0	1.50	GFM-2730-20
28.0		30.0	35.0	10.0	1.00	GFM-2830-10
28.0		30.0	36.0	31.0	1.00	GFM-283036-31
28.0		30.0	35.0	36.0	1.00	GFM-2830-36
28.0		30.0	35.0	48.0	1.00	GFM-2830-48
28.0		32.0	39.0	20.0	2.00	GFM-283239-20
28.0		32.0	50.0	35.0	2.00	GFM-283250-35
30.0		31.0	36.0	20.0	0.50	GFM-3031-20
30.0		31.0	35.0	30.0	0.50	GFM-3031-30
30.0		32.0	37.0	4.0	1.00	GFM-3032-04
30.0	+0.040 +0.124	32.0	37.0	12.0	1.00	GFM-3032-12
30.0		32.0	37.0	17.5	1.00	GFM-3032-17
30.0		32.0	37.0	22.0	1.00	GFM-3032-22
30.0		34.0	42.0	9.0	2.00	GFM-3034-09
30.0		34.0	40.0	10.0	2.00	GFM-303440-10
30.0		34.0	42.0	16.0	2.00	GFM-3034-16
30.0		34.0	42.0	20.0	2.00	GFM-3034-20
30.0		34.0	42.0	26.0	2.00	GFM-3034-26
30.0		34.0	42.0	37.0	2.00	GFM-3034-37
32.0		36.0	40.0	16.0	2.00	GFM-3236-16
32.0		36.0	40.0	26.0	2.00	GFM-3236-26
34.0		38.0	50.0	35.0	2.00	GFM-343850-35
35.0		39.0	47.0	5.8	2.00	GFM-3539-058
35.0		39.0	47.0	7.0	2.00	GFM-3539-07
35.0		39.0	47.0	12.0	2.00	GFM-3539-12
35.0		39.0	47.0	16.0	2.00	GFM-3539-16
35.0		39.0	47.0	26.0	2.00	GFM-3539-26
35.0		39.0	47.0	36.0	2.00	GFM-3539-36
38.0		42.0	54.0	10.0	2.00	GFM-3842-10
38.0		42.0	54.0	22.0	2.00	GFM-3842-22
40.0		44.0	52.0	7.0	2.00	GFM-4044-07
40.0	+0.050 +0.150	44.0	52.0	14.0	2.00	GFM-4044-14
40.0		44.0	52.0	20.0	2.00	GFM-4044-20
40.0		44.0	52.0	30.0	2.00	GFM-4044-30
40.0		44.0	52.0	40.0	2.00	GFM-4044-40
40.0		44.0	52.0	50.0	2.00	GFM-4044-50
40.0		46.0	50.0	20.0	2.00	GFM-4046-20
42.0		46.0	53.0	19.0	2.00	GFM-4246-19
45.0		50.0	58.0	25.0	2.00	GFM-4550-25
45.0		50.0	58.0	30.0	2.00	GFM-4550-30
45.0		50.0	58.0	50.0	2.00	GFM-4550-50
50.0		55.0	63.0	7.0	2.00	GFM-5055-07
50.0		55.0	63.0	10.0	2.00	GFM-5055-10
50.0		55.0	63.0	25.0	2.00	GFM-5055-25
50.0		55.0	63.0	40.0	2.00	GFM-5055-40
50.0		55.0	63.0	50.0	2.00	GFM-5055-50
60.0		65.0	73.0	7.0	2.00	GFM-6065-07
60.0	+0.060 +0.180	65.0	73.0	22.0	2.00	GFM-6065-22
60.0		65.0	73.0	30.0	2.00	GFM-6065-30
60.0		65.0	73.0	50.0	2.00	GFM-6065-50

[3] After press-fit. *Testing methods, page 61*

EN 09/2023

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+130°C
80MPa

Product range

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
60.0		65.0	80.0	62.0	2.00	GFM-606580-62
65.0		70.0	78.0	50.0	2.00	GFM-6570-50
70.0		75.0	83.0	50.0	2.00	GFM-7075-50
70.0	+0.060 +0.180	75.0	83.0	85.5	2.00	GFM-7075-855
75.0		80.0	88.0	50.0	2.00	GFM-7580-50
80.0		85.0	93.0	50.0	2.50	GFM-8085-50
80.0		85.0	93.0	100.0	2.50	GFM-8085-100
85.0		90.0	98.0	100.0	2.50	GFM-8590-100
90.0	+0.072	95.0	103.0	100.0	2.50	GFM-9095-100
95.0	+0.212	100.0	108.0	100.0	2.50	GFM-95100-100
100.0		105.0	113.0	42.5	2.50	GFM-100105-425
100.0		105.0	113.0	100.0	2.50	GFM-100105-100
110.0	+0.072	115.0	123.0	100.0	2.50	GFM-110115-100
120.0	+0.212	125.0	133.0	80.0	2.50	GFM-120125-80
120.0		125.0	133.0	100.0	2.50	GFM-120125-100
125.0		130.0	138.0	100.0	2.50	GFM-125130-100
130.0	+0.085	135.0	143.0	100.0	2.50	GFM-130135-100
140.0	+0.245	145.0	153.0	100.0	2.50	GFM-140145-100
150.0		155.0	163.0	40.0	2.50	GFM-150155-40
150.0		155.0	163.0	100.0	2.50	GFM-150155-100
195.0	+0.100 +0.285	205.0	240.0	65.0	5.00	GFM-195205240-65

[3] After press-fit. *Testing methods, page 61*

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Discount scaling		
1-9	50-99	500-999
10-24	100-199	1,000-2,499
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No minimum order value.
No low-quantity surcharges.
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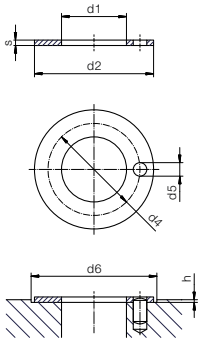
Thrust washer (form T)



Dimensions according to ISO 3547-1 and special dimensions

Order example: GTM-0408-005 – no minimum order quantity.
G iglidur® material T Thrust washer M Metric 04 Inner Ø d1 08 Outer Ø d2 005 Height s

d1 +0.25 [mm]	d2 -0.25 [mm]	d4 -0.12 +0.12 [mm]	d5 +0.375 +0.125 [mm]	h +0.2/-0.2 [mm]	d6 +0.12 [mm]	Øs -0.05 [mm]	Part No.
4	8	[4]	[4]	0.2	8	0.5	GTM-0408-005
4	9	[4]	[4]	0.3	9	0.6	GTM-0409-006
4	9	[4]	[4]	0.3	9	1.6	GTM-0409-016
4	10	[4]	[4]	0.2	10	0.5	GTM-0410-005
4	11	[4]	[4]	0.2	11	0.5	GTM-0411-005
5	9.5	[4]	[4]	0.3	9.5	0.6	GTM-0509-006
6	12	[4]	[4]	1	12	1.5	GTM-0612-015
6	15	[4]	[4]	1	15	1.5	GTM-0615-015
6	20	13	1.5	1	20	1.5	GTM-0620-015
6.2	11	[4]	[4]	0.7	11	1	GTM-0611-010
7	12	[4]	[4]	0.2	12	0.5	GTM-0712-005
7	13	[4]	[4]	0.2	13	0.5	GTM-0713-005
8	15	[4]	[4]	0.2	15	0.5	GTM-0815-005
8	15	[4]	[4]	1	15	1.5	GTM-0815-015
8	18	[4]	[4]	0.7	18	1	GTM-0818-010
8	18	13	1.5	1	18	1.5	GTM-0818-015
8	18	[4]	[4]	1.5	18	2	GTM-0818-020
9	13	[4]	[4]	0.7	13	1	GTM-0913-010
9	18	13.5	1.5	1	18	1.5	GTM-0918-015
10	17.8	[4]	[4]	0.2	17.8	0.5	GTM-1018-005
10	18	[4]	[4]	0.7	18	1	GTM-1018-010
10	18	[4]	[4]	1	18	1.5	GTM-1018-015
10	18	[4]	[4]	1.5	18	2	GTM-1018-020
10	20	[4]	[4]	0.7	20	1.5	GTM-1020-015
11	15	[4]	[4]	0.7	15	1	GTM-1115-010
11	27	[4]	[4]	0.2	27	0.5	GTM-1127-005
12	24	18	1.5	1	24	1.5	GTM-1224-015
12	30	[4]	[4]	1	30	1.5	GTM-1230-015

[4] Design without fixing hole

EN 09/2023

Product range

d1 +0.25 [mm]	d2 -0.25 [mm]	d4 -0.12 +0.12 [mm]	d5 +0.375 +0.125 [mm]	h +0.2/-0.2 [mm]	d6 +0.12 [mm]	Øs -0.05 [mm]	Part No.
14	20	[4]	[4]	1	20	1.5	GTM-1420-015
14	26	20	2	1	26	1.5	GTM-1426-015
15	19	[4]	[4]	0.5	19	0.8	GTM-1519-008
15	22	[4]	[4]	0.5	22	0.8	GTM-1522-008
15	24	19.5	1.5	1	24	1.5	GTM-1524-015
15	24	[4]	[4]	2	24	2.75	GTM-1524-0275
16	28	[4]	[4]	0.7	28	1	GTM-1628-010
16	30	22	2	1	30	1.5	GTM-1630-015
18	32	25	2	1	32	1.5	GTM-1832-015
20	36	28	3	1	36	1.5	GTM-2036-015
22	30	[4]	[4]	1	30	1.5	GTM-2230-015
22	38	30	3	1	38	1.5	GTM-2238-015
24	42	33	3	1	42	1.5	GTM-2442-015
26	44	35	3	1	44	1.5	GTM-2644-015
28	48	38	4	1	48	1.5	GTM-2848-015
28.5	35.8	[4]	[4]	0.2	35.8	0.5	GTM-2835-005
32	45.8	[4]	[4]	0.7	45.8	1	GTM-3246-010
32	54	43	4	1	54	1.5	GTM-3254-015
38	62	50	4	1	62	1.5	GTM-3862-015
40	60	[4]	[4]	[4]	60	3.5	GTM-4060-035
42	66	54	4	1	66	1.5	GTM-4266-015
48	60	[4]	[4]	1.5	74	2	GTM-4860-020
48	74	61	4	1.5	74	2	GTM-4874-020
52	78	65	4	1.5	78	2	GTM-5278-020
52.5	69	[4]	[4]	1.5	69	2	GTM-52569-020
62	78	[4]	[4]	1.5	78	2	GTM-6278-020
62	90	[4]	[4]	0.7	90	1	GTM-6290-010
62	90	76	4	1.5	90	2	GTM-6290-020
68	81	[4]	[4]	1.5	81	2	GTM-6881-020
78	114	[4]	[4]	1	114	1.5	GTM-78114-015
80.5	114	[4]	[4]	1	114	1.5	GTM-80114-015

[4] Design without fixing hole

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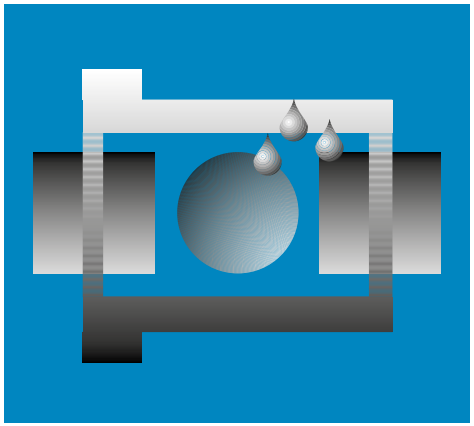

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- When low moisture absorption is fundamental
- For low to medium speeds
- For pivoting and rotational movements

When not to use it?

- When high shock, impact and edge loads occur
  iglidur® G
- When lowest wear is required
  iglidur® W300
- When the ultimate media resistance is required
  iglidur® X
- For underwater applications
  iglidur® H370

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Bearing technology | Plain bearings | iglidur® G1

Ø
4.0-50.0mm

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

More universal
The advanced development of iglidur® G

The most successful plastic bearing in the world - iglidur® G - improved all round: iglidur® G1, the new standard.

- Double service life at high loads
- Up to 4 times less wear at low loads
- Continuous operating temperatures up to +180°C
- Press-fit up to +120°C (iglidur® G: up to +80°C)
- Moisture absorption reduced by 50%

Typical application areas

- Mechanical engineering
- Automation
- Sports and leisure
- Automotive industry
- Mechatronics

Descriptive technical specifications		
Wear resistance at +23°C	–	+
Wear resistance at +90°C	–	+
Wear resistance at +150°C	–	+
Slide property	–	+
Wear resistance under water	–	+
Media resistance	–	+
Resistant to edge pressures	–	+
Resistant to shock and impact loads	–	+
Dirt resistance	–	+

Online product finder
www.igus.eu/iglidur-finder

Online service life calculation
www.igus.eu/iglidur-expert

EN 09/2023

iglidur® G1
+180 °C
91MPa

Technical data

General properties			Testing method
Density	g/cm³	1.58	
Colour		grey	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.2	DIN 53495
Max. moisture absorption	% weight	1.7	
Coefficient of friction, dynamic, against steel	µ	0.10-0.29	
pv value, max. (dry)	MPa · m/s	0.60	
Mechanical properties			
Flexural modulus	MPa	11,486	DIN 53457
Flexural strength at +20°C	MPa	178	DIN 53452
Compressive strength	MPa	115	
Max. permissible surface pressure (+20°C)	MPa	91	
Shore D hardness		81	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+180	
Max. application temperature short-term	°C	+220	
Min. application temperature	°C	-40	
Thermal conductivity	W/m · K	0.25	ASTM C 177
Coefficient of thermal expansion (at +23°C)	$K^{-1} \cdot 10^{-5}$	3.7	DIN 53752
Electrical properties			
Specific transitional resistance	Ωcm	$> 10^9$	DIN IEC 93
Surface resistance	Ω	$> 10^9$	DIN 53482

Table 01: Material properties

-40°C up to +180°C

91MPa

HB

RoHS-II

ISO 3547-1

The requirement profile is demanding: comprehensive advanced development of the successful all-round classic iglidur® G. This has been achieved especially in terms of moisture absorption, thermal properties and consistently improved wear resistance. Only with shock, impact and edge loads, the robustness of iglidur® G could not quite be achieved.

Moisture absorption

The moisture absorption of iglidur® G1 plain bearings in ambient conditions is approximately 0.2 % weight. The saturation limit submerged in water is 1.7% weight. This must be taken into account for these types of applications.

Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® G1 bearings.

Radiation resistance

Plain bearings made from iglidur® G1 are resistant up to a radiation intensity of $3 \cdot 10^2$ Gy.

Resistance to weathering

iglidur® G1 plain bearings have not yet been tested for their resistance to weathering. Please consult igus® if you're planning to use them outdoors.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® G1 plain bearings decreases. Diagram 02 shows this inverse relationship. With the long-term permitted application temperature of +180°C, the permitted surface pressure still amounts to 40MPa. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® G1 at radial loads. The plastic deformation is minimal up to a pressure of approximately 100MPa. However, it is also dependent on the service time.
Surface pressure, page 45

EN 09/2023

Bearing technology | Plain bearings | iglidur® G1

Permissible surface speeds

iglidur® G1 has been developed for low to medium surface speeds. The maximum values shown in table 03 can only be achieved at low pressures. At the given speeds, friction can cause a temperature increase to maximum permissible levels. In practice, though, this level is rarely reached due to varying application conditions.

Surface speed, page 48

Temperature

The ambient temperatures strongly influence the properties of plain bearings. The temperatures prevailing in the bearing system also have an influence on the wear. With increasing temperatures, the wear increases and this effect is significant when temperatures rise over +120°C. For temperatures over 120°C an additional securing of the bearings in the housing is required.

Application temperatures, page 53
Additional securing, page 53

Friction and wear

The coefficient of friction μ of a plain bearing among other factors is influenced by the surface speed and the load (diagrams 04 and 05).

Coefficient of friction and surfaces, page 51
Wear resistance, page 54

Shaft materials

The friction and wear are also dependent, to a large degree, on the mating partner. Shafts that are too smooth increase both the coefficient of friction and the wear of the bearing. For iglidur® G1 a ground surface with an average surface finish Ra = 0.8μm is recommended. Diagram 06 shows results of testing different shaft materials with plain bearings made from iglidur® G1. It can be observed that iglidur® G1 achieves good to very good wear results with all shaft materials. The results for stainless steel types are most likely slightly lower. Diagram 07 compares the wear in rotating and pivoting applications. As with many of the iglidur® materials, wear rate is better in pivoting applications.

Shaft materials, page 56

Installation tolerances

iglidur® G1 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the F10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 61

Chemicals	Resistance
Alcohols	+ up to 0
Diluted acids	0 up to –
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	–
Strong alkalines	0

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1170

		Rotating	Oscillating	linear
Long-term	m/s	1.3	1.0	5.0
Short-term	m/s	2.5	1.8	6.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.10-0.29	0.09	0.04	0.04

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

	Housing		Plain bearings		Shaft	
Ø d1 [mm]	H7 [mm]		F10 [mm]		h9 [mm]	
0-3	+0.000	+0.010	+0.006	+0.046	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.010	+0.058	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.013	+0.071	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.016	+0.086	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.020	+0.104	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.025	+0.125	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.030	+0.150	-0.074	+0.000
> 80-120	+0.000	+0.035	-0.036	+0.176	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.043	+0.203	+0.000	+0.100

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

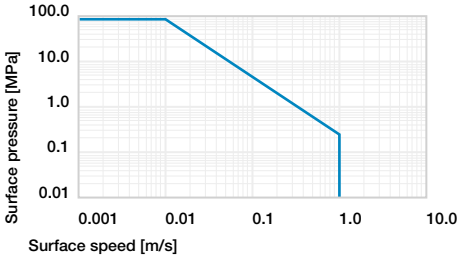


Diagram 01: Permissible pv values for iglidur® G plain bearing with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing.

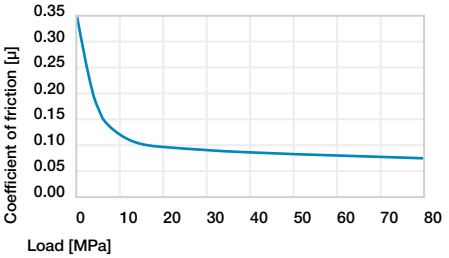


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

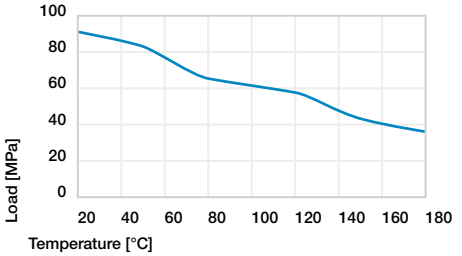


Diagram 02: Maximum recommended surface pressure as a function of temperature (91MPa at +20°C)

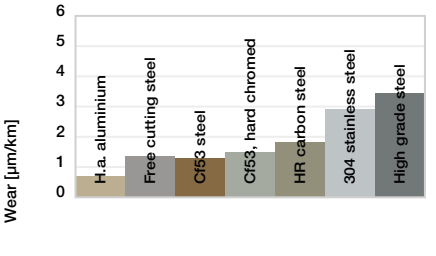


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

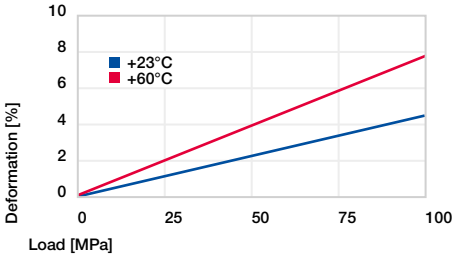


Diagram 03: Deformation under pressure and temperature

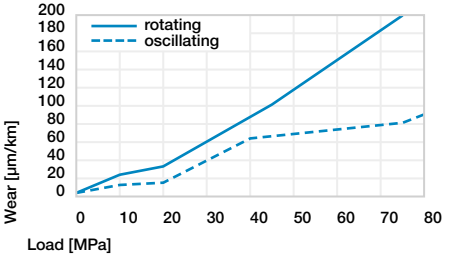


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

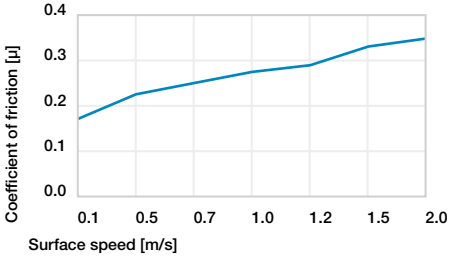
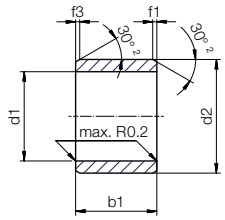


Diagram 04: Coefficient of friction as a function of the surface speed, p = 1MPa

Bearing technology | Plain bearings | iglidur® G1

Sleeve bearings (form S)



2) Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30	Ø > 30
f1/f3 [mm]	0.3	0.5	0.8	1.2

Dimensions according to ISO 3547-1 and special dimensions

Order example: G1SM-0405-04 – no minimum order quantity.
G1 iglidur® material S Cylindrical M Metric 04 Inner Ø d1 05 Outer Ø d2 04 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
4.0		5.5	4.0	G1SM-0405-04
4.0		5.5	6.0	G1SM-0405-06
5.0	+0.010	7.0	5.0	G1SM-0507-05
5.0	+0.058	7.0	10.0	G1SM-0507-10
6.0		8.0	6.0	G1SM-0608-06
6.0		8.0	8.0	G1SM-0608-08
6.0		8.0	10.0	G1SM-0608-10
8.0		10.0	8.0	G1SM-0810-08
8.0		10.0	10.0	G1SM-0810-10
8.0		10.0	12.0	G1SM-0810-12
10.0	+0.013	12.0	8.0	G1SM-1012-08
10.0	+0.071	12.0	10.0	G1SM-1012-10
10.0		12.0	12.0	G1SM-1012-12
10.0		12.0	15.0	G1SM-1012-15
10.0		12.0	20.0	G1SM-1012-20
12.0		14.0	10.0	G1SM-1214-10
12.0		14.0	12.0	G1SM-1214-12
12.0		14.0	15.0	G1SM-1214-15
12.0		14.0	20.0	G1SM-1214-20
13.0		15.0	10.0	G1SM-1315-10
13.0		15.0	20.0	G1SM-1315-20
14.0	+0.016	16.0	15.0	G1SM-1416-15
14.0	+0.086	16.0	20.0	G1SM-1416-20
14.0		16.0	25.0	G1SM-1416-25
15.0		17.0	15.0	G1SM-1517-15
15.0		17.0	20.0	G1SM-1517-20
15.0		17.0	25.0	G1SM-1517-25
16.0		18.0	15.0	G1SM-1618-15
16.0		18.0	20.0	G1SM-1618-20

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
16.0		18.0	25.0	G1SM-1618-25
18.0	+0.016	20.0	15.0	G1SM-1820-15
18.0	+0.086	20.0	20.0	G1SM-1820-20
18.0		20.0	25.0	G1SM-1820-25
20.0		23.0	10.0	G1SM-2023-10
20.0		23.0	15.0	G1SM-2023-15
20.0		23.0	20.0	G1SM-2023-20
20.0		23.0	25.0	G1SM-2023-25
20.0		23.0	30.0	G1SM-2023-30
22.0		25.0	15.0	G1SM-2225-15
22.0		25.0	20.0	G1SM-2225-20
22.0		25.0	25.0	G1SM-2225-25
22.0		25.0	30.0	G1SM-2225-30
24.0		27.0	15.0	G1SM-2427-15
24.0		27.0	20.0	G1SM-2427-20
24.0	+0.020	27.0	25.0	G1SM-2427-25
24.0	+0.104	27.0	30.0	G1SM-2427-30
25.0		28.0	15.0	G1SM-2528-15
25.0		28.0	20.0	G1SM-2528-20
25.0		28.0	25.0	G1SM-2528-25
25.0		28.0	30.0	G1SM-2528-30
28.0		32.0	20.0	G1SM-2832-20
28.0		32.0	25.0	G1SM-2832-25
28.0		32.0	25.0	G1SM-2832-30
30.0		34.0	20.0	G1SM-3034-20
30.0		34.0	25.0	G1SM-3034-25
30.0		34.0	30.0	G1SM-3034-30
30.0		34.0	40.0	G1SM-3034-40

3) After press-fit. *Testing methods, page 61*

EN 09/2023

Product range

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
32.0		36.0	20.0	G1SM-3236-20
32.0		36.0	30.0	G1SM-3236-30
32.0		36.0	40.0	G1SM-3236-40
35.0		39.0	20.0	G1SM-3539-20
35.0	+0.025	39.0	30.0	G1SM-3539-30
35.0	+0.125	39.0	40.0	G1SM-3539-40
35.0		39.0	50.0	G1SM-3539-50
40.0		44.0	20.0	G1SM-4044-20
40.0		44.0	30.0	G1SM-4044-30
40.0		44.0	40.0	G1SM-4044-40

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
40.0		44.0	50.0	G1SM-4044-50
45.0		50.0	20.0	G1SM-4550-20
45.0		50.0	30.0	G1SM-4550-30
45.0		50.0	40.0	G1SM-4550-40
45.0	+0.025	50.0	50.0	G1SM-4550-50
50.0	+0.125	55.0	20.0	G1SM-5055-20
50.0		55.0	30.0	G1SM-5055-30
50.0		55.0	40.0	G1SM-5055-40
50.0		55.0	50.0	G1SM-5055-50
50.0		55.0	60.0	G1SM-5055-60

3) After press-fit. *Testing methods, page 61*

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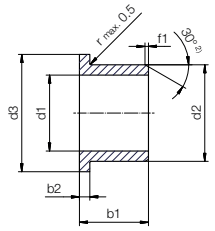
Bearing technology | Plain bearings | iglidur® G1

Flange bearings (form F)



[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2

Dimensions according to ISO 3547-1 and special dimensions

Order example: G1FM-0608-04 – no minimum order quantity.
G1 iglidur® material F With flange M Metric 06 Inner Ø d1 08 Outer Ø d2 04 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
6.0	+0.010 +0.058	8.0	12.0	4.0	1.00	G1FM-0608-04
6.0		8.0	12.0	8.0	1.00	G1FM-0608-08
8.0	+0.013 +0.071	10.0	15.0	5.5	1.00	G1FM-0810-05
8.0		10.0	15.0	7.5	1.00	G1FM-0810-07
8.0		10.0	15.0	9.5	1.00	G1FM-0810-09
10.0		12.0	18.0	7.0	1.00	G1FM-1012-07
10.0		12.0	18.0	9.0	1.00	G1FM-1012-09
10.0		12.0	18.0	12.0	1.00	G1FM-1012-12
10.0		12.0	18.0	17.0	1.00	G1FM-1012-17
12.0	+0.016 +0.086	14.0	20.0	7.0	1.00	G1FM-1214-07
12.0		14.0	20.0	9.0	1.00	G1FM-1214-09
12.0		14.0	20.0	12.0	1.00	G1FM-1214-12
12.0		14.0	20.0	17.0	1.00	G1FM-1214-17
14.0		16.0	22.0	12.0	1.00	G1FM-1416-12
14.0		16.0	22.0	17.0	1.00	G1FM-1416-17
15.0		17.0	23.0	9.0	1.00	G1FM-1517-09
15.0		17.0	23.0	12.0	1.00	G1FM-1517-12
15.0		17.0	23.0	17.0	1.00	G1FM-1517-17
16.0		18.0	24.0	12.0	1.00	G1FM-1618-12
16.0		18.0	24.0	17.0	1.00	G1FM-1618-17
18.0		20.0	26.0	12.0	1.00	G1FM-1820-12
18.0		20.0	26.0	17.0	1.00	G1FM-1820-17
18.0		20.0	26.0	22.0	1.00	G1FM-1820-22
20.0	+0.020 +0.104	23.0	30.0	11.5	1.50	G1FM-2023-11
20.0		23.0	30.0	16.5	1.50	G1FM-2023-16
20.0		23.0	30.0	21.5	1.50	G1FM-2023-21
25.0		28.0	35.0	11.5	1.50	G1FM-2528-11
25.0		28.0	35.0	16.5	1.50	G1FM-2528-16

[3] After press-fit. *Testing methods, page 61*

EN 09/2023

iglidur® G1
+180 °C
91MPa

Product range

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
25.0	+0.020 +0.104	28.0	35.0	21.5	1.50	G1FM-2528-21
30.0		34.0	42.0	16.0	2.00	G1FM-3034-16
30.0		34.0	42.0	26.0	2.00	G1FM-3034-26
35.0	+0.025 +0.125	39.0	47.0	16.0	2.00	G1FM-3539-16
35.0		39.0	47.0	26.0	2.00	G1FM-3539-26
40.0		44.0	52.0	30.0	2.00	G1FM-4044-30
40.0		44.0	52.0	40.0	2.00	G1FM-4044-40
45.0		50.0	58.0	50.0	2.00	G1FM-4550-50

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25-49	200-499	2,500-4,999

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The robust all-rounder according to ISO 2795

Excellent vibration dampening

iglidur® M250

When to use it?

- When the bearings are exposed to large amounts of dirt
- When high vibration dampening is necessary
- For low to medium speeds
- When mechanical reaming of the bore is necessary

When not to use it?

- For applications in wet areas
  iglidur® H
- When very high precision is necessary
  iglidur® P
- For very smooth shafts
  iglidur® J
- When a cost-effective wear-resistant plain bearing is required
  iglidur® R

EN 09/2023

EN 09/2023

Bearing technology | Plain bearings | iglidur® M250

Ø
1.0-75.0mm

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

The robust all-rounder according to ISO 2795
Excellent vibration dampening

The self-lubricating plain bearings made of iglidur® M250 are characterised by impact strength, vibration dampening and wear resistance. They prove themselves particularly well under stresses in which the vibration dampening of the bearings is required, e. g. in sports equipment and packaging machines.

- Over 450 sizes available from stock
- Excellent vibration dampening
- Suitable for high edge pressures
- Suitable for impact loads
- Thick-walled according to ISO 2795
- Dirt can become embedded for shaft protection
- Lubrication-free
- Maintenance-free
- Thrust washers available only in imperial sizes, from page 1147

Typical application areas

- Agricultural machines
- Furniture/Industrial design
- Textile industry
- Doors and gates
- Mechanical engineering

Descriptive technical specifications		
Wear resistance at +23°C	–	+
Wear resistance at +90°C	–	+
Wear resistance at +150°C	–	+
Slide property	–	+
Wear resistance under water	–	+
Media resistance	–	+
Resistant to edge pressures	–	+
Resistant to shock and impact loads	–	+
Dirt resistance	–	+

Online product finder
www.igus.eu/iglidur-finder

Online service life calculation
www.igus.eu/iglidur-expert

EN 09/2023

iglidur® M250
+80°C
210MPa

Technical data

General properties			Testing method
Density	g/cm³	1.14	
Colour		dark grey	
Max. moisture absorption at +23°C/50% r.h.	% weight	1.4	DIN 53495
Max. moisture absorption	% weight	7.6	
Coefficient of friction, dynamic, against steel	µ	0.18-0.40	
pv value, max. (dry)	MPa · m/s	0.12	
Mechanical properties			
Flexural modulus	MPa	2,700	DIN 53457
Flexural strength at +20°C	MPa	112	DIN 53452
Compressive strength	MPa	52	
Max. permissible surface pressure (+20°C)	MPa	20	
Shore D hardness		79	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+80	
Max. application temperature short-term	°C	+170	
Min. application temperature	°C	-40	
Thermal conductivity	W/m · K	0.24	ASTM C 177
Coefficient of thermal expansion (at +23°C)	$K^{-1} \cdot 10^{-5}$	10	DIN 53752
Electrical properties			
Specific transitional resistance	Ωcm	$> 10^{13}$	DIN IEC 93
Surface resistance	Ω	$> 10^{11}$	DIN 53482

-40 °C up to +80 °C

210MPa

V-2

RoHS-II

ISO 2795

Table 01: Material properties

The self-lubricating plain bearings made of iglidur® M250 are characterised by impact strength, vibration dampening and wear resistance. They prove themselves particularly well under stresses in which the vibration dampening of the bearings is required, e.g. in sports equipment and packaging machines. Since they are additionally able to absorb dirt, they are also suited for agricultural machines and garden appliances.

Moisture absorption

The moisture absorption of iglidur® M250 plain bearings in ambient conditions is approximately 1.4% weight. The saturation limit submerged in water is 7.6% weight. This must be taken into account for these types of applications.

Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is only possible to a limited extent.

Radiation resistance

Plain bearings made from iglidur® M250 have limited use under radioactive radiation. They are resistant up to a radiation intensity of $1 \cdot 10^4$ Gy.

Resistance to weathering

iglidur® M250 plain bearings are not resistant to weathering. The material properties are significantly affected. Discolouration occurs. Practical tests under real application conditions are strongly recommended.

Mechanical properties

When temperatures increase, the compressive strength of iglidur® M250 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
iglidur® M250 plain bearings can withstand a maximum recommended surface pressure of 20MPa. Compared with other iglidur® materials iglidur® M250 plain bearings are highly elastic. By this elasticity they can yield very well, but retain their original shape again. A plastic deformation is minimal up to the maximum recommended surface pressure.
Surface pressure, page 45

EN 09/2023

Bearing technology | Plain bearings | iglidur® M250

Permissible surface speeds

As standard, iglidur® M250 is manufactured as a thick-walled bearing. iglidur® M250 is best suited for low to medium surface speeds. The maximum permissible surface speed for dry-operating applications is 0.8m/s (rotating) and 2.5 m/s (linear). In practice, though, this level is rarely reached due to varying application conditions.

Surface speed, page 48

Temperature

Application temperatures up to +170°C are permissible for short periods. However, it is permissible to expose iglidur® M250 plain bearings to this temperature only if they are not subjected to any further load. The maximum long-term application temperature is +80°C. This is also the point of the wear limit, i. e. the temperature over which the wear increases exponentially. For temperatures over +60°C an additional securing is required.

Application temperatures, page 53
Additional securing, page 53

Friction and wear

The coefficient of friction μ of a plain bearing among other factors is influenced by the surface speed and the load (diagrams 04 and 05).

Coefficient of friction and surfaces, page 51
Wear resistance, page 54

Shaft materials

The friction and wear are also dependent, to a large degree, on the mating partner. If you observe the coefficient of friction, then the ideal shaft surface finish for iglidur® M250 bearings is Ra = 0.6mm. Diagram 06 and 07 display a summary of the results of tests with different shaft materials executed with plain bearings made of iglidur® M250. Up to loads of 2MPa the shaft material plays a relatively small role for rotational movements. Therefore, a suitable shaft material must be considered for higher loads. These are hardened shafts, such as Cf53 or hard-chromed. Diagram 07 shows that iglidur® M250 is much better suited for rotational motion than for pivoting movements. However, it must be mentioned that pivoting movements often cause high vibrations, which act on the bearing. This is where iglidur® M250 can show off its special dampening specifications. In our test, these vibrations are excluded for clarity so that the comparison between rotation and pivoting operation is accurate.

Shaft materials, page 56

Installation tolerances

iglidur® M250 plain bearings require a relatively large amount of bearing clearance for optimal operation. This ensures that the bearing remains reliable during temperature change and water absorption. The disadvantages of the bearings clearance are minimised by the vibration-dampening properties. The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the D11 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table). The shaft should have a recommended minimum h9 tolerance.

Testing methods, page 61

Chemicals	Resistance
Alcohols	+ up to 0
Diluted acids	0 up to –
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	–
Strong alkalines	0

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1170

		Rotating	Oscillating	linear
Long-term	m/s	0.8	0.6	2.5
Short-term	m/s	2.0	1.4	5.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.18-0.40	0.09	0.04	0.04

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

	Housing		Plain bearings		Shaft	
Ø d1 [mm]	H7 [mm]		D11 [mm]		h9 [mm]	
0-3	+0.000	+0.010	+0.020	+0.080	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.030	+0.105	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.040	+0.130	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.050	+0.160	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.065	+0.195	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.080	+0.240	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.100	+0.290	-0.074	+0.000
> 80-120	+0.000	+0.035	+0.120	+0.340	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.145	+0.395	-0.100	+0.000

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

iglidur® M250
+80°C
210MPa

Technical data

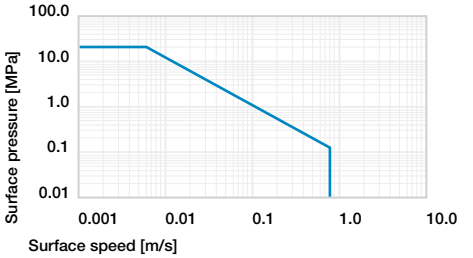


Diagram 01: Permissible pv values for iglidur® M250 with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

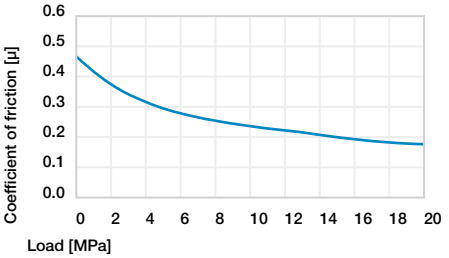


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

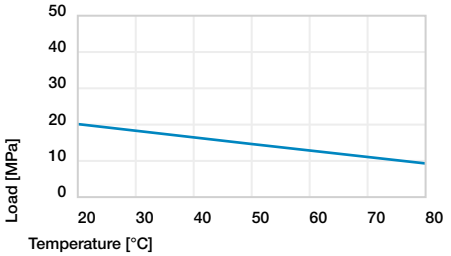


Diagram 02: Maximum recommended surface pressure as a function of temperature (20MPa at +20°C)

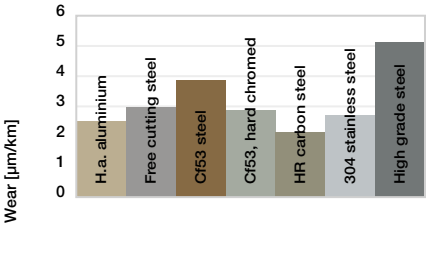


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

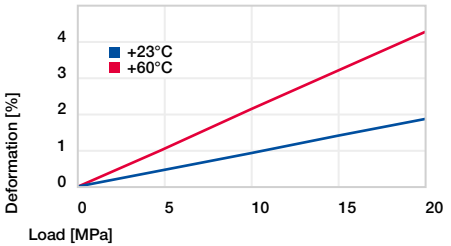


Diagram 03: Deformation under pressure and temperature

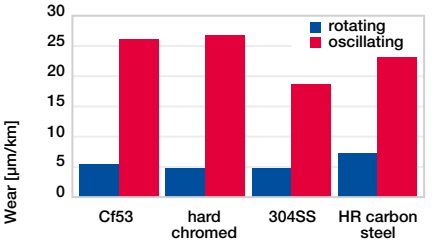


Diagram 07: Wear for rotating and oscillating applications with different shaft materials, p = 2MPa

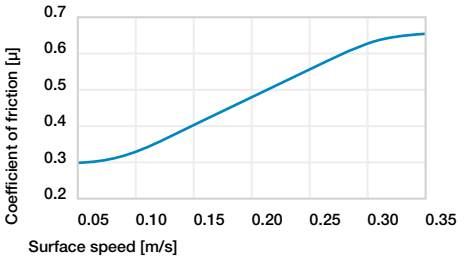
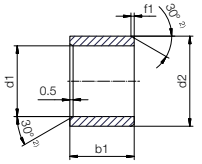


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

Bearing technology | Plain bearings | iglidur® M250

Sleeve bearings (form S)



[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2

Dimensions according to ISO 2795 and special dimensions

Order example: MSM-0103-02 – no minimum order quantity.
M250 iglidur® material S Cylindrical M Metric 01 Inner Ø d1 03 Outer Ø d2 02 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
1.0		3.0	2.0	MSM-0103-02
1.5		4.0	2.0	MSM-0104-02
2.0		5.0	1.0	MSM-0205-01
2.0		5.0	2.0	MSM-0205-02
2.0	+0.020 +0.080	5.0	3.0	MSM-0205-03
2.5		6.0	3.0	MSM-0206-03
3.0		5.0	3.0	MSM-0305-03
3.0		5.0	4.0	MSM-0305-04
3.0		6.0	3.0	MSM-0306-03
3.0		6.0	4.0	MSM-0306-04
4.0		5.5	4.0	MSM-0405-04
4.0		5.5	6.0	MSM-0405-06
4.0		7.0	3.0	MSM-0407-03
4.0		7.0	4.0	MSM-0407-04
4.0		7.0	6.0	MSM-0407-06
4.0		8.0	4.0	MSM-0408-04
4.0		8.0	6.0	MSM-0408-06
5.0		7.0	5.0	MSM-0507-05
5.0	+0.030 +0.105	7.0	10.0	MSM-0507-10
5.0		8.0	4.0	MSM-0508-04
5.0		8.0	5.0	MSM-0508-05
5.0		8.0	8.0	MSM-0508-08
5.0		9.0	5.0	MSM-0509-05
5.0		9.0	8.0	MSM-0509-08
6.0		8.0	6.0	MSM-0608-06
6.0		8.0	8.0	MSM-0608-08
6.0		8.0	10.0	MSM-0608-10
6.0		9.0	6.0	MSM-0609-06
6.0		10.0	2.5	MSM-0610-02
6.0		10.0	4.0	MSM-0610-04
6.0		10.0	6.0	MSM-0610-06
6.0		10.0	8.0	MSM-0610-08
6.0	+0.030 +0.105	10.0	10.0	MSM-0610-10
6.0		11.0	4.0	MSM-0611-04
6.0		12.0	6.0	MSM-0612-06
6.0		12.0	10.0	MSM-0612-10
7.0		10.0	5.0	MSM-0710-05
7.0		10.0	8.0	MSM-0710-08
7.0		10.0	10.0	MSM-0710-10
7.0		11.0	16.0	MSM-0711-16
8.0		10.0	6.0	MSM-0810-06
8.0		10.0	8.0	MSM-0810-08
8.0		10.0	10.0	MSM-0810-10
8.0		10.0	12.0	MSM-0810-12
8.0		11.0	6.0	MSM-0811-06
8.0		11.0	8.0	MSM-0811-08
8.0	+0.040 +0.130	11.0	12.0	MSM-0811-12
8.0		12.0	4.0	MSM-0812-04
8.0		12.0	6.0	MSM-0812-06
8.0		12.0	8.0	MSM-0812-08
8.0		12.0	10.0	MSM-0812-10
8.0		12.0	12.0	MSM-0812-12
8.0		14.0	6.0	MSM-0814-06
8.0		14.0	10.0	MSM-0814-10
9.0		12.0	14.0	MSM-0912-14
10.0		12.0	8.0	MSM-1012-08
10.0		12.0	10.0	MSM-1012-10
10.0		12.0	12.0	MSM-1012-12

[3] After press-fit. *Testing methods, page 61*

EN 09/2023

Product range

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
10.0		12.0	15.0	MSM-1012-15
10.0		12.0	20.0	MSM-1012-20
10.0		14.0	6.0	MSM-1014-06
10.0		14.0	8.0	MSM-1014-08
10.0		14.0	10.0	MSM-1014-10
10.0	+0.040 +0.130	14.0	16.0	MSM-1014-16
10.0		16.0	6.0	MSM-1016-06
10.0		16.0	8.0	MSM-1016-08
10.0		16.0	10.0	MSM-1016-10
10.0		16.0	16.0	MSM-1016-16
10.0		16.0	50.0	MSM-1016-50
12.0		14.0	10.0	MSM-1214-10
12.0		14.0	12.0	MSM-1214-12
12.0		14.0	15.0	MSM-1214-15
12.0		14.0	20.0	MSM-1214-20
12.0		16.0	15.0	MSM-1216-15
12.0		16.0	20.0	MSM-1216-20
12.0		18.0	8.0	MSM-1218-08
12.0		18.0	10.0	MSM-1218-10
12.0		18.0	15.0	MSM-1218-15
12.0		18.0	20.0	MSM-1218-20
13.0		15.0	10.0	MSM-1315-10
13.0		15.0	20.0	MSM-1315-20
14.0		16.0	8.5	MSM-1416-085
14.0		16.0	10.0	MSM-1416-10
14.0		16.0	15.0	MSM-1416-15
14.0		16.0	20.0	MSM-1416-20
14.0		16.0	25.0	MSM-1416-25
14.0		16.0	29.0	MSM-1416-29
14.0	+0.050 +0.160	18.0	20.0	MSM-1418-20
14.0		20.0	10.0	MSM-1420-10
14.0		20.0	15.0	MSM-1420-15
14.0		20.0	20.0	MSM-1420-20
15.0		17.0	10.0	MSM-1517-10
15.0		17.0	15.0	MSM-1517-15
15.0		17.0	20.0	MSM-1517-20
15.0		17.0	25.0	MSM-1517-25
15.0		21.0	10.0	MSM-1521-10
15.0		21.0	15.0	MSM-1521-15
15.0		21.0	20.0	MSM-1521-20
15.0		21.0	23.0	MSM-1521-23
16.0		18.0	12.0	MSM-1618-12
16.0		18.0	15.0	MSM-1618-15
16.0		18.0	20.0	MSM-1618-20
16.0		18.0	25.0	MSM-1618-25
16.0		20.0	20.0	MSM-1620-20
16.0		20.0	25.0	MSM-1620-25
16.0		20.0	30.0	MSM-1620-30
16.0		21.0	7.0	MSM-1621-07
16.0		22.0	12.0	MSM-1622-12
16.0		22.0	15.0	MSM-1622-15
16.0		22.0	16.0	MSM-1622-16
16.0		22.0	20.0	MSM-1622-20
16.0		22.0	25.0	MSM-1622-25
18.0	+0.050 +0.160	20.0	15.0	MSM-1820-15
18.0		20.0	20.0	MSM-1820-20
18.0		20.0	25.0	MSM-1820-25
18.0		24.0	12.0	MSM-1824-12
18.0		24.0	20.0	MSM-1824-20
18.0		24.0	30.0	MSM-1824-30
18.0		24.0	40.0	MSM-1824-40
20.0		23.0	10.0	MSM-2023-10
20.0		23.0	15.0	MSM-2023-15
20.0		23.0	20.0	MSM-2023-20
20.0		23.0	25.0	MSM-2023-25
20.0		23.0	30.0	MSM-2023-30
20.0		25.0	14.0	MSM-2025-14
20.0		25.0	20.0	MSM-2025-20
20.0		25.0	30.0	MSM-2025-30
20.0		26.0	12.0	MSM-2026-12
20.0		26.0	15.0	MSM-2026-15
20.0		26.0	20.0	MSM-2026-20
20.0		26.0	30.0	MSM-2026-30
22.0		24.0	8.0	MSM-2224-08
22.0		25.0	15.0	MSM-2225-15
22.0		25.0	20.0	MSM-2225-20
22.0		25.0	25.0	MSM-2225-25
22.0		25.0	30.0	MSM-2225-30
22.0	+0.065 +0.195	26.0	15.0	MSM-2226-15
22.0		28.0	10.0	MSM-2228-10
22.0		28.0	15.0	MSM-2228-15
22.0		28.0	20.0	MSM-2228-20
22.0		28.0	30.0	MSM-2228-30
24.0		27.0	15.0	MSM-2427-15
24.0		27.0	20.0	MSM-2427-20
24.0		27.0	25.0	MSM-2427-25
24.0		27.0	30.0	MSM-2427-30
24.0		30.0	15.0	MSM-2430-15
24.0		30.0	20.0	MSM-2430-20
24.0		30.0	30.0	MSM-2430-30
25.0		28.0	12.0	MSM-2528-12
25.0		28.0	15.0	MSM-2528-15
25.0		28.0	20.0	MSM-2528-20
25.0		28.0	25.0	MSM-2528-25
25.0		28.0	30.0	MSM-2528-30
25.0		30.0	20.0	MSM-2530-20

[3] After press-fit. *Testing methods, page 61*

EN 09/2023

Bearing technology | Plain bearings | iglidur® M250

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
25.0		30.0	30.0	**MSM-2530-30**
25.0		30.0	40.0	**MSM-2530-40**
25.0		32.0	10.0	**MSM-2532-10**
25.0		32.0	12.0	**MSM-2532-12**
25.0		32.0	20.0	**MSM-2532-20**
25.0		32.0	30.0	**MSM-2532-30**
25.0		32.0	35.0	**MSM-2532-35**
25.0		32.0	40.0	**MSM-2532-40**
26.0		30.0	20.0	**MSM-2630-20**
26.0		32.0	30.0	**MSM-2632-30**
27.0		34.0	20.0	**MSM-2734-20**
27.0		34.0	30.0	**MSM-2734-30**
27.0	+0.065	34.0	40.0	**MSM-2734-40**
28.0	+0.195	32.0	20.0	**MSM-2832-20**
28.0		32.0	25.0	**MSM-2832-25**
28.0		32.0	30.0	**MSM-2832-30**
28.0		33.0	20.0	**MSM-2833-20**
28.0		36.0	20.0	**MSM-2836-20**
28.0		36.0	30.0	**MSM-2836-30**
28.0		36.0	40.0	**MSM-2836-40**
30.0		34.0	20.0	**MSM-3034-20**
30.0		34.0	25.0	**MSM-3034-25**
30.0		34.0	30.0	**MSM-3034-30**
30.0		34.0	40.0	**MSM-3034-40**
30.0		35.0	20.0	**MSM-3035-20**
30.0		35.0	40.0	**MSM-3035-40**
30.0	+0.032 +0.102	38.0	3.0	**MSM-3038-03**
30.0	+0.065 +0.195	38.0	4.5	**MSM-3038-045**
30.0	+0.080 +0.240	38.0	17.0	**MSM-3038-17**
30.0		38.0	20.0	**MSM-3038-20**
30.0	+0.065 +0.195	38.0	30.0	**MSM-3038-30**
30.0		38.0	40.0	**MSM-3038-40**
30.0		40.0	40.0	**MSM-3040-40**
32.0		36.0	20.0	**MSM-3236-20**
32.0		36.0	30.0	**MSM-3236-30**
32.0		36.0	40.0	**MSM-3236-40**
32.0		40.0	20.0	**MSM-3240-20**
32.0		40.0	30.0	**MSM-3240-30**
32.0		40.0	40.0	**MSM-3240-40**
35.0		39.0	20.0	**MSM-3539-20**
35.0		39.0	30.0	**MSM-3539-30**
35.0		39.0	40.0	**MSM-3539-40**
35.0		39.0	50.0	**MSM-3539-50**
35.0		42.0	50.0	**MSM-3542-50**
40.0	+0.080 +0.240	44.0	20.0	**MSM-4044-20**
40.0		44.0	30.0	**MSM-4044-30**
40.0		44.0	40.0	**MSM-4044-40**
40.0		44.0	50.0	**MSM-4044-50**
40.0		46.0	20.0	**MSM-4046-20**
45.0		50.0	20.0	**MSM-4550-20**
45.0		50.0	30.0	**MSM-4550-30**
45.0		50.0	40.0	**MSM-4550-40**
45.0		50.0	50.0	**MSM-4550-50**
50.0		55.0	20.0	**MSM-5055-20**
50.0		55.0	30.0	**MSM-5055-30**
50.0		55.0	40.0	**MSM-5055-40**
50.0		55.0	50.0	**MSM-5055-50**
50.0		55.0	60.0	**MSM-5055-60**
75.0	+0.100 +0.290	80.0	60.0	**MSM-7580-60**

[3] After press-fit. *Testing methods, page 61*

Available from stock
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www.igus.eu/24

Order online
including delivery times, prices, online tools
www.igus.eu/M250

Ordering note
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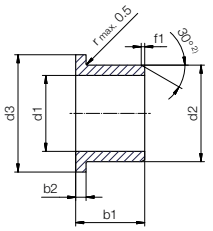
iglidur® M250
+80°C
210MPa

Bearing technology | Plain bearings | iglidur® M250

Flange bearings (form F)



[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2

Dimensions according to ISO 2795 and special dimensions

Order example: MFM-0103-02 – no minimum order quantity.
M250 iglidur® material F With flange M Metric 01 Inner Ø d1 03 Outer Ø d2 02 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
1.0		3.0	5.0	2.0	1.00	**MFM-0103-02**
1.5	+0.020 +0.080	4.0	6.0	2.0	1.00	**MFM-0104-02**
2.0		5.0	8.0	3.0	1.50	**MFM-0205-03**
2.5		6.0	9.0	3.0	1.50	**MFM-0206-03**
3.0		6.0	9.0	4.0	1.50	**MFM-0306-04**
4.0		8.0	12.0	4.0	2.00	**MFM-0408-04**
4.0		8.0	12.0	6.0	2.00	**MFM-0408-06**
4.0		8.0	12.0	8.0	2.00	**MFM-0408-08**
5.0		9.0	13.0	5.0	2.00	**MFM-0509-05**
5.0		9.0	13.0	6.0	2.00	**MFM-0509-06**
5.0		9.0	13.0	8.0	2.00	**MFM-0509-08**
6.0	+0.030	8.0	12.0	4.0	1.00	**MFM-0608-04**
6.0	+0.105	8.0	12.0	8.0	1.00	**MFM-0608-08**
6.0		10.0	14.0	4.0	2.00	**MFM-0610-04**
6.0		10.0	14.0	6.0	2.00	**MFM-0610-06**
6.0		10.0	14.0	10.0	2.00	**MFM-0610-10**
6.0		11.0	14.0	4.0	2.00	**MFM-0611-04**
6.0		12.0	14.0	6.0	3.00	**MFM-0612-06**
6.0		12.0	14.0	10.0	3.00	**MFM-0612-10**
7.0		11.0	15.0	6.0	2.00	**MFM-0711-06**
7.0		11.0	15.0	8.0	2.00	**MFM-0711-08**
8.0		9.0	13.0	5.5	0.50	**MFM-0809-055**
8.0	+0.040 +0.130	10.0	15.0	5.5	1.00	**MFM-0810-05**
8.0		10.0	15.0	7.5	1.00	**MFM-0810-07**
8.0		10.0	15.0	9.5	1.00	**MFM-0810-09**
8.0		11.0	13.0	5.0	2.00	**MFM-0811-05**
8.0		11.0	13.0	8.0	2.00	**MFM-0811-08**
8.0		12.0	16.0	6.0	2.00	**MFM-0812-06**
8.0		12.0	16.0	8.0	2.00	**MFM-0812-08**
8.0		12.0	16.0	12.0	2.00	**MFM-0812-12**
8.0		14.0	18.0	6.0	3.00	**MFM-0814-06**
8.0		14.0	16.0	6.0	3.00	**MFM-081416-06**
8.0		14.0	18.0	10.0	3.00	**MFM-0814-10**
8.0		14.0	16.0	10.0	3.00	**MFM-081416-10**
9.0		14.0	19.0	6.0	2.00	**MFM-0914-06**
9.0		14.0	19.0	10.0	2.00	**MFM-0914-10**
9.0		14.0	19.0	14.0	2.00	**MFM-0914-14**
10.0		12.0	18.0	7.0	1.00	**MFM-1012-07**
10.0		12.0	18.0	9.0	1.00	**MFM-1012-09**
10.0		12.0	18.0	9.0	1.00	**MFM-1012-09**
10.0	+0.040 +0.130	12.0	18.0	12.0	1.00	**MFM-1012-12**
10.0		12.0	18.0	17.0	1.00	**MFM-1012-17**
10.0		14.0	19.0	8.0	2.00	**MFM-101419-08**
10.0		14.0	19.0	10.0	2.00	**MFM-1014-10**
10.0		14.0	19.0	12.0	1.50	**MFM-101419-12**
10.0		14.0	20.0	12.0	2.00	**MFM-101420-12**
10.0		14.0	17.5	14.0	1.00	**MFM-1014-14**
10.0		14.0	17.5	19.0	1.00	**MFM-1014-19**
10.0		14.0	17.5	24.0	1.00	**MFM-1014-24**
10.0		14.0	17.5	34.0	1.00	**MFM-1014-34**
10.0		16.0	20.0	6.0	3.00	**MFM-101620-06**
10.0		16.0	22.0	8.0	3.00	**MFM-1016-08**
10.0		16.0	22.0	10.0	3.00	**MFM-1016-10**
10.0		16.0	20.0	10.0	3.00	**MFM-101620-10**
10.0		16.0	22.0	16.0	3.00	**MFM-1016-16**

[3] After press-fit. *Testing methods, page 61*

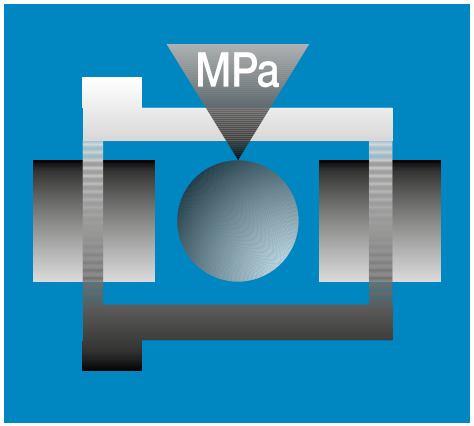
EN 09/2023

Bearing technology | Plain bearings | iglidur® M250

d1	d1 Tolerance[3]	d2	d3 d13[3]	b1 h13	b2 h13	Part No.
[mm]		[mm]	[mm]	[mm]	[mm]	
12.0		14.0	20.0	7.0	1.00	**MFM-1214-07**
12.0		14.0	20.0	9.0	1.00	**MFM-1214-09**
12.0		14.0	20.0	12.0	1.00	**MFM-1214-12**
12.0		14.0	20.0	17.0	1.00	**MFM-1214-17**
12.0		16.0	22.0	10.0	2.00	**MFM-1216-10**
12.0		16.0	22.0	20.0	2.00	**MFM-1216-20**
12.0		18.0	24.0	8.0	3.00	**MFM-1218-08**
12.0		18.0	22.0	10.0	3.00	**MFM-1218-10**
12.0		18.0	24.0	12.0	3.00	**MFM-1218-12**
12.0		18.0	22.0	15.0	3.00	**MFM-1218-15**
12.0		18.0	22.0	20.0	3.00	**MFM-1218-20**
13.0		15.0	20.0	14.0	2.00	**MFM-1315-14**
13.0		16.0	24.0	8.0	2.00	**MFM-131624-08**
14.0		16.0	22.0	12.0	1.00	**MFM-1416-12**
14.0		16.0	22.0	17.0	1.00	**MFM-1416-17**
14.0		20.0	25.0	7.0	3.00	**MFM-1420-07**
14.0		20.0	25.0	10.0	3.00	**MFM-1420-10**
14.0		20.0	25.0	15.0	3.00	**MFM-1420-15**
14.0		20.0	25.0	20.0	3.00	**MFM-1420-20**
15.0		17.0	23.0	9.0	1.00	**MFM-1517-09**
15.0	+0.050	17.0	23.0	12.0	1.00	**MFM-1517-12**
15.0	+0.160	17.0	23.0	17.0	1.00	**MFM-1517-17**
15.0		21.0	27.0	10.0	3.00	**MFM-1521-10**
15.0		21.0	27.0	15.0	3.00	**MFM-1521-15**
15.0		21.0	27.0	20.0	3.00	**MFM-1521-20**
15.0		21.0	27.0	25.0	3.00	**MFM-1521-25**
16.0		18.0	28.0	8.0	2.00	**MFM-1618-08/02**
16.0		18.0	24.0	12.0	1.00	**MFM-1618-12**
16.0		18.0	24.0	17.0	1.00	**MFM-1618-17**
16.0		22.0	28.0	12.0	3.00	**MFM-1622-12**
16.0		22.0	28.0	15.0	3.00	**MFM-1622-15**
16.0		22.0	28.0	20.0	3.00	**MFM-1622-20**
16.0		22.0	28.0	25.0	3.00	**MFM-1622-25**
18.0		20.0	26.0	12.0	1.00	**MFM-1820-12**
18.0		20.0	26.0	17.0	1.00	**MFM-1820-17**
18.0		20.0	26.0	22.0	1.00	**MFM-1820-22**
18.0		24.0	26.0	7.8	3.00	**MFM-182426-078**
18.0		24.0	30.0	8.0	3.00	**MFM-1824-08**
18.0		24.0	30.0	12.0	3.00	**MFM-1824-12**
18.0		24.0	30.0	18.0	3.00	**MFM-1824-18**
18.0		24.0	30.0	20.0	3.00	**MFM-1824-20**
18.0		24.0	30.0	30.0	3.00	**MFM-1824-30**

d1	d1 Tolerance[3]	d2	d3 d13[3]	b1 h13	b2 h13	Part No.
[mm]		[mm]	[mm]	[mm]	[mm]	
19.0		24.0	27.0	12.0	2.00	**MFM-192427-12**
20.0		23.0	30.0	11.5	1.50	**MFM-2023-11**
20.0		23.0	30.0	16.5	1.50	**MFM-2023-16**
20.0		23.0	30.0	21.5	1.50	**MFM-2023-21**
20.0		26.0	28.0	12.0	3.00	**MFM-202628-12**
20.0		26.0	32.0	15.0	3.00	**MFM-2026-15**
20.0		26.0	32.0	20.0	3.00	**MFM-2026-20**
20.0		26.0	32.0	30.0	3.00	**MFM-2026-30**
22.0		28.0	34.0	15.0	3.00	**MFM-2228-15**
22.0		28.0	34.0	20.0	3.00	**MFM-2228-20**
22.0		28.0	34.0	30.0	3.00	**MFM-2228-30**
24.0		30.0	36.0	15.0	3.00	**MFM-2430-15**
24.0		30.0	36.0	20.0	3.00	**MFM-2430-20**
24.0		30.0	36.0	30.0	3.00	**MFM-2430-30**
25.0		28.0	35.0	11.5	1.50	**MFM-2528-11**
25.0		28.0	35.0	16.5	1.50	**MFM-2528-16**
25.0	+0.065	28.0	35.0	21.5	1.50	**MFM-2528-21**
25.0	+0.195	32.0	38.0	12.0	4.00	**MFM-2532-12**
25.0		32.0	38.0	15.0	4.00	**MFM-2532-15**
25.0		32.0	38.0	20.0	4.00	**MFM-2532-20**
25.0		32.0	38.0	30.0	4.00	**MFM-2532-30**
25.0		32.0	38.0	40.0	4.00	**MFM-2532-40**
27.0		34.0	40.0	20.0	4.00	**MFM-2734-20**
27.0		34.0	40.0	30.0	4.00	**MFM-2734-30**
27.0		34.0	40.0	40.0	4.00	**MFM-2734-40**
28.0		36.0	42.0	20.0	4.00	**MFM-2836-20**
28.0		36.0	42.0	30.0	4.00	**MFM-2836-30**
28.0		36.0	42.0	40.0	4.00	**MFM-2836-40**
30.0		34.0	42.0	16.0	2.00	**MFM-3034-16**
30.0		34.0	42.0	26.0	2.00	**MFM-3034-26**
30.0		35.0	44.0	20.0	4.00	**MFM-3035-20**
30.0		38.0	44.0	20.0	4.00	**MFM-3038-20**
30.0		38.0	44.0	30.0	4.00	**MFM-3038-30**
30.0		38.0	44.0	40.0	4.00	**MFM-3038-40**
32.0		40.0	46.0	20.0	4.00	**MFM-3240-20**
32.0		40.0	46.0	30.0	4.00	**MFM-3240-30**
32.0		40.0	46.0	40.0	4.00	**MFM-3240-40**
35.0	+0.080	39.0	47.0	16.0	2.00	**MFM-3539-16**
35.0	+0.240	39.0	47.0	26.0	2.00	**MFM-3539-26**
40.0		44.0	52.0	30.0	2.00	**MFM-4044-30**
40.0		44.0	52.0	40.0	2.00	**MFM-4044-40**
45.0		50.0	58.0	50.0	2.00	**MFM-4550-50**

[3] After press-fit. *Testing methods, page 61*



Specialist for pivoting, rolling applications and more

Low coefficient of friction and wear on almost every shaft

iglidur® P210

When to use it?

- When a universal plain bearing for use in a wet environment is required
- When a wear-resistant plain bearing for pivoting applications at medium loads is required
- When edge loads and shocks occur
- When the surface pressure of iglidur® J is insufficient

When not to use it?

- When a universal plain bearing with the largest possible range of dimensions is required
  iglidur® G
- When a plain bearing for highly loaded pivoting applications is required
  iglidur® Q, iglidur® Q2
- When temperatures are higher than +100°C
  iglidur® G, iglidur® J350

EN 09/2023

Bearing technology | Plain bearings | iglidur® P210

Ø
4.0-50.0mm

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

Specialist for pivoting, rolling applications and more

Low coefficient of friction and wear on almost every shaft

This versatile material has already proven its worth in many customer-specific solutions and as a bar stock material. Clip-on or pre-loaded designs as well as vehicle interior applications are possible. Now available in a standard size range from stock.

- Low moisture absorption
- Versatile: performance on many different shafts
- Suitable for high edge pressures
- Lubrication-free
- Maintenance-free

Typical application areas

- Agricultural machines
- Furniture/Industrial design
- Textile industry
- Doors and gates
- Mechanical engineering

Descriptive technical specifications		
Wear resistance at +23°C	–	+
Wear resistance at +90°C	–	+
Wear resistance at +150°C	–	+
Slide property	–	+
Wear resistance under water	–	+
Media resistance	–	+
Resistant to edge pressures	–	+
Resistant to shock and impact loads	–	+
Dirt resistance	–	+

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Online service life calculation
www.igus.eu/iglidur-expert

EN 09/2023

iglidur® P210
+100°C
50MPa

Technical data

General properties			Testing method
Density	g/cm³	1.40	
Colour		yellow	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.3	DIN 53495
Max. moisture absorption	% weight	0.5	
Coefficient of friction, dynamic, against steel	µ	0.07-0.19	
pv value, max. (dry)	MPa · m/s	0.40	
Mechanical properties			
Flexural modulus	MPa	2,500	DIN 53457
Flexural strength at +20°C	MPa	70	DIN 53452
Compressive strength	MPa	50	
Max. permissible surface pressure (+20°C)	MPa	50	
Shore D hardness		75	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+100	
Max. application temperature short-term	°C	+160	
Min. application temperature	°C	-40	
Thermal conductivity	W/m · K	0.25	ASTM C 177
Coefficient of thermal expansion (at +23°C)	$K^{-1} \cdot 10^{-5}$	8	DIN 53752
Electrical properties			
Specific transitional resistance	Ωcm	$> 10^{12}$	DIN IEC 93
Surface resistance	Ω	$> 10^{11}$	DIN 53482

Table 01: Material properties

-40°C up to +100°C

50MPa

HB

RoHS-II

ISO 3547-1

iglidur® P210 plain bearings provide the user with versatile all-round bearings, which have proven to have above average service life, primarily in pivoting applications at medium loads of up to 20MPa.

Moisture absorption
The humidity absorption of iglidur® P210 bearings amounts to about 0.3 % weight in standard climatic conditions. The saturation limit submerged in water is 0.5% weight. This low moisture absorption is well below the values of iglidur® G.

Vacuum
In vacuum, any present moisture is released as vapour. The use in vacuum is only possible to a limited extent.

Radiation resistance
Plain bearings made from iglidur® P210 have limited use under radioactive radiation. They are resistant up to a radiation intensity of 3 - 10^2 Gy.

Resistance to weathering
iglidur® P210 plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolourations are only superficial.

Mechanical properties
With increasing temperatures, the compressive strength of iglidur® P210 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® P210 as a function of radial pressure. At the recommended maximum surface pressure of 50MPa the deformation is less than 3% at room temperature.
Surface pressure, page 45

EN 09/2023

Bearing technology | Plain bearings | iglidur® P210

Permissible surface speeds

Plain bearings made from iglidur® P210 are maintenance-free, they are developed for low to medium surface speeds. The maximum values given in table 03 can only be achieved at a very low surface pressure. The maximum speed given is the speed at which an increase up to the continuous use temperature occurs due to friction.

Surface speed, page 48

Temperature

Also thanks to its maximum long-term application temperature of +100°C, iglidur® P210 is suitable for a wide range of applications. If even higher temperatures are required, iglidur® G is also available with a max. long-term application temperature of +130°C. The temperatures prevailing in the bearing system also have an influence on the wear. The wear rises with increasing temperatures. For temperatures over +50°C an additional securing is required.

Application temperatures, page 53
Additional securing, page 53

Friction and wear

Similar to wear resistance, the coefficient of friction μ also changes with the surface speed and load (diagrams 04 and 05).

Coefficient of friction and surfaces, page 51
Wear resistance, page 54

Shaft materials

Diagram 06 shows results of testing different shaft materials with plain bearings made from iglidur® P210. For rotational movements at radial loads below 1MPa, iglidur® P210 has generally very low wear. Wear is only significantly higher in combination with HR carbon steel shafts. Generally, rotational wear will be higher than for a pivoting application of equal load. This is only reversed at loads above 25MPa (diagram 07).

Shaft materials, page 56

Installation tolerances

iglidur® P210 plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 61

Chemicals	Resistance
Alcohols	+
Diluted acids	0
Diluted alkalines	–
Fuels	+
Greases, oils without additives	+
Hydrocarbons	–
Strong acids	–
Strong alkalines	–

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1170

		Rotating	Oscillating	linear
Long-term	m/s	1.0	0.7	3.0
Short-term	m/s	2.0	1.4	4.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.07-0.19	0.09	0.04	0.04

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

	Housing		Plain bearings		Shaft	
Ø d1 [mm]	H7 [mm]		E10 [mm]		h9 [mm]	
0-3	+0.000	+0.010	+0.014	+0.054	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.020	+0.068	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.025	+0.083	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.032	+0.102	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.040	+0.124	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.050	+0.150	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.060	+0.180	-0.074	+0.000
> 80-120	+0.000	+0.035	+0.072	+0.212	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.085	+0.245	-0.100	+0.000

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

iglidur® P210
+100°C
50MPa

Technical data

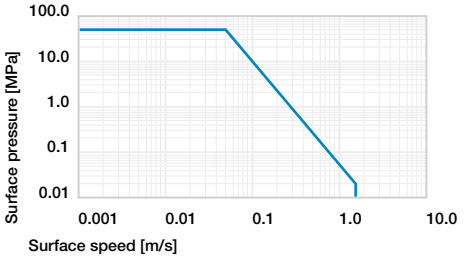


Diagram 01: Permissible pv values for iglidur® P210 with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

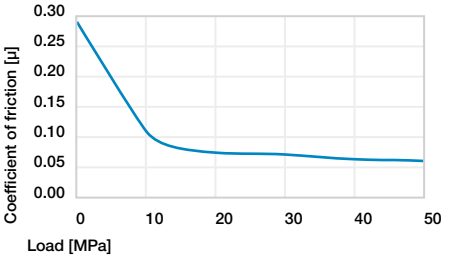


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

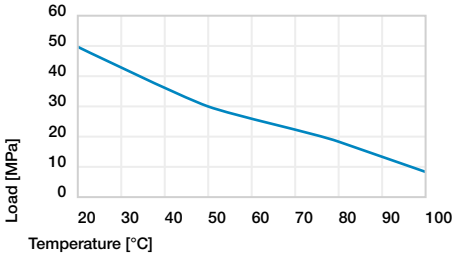


Diagram 02: Maximum recommended surface pressure as a function of temperature (50MPa at +20°C)

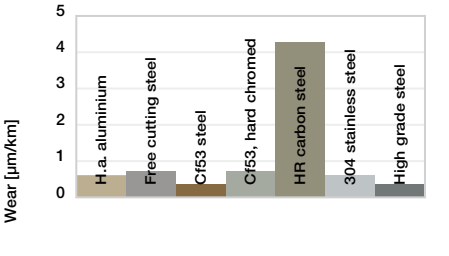


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

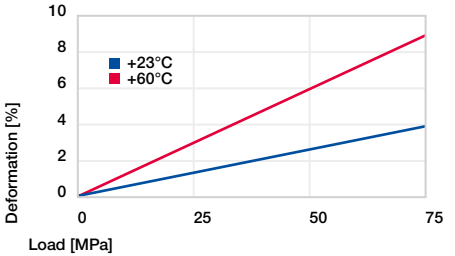


Diagram 03: Deformation under pressure and temperature

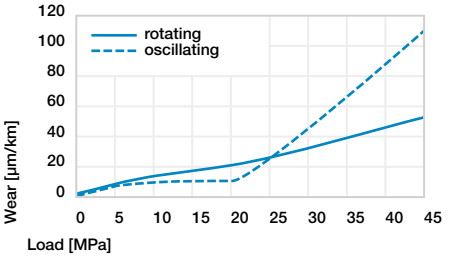


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

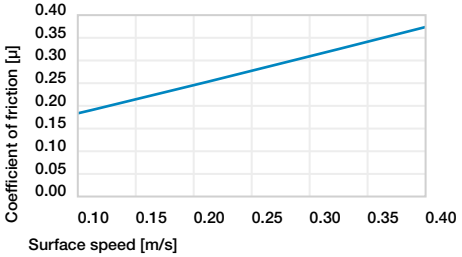
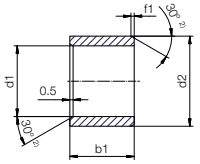


Diagram 04: Coefficient of friction as a function of the surface speed, p = 1MPa

Bearing technology | Plain bearings | iglidur® P210

Sleeve bearings (form S)



[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2

Dimensions according to ISO 3547-1 and special dimensions

Order example: P210SM-0405-04 – no minimum order quantity.
P210 iglidur® material S Cylindrical M Metric 04 Inner Ø d1 05 Outer Ø d2 04 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
4.0		5.5	4.0	P210SM-0405-04
4.0		5.5	6.0	P210SM-0405-06
5.0	+0.020	7.0	5.0	P210SM-0507-05
5.0	+0.068	7.0	10.0	P210SM-0507-10
6.0		8.0	6.0	P210SM-0608-06
6.0		8.0	8.0	P210SM-0608-08
6.0		8.0	10.0	P210SM-0608-10
8.0		10.0	8.0	P210SM-0810-08
8.0		10.0	10.0	P210SM-0810-10
8.0		10.0	12.0	P210SM-0810-12
10.0	+0.025	12.0	8.0	P210SM-1012-08
10.0	+0.083	12.0	10.0	P210SM-1012-10
10.0		12.0	12.0	P210SM-1012-12
10.0		12.0	15.0	P210SM-1012-15
10.0		12.0	20.0	P210SM-1012-20
12.0		14.0	10.0	P210SM-1214-10
12.0		14.0	12.0	P210SM-1214-12
12.0		14.0	15.0	P210SM-1214-15
12.0		14.0	20.0	P210SM-1214-20
13.0		15.0	10.0	P210SM-1315-10
13.0		15.0	20.0	P210SM-1315-20
14.0	+0.032	16.0	15.0	P210SM-1416-15
14.0	+0.102	16.0	20.0	P210SM-1416-20
14.0		16.0	25.0	P210SM-1416-25
15.0		17.0	15.0	P210SM-1517-15
15.0		17.0	20.0	P210SM-1517-20
15.0		17.0	25.0	P210SM-1517-25
16.0		18.0	15.0	P210SM-1618-15
16.0		18.0	20.0	P210SM-1618-20

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
16.0		18.0	25.0	P210SM-1618-25
18.0	+0.032	20.0	15.0	P210SM-1820-15
18.0	+0.102	20.0	20.0	P210SM-1820-20
18.0		20.0	25.0	P210SM-1820-25
20.0		23.0	10.0	P210SM-2023-10
20.0		23.0	15.0	P210SM-2023-15
20.0		23.0	20.0	P210SM-2023-20
20.0		23.0	25.0	P210SM-2023-25
20.0		23.0	30.0	P210SM-2023-30
22.0		25.0	15.0	P210SM-2225-15
22.0		25.0	20.0	P210SM-2225-20
22.0		25.0	25.0	P210SM-2225-25
22.0		25.0	30.0	P210SM-2225-30
24.0		27.0	15.0	P210SM-2427-15
24.0		27.0	20.0	P210SM-2427-20
24.0	+0.040	27.0	25.0	P210SM-2427-25
24.0	+0.124	27.0	30.0	P210SM-2427-30
25.0		28.0	15.0	P210SM-2528-15
25.0		28.0	20.0	P210SM-2528-20
25.0		28.0	25.0	P210SM-2528-25
25.0		28.0	30.0	P210SM-2528-30
28.0		32.0	20.0	P210SM-2832-20
28.0		32.0	25.0	P210SM-2832-25
28.0		32.0	30.0	P210SM-2832-30
30.0		34.0	20.0	P210SM-3034-20
30.0		34.0	25.0	P210SM-3034-25
30.0		34.0	30.0	P210SM-3034-30
30.0		34.0	40.0	P210SM-3034-40

[3] After press-fit. *Testing methods, page 61*

EN 09/2023

iglidur® P210
+100°C
50MPa

Product range

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
32.0		36.0	20.0	P210SM-3236-20
32.0		36.0	30.0	P210SM-3236-30
32.0		36.0	40.0	P210SM-3236-40
35.0		39.0	20.0	P210SM-3539-20
35.0	+0.050	39.0	30.0	P210SM-3539-30
35.0	+0.150	39.0	40.0	P210SM-3539-40
35.0		39.0	50.0	P210SM-3539-50
40.0		44.0	20.0	P210SM-4044-20
40.0		44.0	30.0	P210SM-4044-30
40.0		44.0	40.0	P210SM-4044-40

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
40.0		44.0	50.0	P210SM-4044-50
45.0		50.0	20.0	P210SM-4550-20
45.0		50.0	30.0	P210SM-4550-30
45.0		50.0	40.0	P210SM-4550-40
45.0	+0.050	50.0	50.0	P210SM-4550-50
50.0	+0.150	55.0	20.0	P210SM-5055-20
50.0		55.0	30.0	P210SM-5055-30
50.0		55.0	40.0	P210SM-5055-40
50.0		55.0	50.0	P210SM-5055-50
50.0		55.0	60.0	P210SM-5055-60

[3] After press-fit. *Testing methods, page 61*

Available from stock
Detailed information about delivery time online.
www.igus.eu/24

Order online
including delivery times, prices, online tools
www.igus.eu/P210

Ordering note
Our prices are scaled according to order quantities, current prices can be found online.

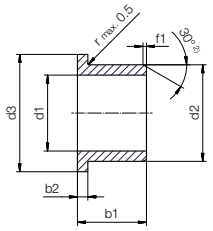
Discount scaling		
1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

No minimum order value.
No low-quantity surcharges.
Free shipping within Germany for orders above €150.

EN 09/2023

Bearing technology | Plain bearings | iglidur® P210

Flange bearings (form F)



[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

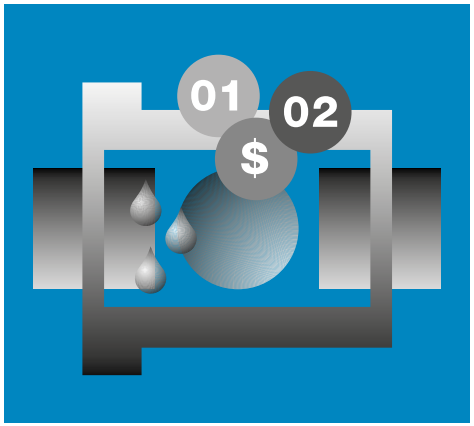
d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2

Dimensions according to ISO 3547-1 and special dimensions

Order example: P210FM-0608-04 – no minimum order quantity.
P210 iglidur® material F With flange M Metric 06 Inner Ø d1 08 Outer Ø d2 04 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
6.0	+0.020 +0.068	8.0	12.0	4.0	1.00	P210FM-0608-04
6.0		8.0	12.0	6.0	1.00	P210FM-0608-06
6.0		8.0	12.0	8.0	1.00	P210FM-0608-08
8.0		10.0	15.0	5.5	1.00	P210FM-0810-05
8.0		10.0	15.0	7.5	1.00	P210FM-0810-07
8.0		10.0	15.0	9.5	1.00	P210FM-0810-09
8.0		10.0	15.0	10.0	1.00	P210FM-0810-10
8.0	+0.025	10.0	16.0	15.0	1.50	P210FM-081016-15
10.0	+0.083	12.0	18.0	7.0	1.00	P210FM-1012-07
10.0		12.0	18.0	9.0	1.00	P210FM-1012-09
10.0		12.0	18.0	10.0	1.00	P210FM-1012-10
10.0		12.0	18.0	12.0	1.00	P210FM-1012-12
10.0		12.0	18.0	17.0	1.00	P210FM-1012-17
12.0		14.0	20.0	7.0	1.00	P210FM-1214-07
12.0		14.0	20.0	9.0	1.00	P210FM-1214-09
12.0		14.0	20.0	12.0	1.00	P210FM-1214-12
12.0	+0.032	14.0	20.0	17.0	1.00	P210FM-1214-17
14.0	+0.102	16.0	22.0	12.0	1.00	P210FM-1416-12
14.0		16.0	22.0	17.0	1.00	P210FM-1416-17
15.0		17.0	23.0	9.0	1.00	P210FM-1517-09
15.0		17.0	23.0	12.0	1.00	P210FM-1517-12
15.0		17.0	23.0	17.0	1.00	P210FM-1517-17
16.0		18.0	24.0	12.0	1.00	P210FM-1618-12
16.0	+0.032	18.0	24.0	17.0	1.00	P210FM-1618-17
18.0	+0.102	20.0	26.0	12.0	1.00	P210FM-1820-12
18.0		20.0	26.0	17.0	1.00	P210FM-1820-17
18.0		20.0	26.0	22.0	1.00	P210FM-1820-22
20.0		23.0	30.0	11.5	1.50	P210FM-2023-11
20.0		23.0	30.0	16.5	1.50	P210FM-2023-16
20.0		23.0	30.0	21.5	1.50	P210FM-2023-21
25.0	+0.040	28.0	35.0	11.5	1.50	P210FM-2528-11
25.0	+0.124	28.0	35.0	16.5	1.50	P210FM-2528-16
25.0		28.0	35.0	21.5	1.50	P210FM-2528-21
30.0		34.0	42.0	16.0	2.00	P210FM-3034-16
30.0		34.0	42.0	26.0	2.00	P210FM-3034-26
35.0	+0.050 +0.124	39.0	47.0	16.0	2.00	P210FM-3539-16
35.0		39.0	47.0	26.0	2.00	P210FM-3539-26
40.0	+0.040	44.0	52.0	30.0	2.00	P210FM-4044-30
40.0	+0.124	44.0	52.0	40.0	2.00	P210FM-4044-40
45.0		50.0	58.0	50.0	2.00	P210FM-4550-50

[3] After press-fit. *Testing methods, page 61*



The low-cost all-rounder

Well-balanced properties at a low price

iglidur® P230

When to use it?

- When a cost-effective all-round bearing for high volumes is required
- When a low-cost bearing with low moisture absorption is required
- When low pv values occur

When not to use it?

- When a cost-effective all-rounder for small quantities is required
  iglidur® G
- When high wear resistance is required
  iglidur® G, iglidur® G1
- When continuous operating temperatures are higher than +110°C
  iglidur® G, iglidur® G1

EN 09/2023

Ø
–

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

The low-cost all-rounder

Well-balanced properties at a low price

Developed for (large-scale) series application, iglidur® P230 has a well-balanced property profile compared to other iglidur® low-cost materials.

- Good wear resistance
- High media resistance
- Cost-effective
- For low and medium loads
- For applications with low pv values

Typical application areas

- Industrial series-production applications
- Mechanical engineering and jig construction
- Two-wheeler

Descriptive technical specifications		
Wear resistance at +23°C	–	+
Wear resistance at +90°C	–	+
Wear resistance at +150°C	–	+
Slide property	–	+
Wear resistance under water	–	+
Media resistance	–	+
Resistant to edge pressures	–	+
Resistant to shock and impact loads	–	+
Dirt resistance	–	+

Online product finder
www.igus.eu/iglidur-finder

Online service life calculation
www.igus.eu/iglidur-expert

EN 09/2023

iglidur® P230
+110°C
60MPa

Technical data

General properties			Testing method
Density	g/cm³	1.57	
Colour		beige	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.1	DIN 53495
Max. moisture absorption	% weight	0.3	
Coefficient of friction, dynamic, against steel	µ	0.13-0.32	
pv value, max. (dry)	MPa · m/s	0.30	
Mechanical properties			
Flexural modulus	MPa	6,532	DIN 53457
Flexural strength at +20°C	MPa	173	
Compressive strength	MPa	101	
Max. permissible surface pressure (+20°C)	MPa	60	
Shore D hardness		80	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+110	
Max. application temperature short-term	°C	+180	
Min. application temperature	°C	-30	
Thermal conductivity	W/m · K	0.34	ASTM C 177
Coefficient of thermal expansion (at +23°C)	$K^{-1} \cdot 10^{-5}$	5	DIN 53752
Electrical properties			
Specific transitional resistance	Ωcm	$>10^{12}$	DIN IEC 93
Surface resistance	Ω	$>10^{12}$	DIN 53482

-30°C up to +110°C

60MPa

HB

RoHS-II

ISO 3547-1

Table 01: Material properties

iglidur® P230 is a material with low moisture absorption and well-balanced thermal properties for use in cost-sensitive series-production applications. Good wear resistance at low pv values and low to medium speeds and loads round off the all-round profile.

Moisture absorption

The humidity absorption of iglidur® P230 bearings amounts to about 0.1% weight in standard climatic conditions. The saturation limit submerged in water is 0.3% weight. This low moisture absorption is well below the values of iglidur® M250 or iglidur® G.

Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® P230 bearings.

Radiation resistance

Plain bearings made from iglidur® P230 have limited use under radioactive radiation. They are resistant up to a radiation intensity of 3 - 10^2 Gy.

Resistance to weathering

iglidur® P230 plain bearings have not yet been tested for their resistance to weathering. Please consult igus® if you're planning to use them outdoors.

Mechanical properties

When temperatures increase, the compressive strength of iglidur® P230 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® P230 as a function of radial pressure. At the recommended maximum surface pressure of 60MPa the deformation is less than 3% at room temperature. A plastic deformation can be negligible up to this value. It is however also dependent on the duty cycle of the load.
Surface pressure, page 45

EN 09/2023

Bearing technology | Plain bearings | iglidur® P230

Permissible surface speeds

iglidur® P230 was developed for low to average surface speeds. During continuous operation, a maximum speed of 1.0m/s (rotating) or 3.0m/s (linear) is permissible. The maximum values shown in table 03 can only be achieved at low pressures. At the given speeds, friction can cause a temperature increase to maximum permissible levels. In practice, though, this level is rarely reached due to varying application conditions.

Surface speed, page 48

Temperature

Also thanks to its maximum long-term application temperature of +110°C, iglidur® P230 is suitable for a wide range of applications. If even higher temperatures are required, the best-seller iglidur® G (+130°C) or the new standard iglidur® G1 (+180°C) are available. The temperatures prevailing in the bearing system also have an influence on the wear. The wear rises with increasing temperatures. For temperatures over +100°C an additional securing is required.

Application temperatures, page 53
Additional securing, page 53

Friction and wear

Similar to wear resistance, the coefficient of friction μ also changes with the surface speed and load (diagram 04).

Coefficient of friction and surfaces, page 51
Wear resistance, page 54

Shaft materials

Diagram 06 shows results of testing different shaft materials with plain bearings made from iglidur® P230. For rotating movements with 1 MPa radial load, wear on all shafts is low, with the "soft" shaft types providing the higher coefficients of wear. The comparison of pivoting and rotational movements (diagram 07) shows fewer differences than with many other iglidur® materials. The limitation of iglidur® P230 to low to medium loads becomes clear.

Shaft materials, page 56

Installation tolerances

iglidur® P230 plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 61

Product range

iglidur® P230 plain bearings are currently manufactured to special order.

Chemicals	Resistance
Alcohols	+ up to 0
Diluted acids	+
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	+
Strong alkalines	+ up to 0

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1170

		Rotating	Oscillating	linear
Long-term	m/s	1.0	0.7	3.0
Short-term	m/s	2.0	1.4	4.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.13-0.32	0.09	0.04	0.04

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

	Housing		Plain bearings		Shaft	
Ø d1 [mm]	H7 [mm]		E10 [mm]		h9 [mm]	
0-3	+0.000	+0.010	+0.014	+0.054	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.020	+0.068	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.025	+0.083	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.032	+0.102	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.040	+0.124	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.050	+0.150	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.060	+0.180	-0.074	+0.000
> 80-120	+0.000	+0.035	+0.072	+0.212	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.085	+0.245	-0.100	+0.000

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

iglidur® P230
+110°C
60MPa

Technical data

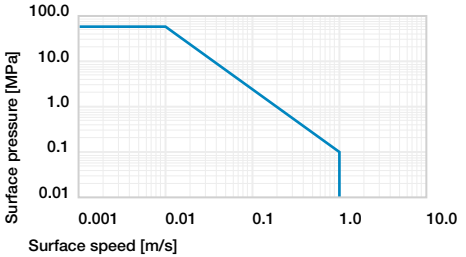


Diagram 01: Permissible pv values for iglidur® P230 with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

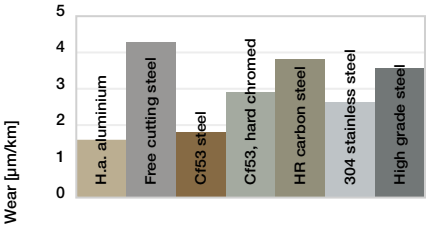


Diagram 05: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

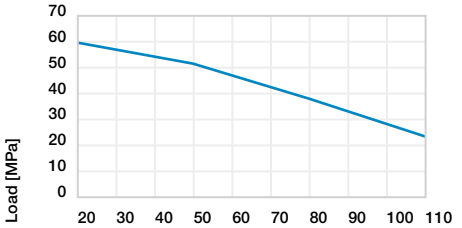


Diagram 02: Maximum recommended surface pressure as a function of temperature (60MPa at +20°C)

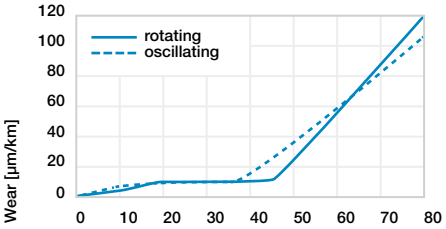


Diagram 06: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

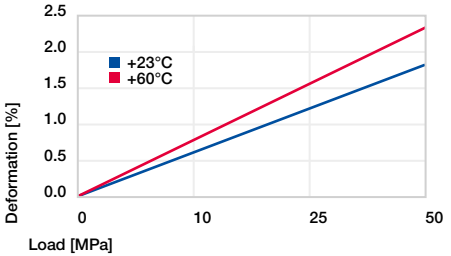


Diagram 03: Deformation under pressure and temperature

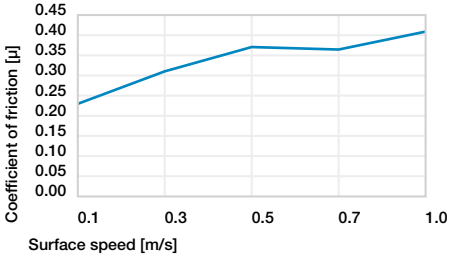
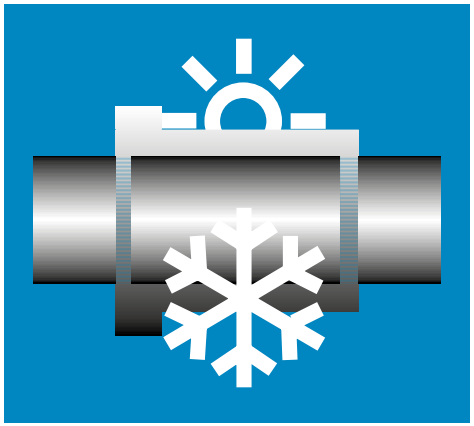


Diagram 04: Coefficient of friction as a function of the surface speed, p = 1MPa



The cost-effective outdoor all-rounder

No moisture absorption even with high ambient humidity

iglidur® P

When to use it?

- When low moisture absorption is fundamental
- When a cost-effective plain bearing for high pressure loads is required
- When high precision in high humidity and moderately high temperatures are required

When not to use it?

- When the maximum application temperature is above +120°C
  iglidur® K
- When mechanical reaming of the bore is necessary
  iglidur® M250
- When the highest wear resistance is required
  iglidur® W300

EN 09/2023

EN 09/2023

Bearing technology | Plain bearings | iglidur® P

Ø 3.0-
95.0mm

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

The cost-effective outdoor all-rounder

No moisture absorption even with high ambient humidity

Due to thermal stability and low water absorption, the iglidur® P bearings are among the most dimensionally strong all-round bearings under varying environmental conditions. iglidur® P plain bearings are recommended for pivoting and rotational movements at average loads.

- Low moisture absorption
- High wear resistance
- Suitable for high loads
- Cost-effective
- Lubrication-free
- Standard range from stock
- Maintenance-free

Typical application areas

- Solar technology
- Mechanical engineering
- Doors and gates
- Railway technology
- Sports and leisure

Descriptive technical specifications		
Wear resistance at +23°C	–	+
Wear resistance at +90°C	–	+
Wear resistance at +150°C	–	+
Slide property	–	+
Wear resistance under water	–	+
Media resistance	–	+
Resistant to edge pressures	–	+
Resistant to shock and impact loads	–	+
Dirt resistance	–	+

Online product finder
www.igus.eu/iglidur-finder

Online service life calculation
www.igus.eu/iglidur-expert

EN 09/2023

iglidur® P
+130°C
50MPa

Technical data

General properties			Testing method
Density	g/cm³	1.58	
Colour		black	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.2	DIN 53495
Max. moisture absorption	% weight	0.4	
Coefficient of friction, dynamic, against steel	µ	0.06-0.21	
pv value, max. (dry)	MPa · m/s	0.39	
Mechanical properties			
Flexural modulus	MPa	5,300	DIN 53457
Flexural strength at +20°C	MPa	120	DIN 53452
Compressive strength	MPa	66	
Max. permissible surface pressure (+20°C)	MPa	50	
Shore D hardness		75	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+130	
Max. application temperature short-term	°C	+200	
Min. application temperature	°C	-40	
Thermal conductivity	W/m · K	0.25	ASTM C 177
Coefficient of thermal expansion (at +23°C)	$K^{-1} \cdot 10^{-5}$	4	DIN 53752
Electrical properties			
Specific transitional resistance	Ωcm	$> 10^{13}$	DIN IEC 93
Surface resistance	Ω	$> 10^{12}$	DIN 53482

Table 01: Material properties

-40°C up to +130°C

50MPa

HB

RoHS-II

ISO 3547-1

The iglidur® P plain bearings are a cost-effective, maintenance-free bearing solution for the user. Compared to iglidur® G, plain bearings made from iglidur® P are suitable for use with rotational movements and average loads.

Moisture absorption

The moisture absorption of iglidur® P plain bearings in ambient conditions is approximately 0.2% weight. The saturation limit submerged in water is 0.4% weight. This low moisture absorption is well below the values of iglidur® G.

Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is only possible to a limited extent.

Radiation resistance

Plain bearings made from iglidur® P have limited use under radioactive radiation. They are resistant up to a radiation intensity of $5 \cdot 10^2$ Gy.

Resistance to weathering

iglidur® P plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolourations are only superficial.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® P plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® P at radial loads. At the maximum recommended surface pressure of 50MPa, the deformation is less than 4%.
Surface pressure, page 45

EN 09/2023

Bearing technology | Plain bearings | iglidur® P

Permissible surface speeds

Plain bearings made from iglidur® P are maintenance-free plain bearings developed for low to medium surface speeds. The maximum values given in table 03 can only be achieved at a very low surface pressure. The maximum speed given is the speed at which an increase up to the continuous use temperature occurs due to friction.

Surface speed, page 48

Temperature

Even with its maximum long-term application temperature of +130°C, the values for iglidur® P do not quite come up to those of iglidur® G. The temperatures prevailing in the bearing system also have an influence on the wear. The wear rises with increasing temperatures. For temperatures over +90°C an additional securing is required.

Application temperatures, page 53
Additional securing, page 53

Friction and wear

The coefficient of friction declines just as the wear resistance with increasing load (diagrams 04 and 05). iglidur® P plain bearings obtain a minimum coefficient of friction on shafts with a surface finish Ra from 0.1-0.2µm. Both smoother and rougher shaft surface finish cause the friction to clearly increase.

Coefficient of friction and surfaces, page 51
Wear resistance, page 54

Shaft materials

Diagram 06 shows results of testing different shaft materials with plain bearings made from iglidur® P. For rotational movements, the wear of iglidur® P with Cf53 and HR carbon steel shafts is very low. On the other hand, the bearings hard-chromed shafts result in higher wear than other shaft materials even in the low load range. For example at a load of 2MPa, cold rolled steel is six times better than 304 stainless steel. For pivoting movement, hardened shafts and 304 stainless steel perform better than that of a softer unhardened carbon shafts.

Shaft materials, page 56

Installation tolerances

iglidur® P plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 61

Chemicals	Resistance
Alcohols	+
Diluted acids	0
Diluted alkalines	–
Fuels	+
Greases, oils without additives	+
Hydrocarbons	–
Strong acids	–
Strong alkalines	–

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1170

		Rotating	Oscillating	linear
Long-term	m/s	1.0	0.7	3.0
Short-term	m/s	2.0	1.4	4.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction µ	0.06-0.21	0.09	0.04	0.04

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

	Housing		Plain bearings		Shaft	
Ø d1 [mm]	H7 [mm]		E10 [mm]		h9 [mm]	
0-3	+0.000	+0.010	+0.014	+0.054	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.020	+0.068	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.025	+0.083	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.032	+0.102	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.040	+0.124	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.050	+0.150	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.060	+0.180	-0.074	+0.000
> 80-120	+0.000	+0.035	+0.072	+0.212	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.085	+0.245	-0.100	+0.000

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

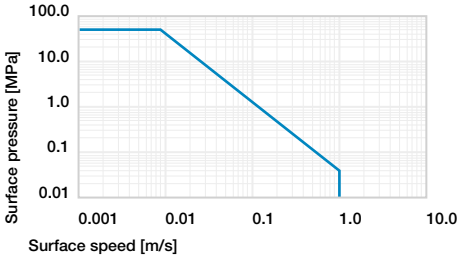


Diagram 01: Permissible pv values for iglidur® P plain bearing with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing.

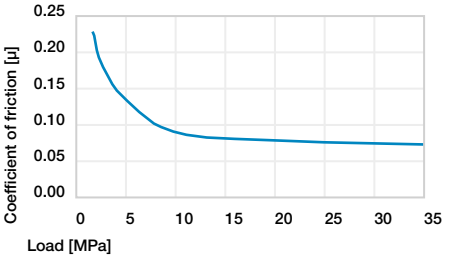


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

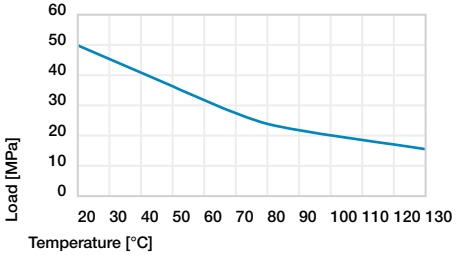


Diagram 02: Maximum recommended surface pressure as a function of temperature (50MPa at +20°C)

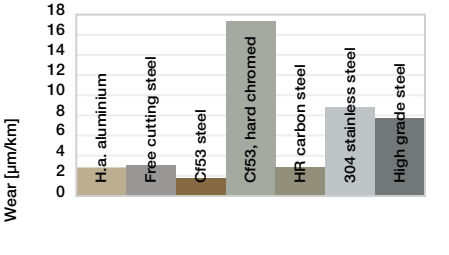


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

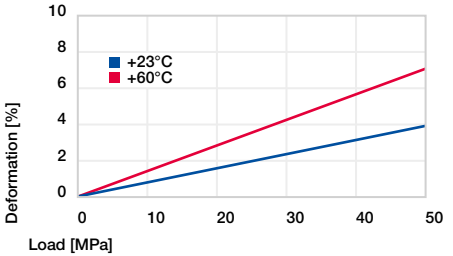


Diagram 03: Deformation under pressure and temperature

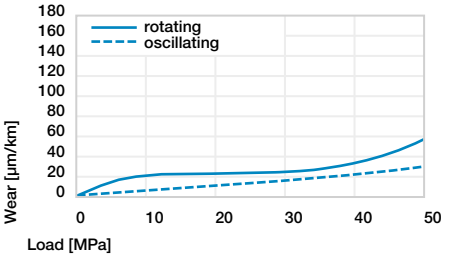


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

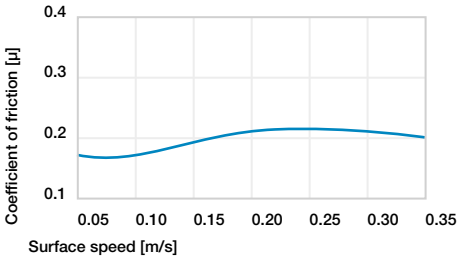
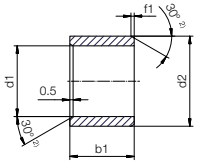


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

Bearing technology | Plain bearings | iglidur® P

Sleeve bearings (form S)



[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2

Dimensions according to ISO 3547-1 and special dimensions

Order example: PSM-0304-03 – no minimum order quantity.
P iglidur® material S Cylindrical M Metric 03 Inner Ø d1 04 Outer Ø d2 03 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
3.0	+0.014 +0.054	4.5	3.0	PSM-0304-03
4.0		5.5	4.0	PSM-0405-04
4.0	+0.020 +0.068	5.5	6.0	PSM-0405-06
5.0		7.0	5.0	PSM-0507-05
5.0		7.0	10.0	PSM-0507-10
6.0		8.0	6.0	PSM-0608-06
6.0		8.0	8.0	PSM-0608-08
6.0		8.0	10.0	PSM-0608-10
8.0		10.0	8.0	PSM-0810-08
8.0		10.0	10.0	PSM-0810-10
8.0	+0.025 +0.083	10.0	11.5	PSM-0810-11
8.0		10.0	12.0	PSM-0810-12
10.0		12.0	8.0	PSM-1012-08
10.0		12.0	10.0	PSM-1012-10
10.0		12.0	12.0	PSM-1012-12
10.0		12.0	15.0	PSM-1012-15
10.0		12.0	20.0	PSM-1012-20
12.0		14.0	10.0	PSM-1214-10
12.0		14.0	12.0	PSM-1214-12
12.0		14.0	15.0	PSM-1214-15
12.0		14.0	20.0	PSM-1214-20
12.0		14.0	25.0	PSM-1214-25
13.0	+0.032 +0.102	15.0	10.0	PSM-1315-10
13.0		15.0	20.0	PSM-1315-20
14.0		16.0	15.0	PSM-1416-15
14.0		16.0	20.0	PSM-1416-20
14.0		16.0	25.0	PSM-1416-25
15.0		17.0	15.0	PSM-1517-15
15.0		17.0	20.0	PSM-1517-20
15.0		17.0	25.0	PSM-1517-25
16.0		18.0	15.0	PSM-1618-15
16.0		18.0	20.0	PSM-1618-20
16.0	+0.032	18.0	25.0	PSM-1618-25
16.0	+0.102	18.0	42.0	PSM-1618-42
18.0		20.0	15.0	PSM-1820-15
18.0		20.0	20.0	PSM-1820-20
18.0		20.0	25.0	PSM-1820-25
18.0		20.0	33.0	PSM-1820-33
20.0		22.0	22.0	PSM-2022-22
20.0		22.0	30.0	PSM-2022-30
20.0		22.0	48.0	PSM-2022-48
20.0		22.0	51.0	PSM-2022-51
20.0		23.0	10.0	PSM-2023-10
20.0		23.0	15.0	PSM-2023-15
20.0		23.0	20.0	PSM-2023-20
20.0		23.0	25.0	PSM-2023-25
20.0		23.0	30.0	PSM-2023-30
22.0	+0.040 +0.124	24.0	42.0	PSM-2224-42
22.0		24.0	45.0	PSM-2224-45
22.0		25.0	15.0	PSM-2225-15
22.0		25.0	20.0	PSM-2225-20
22.0		25.0	25.0	PSM-2225-25
22.0		25.0	30.0	PSM-2225-30
22.0		25.0	45.0	PSM-2225-45
23.0		25.0	37.0	PSM-2325-37
23.0		25.0	58.0	PSM-2325-58
23.0		25.0	68.0	PSM-2325-68

[3] After press-fit. *Testing methods, page 61*

EN 09/2023

iglidur® P
+130°C
50MPa

Product range

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
24.0		27.0	15.0	PSM-2427-15
24.0		27.0	20.0	PSM-2427-20
24.0		27.0	25.0	PSM-2427-25
24.0		27.0	30.0	PSM-2427-30
25.0		28.0	15.0	PSM-2528-15
25.0		28.0	20.0	PSM-2528-20
25.0		28.0	25.0	PSM-2528-25
25.0		28.0	30.0	PSM-2528-30
25.0	+0.040	28.0	35.0	PSM-2528-35
26.0	+0.124	30.0	25.0	PSM-2630-25
28.0		32.0	20.0	PSM-2832-20
28.0		32.0	25.0	PSM-2832-25
28.0		32.0	30.0	PSM-2832-30
30.0		34.0	20.0	PSM-3034-20
30.0		34.0	25.0	PSM-3034-25
30.0		34.0	30.0	PSM-3034-30
30.0		34.0	40.0	PSM-3034-40
30.0		34.0	45.0	PSM-3034-45
32.0		36.0	20.0	PSM-3236-20
32.0		36.0	30.0	PSM-3236-30
32.0	+0.050 +0.150	36.0	40.0	PSM-3236-40
35.0		39.0	20.0	PSM-3539-20
35.0		39.0	30.0	PSM-3539-30
35.0		39.0	40.0	PSM-3539-40
35.0		39.0	50.0	PSM-3539-50
40.0		44.0	20.0	PSM-4044-20
40.0		44.0	30.0	PSM-4044-30
40.0		44.0	40.0	PSM-4044-40
40.0		44.0	50.0	PSM-4044-50
40.0	+0.050	44.0	58.0	PSM-4044-58
45.0	+0.150	50.0	20.0	PSM-4550-20
45.0		50.0	30.0	PSM-4550-30
45.0		50.0	40.0	PSM-4550-40
45.0		50.0	50.0	PSM-4550-50
50.0		55.0	20.0	PSM-5055-20
50.0		55.0	30.0	PSM-5055-30
50.0		55.0	40.0	PSM-5055-40
50.0		55.0	50.0	PSM-5055-50
50.0		55.0	60.0	PSM-5055-60
60.0	+0.060	65.0	50.0	PSM-6065-50
60.0	+0.180	65.0	60.0	PSM-6065-60
65.0		70.0	50.0	PSM-6570-50
75.0		80.0	80.0	PSM-7580-80
90.0	+0.072	95.0	100.0	PSM-9095-100
95.0	+0.212	100.0	100.0	PSM-95100-100

[3] After press-fit. *Testing methods, page 61*

Available from stock
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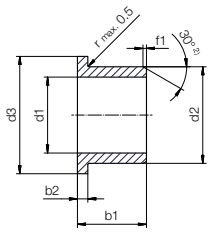
Bearing technology | Plain bearings | iglidur® P

Flange bearings (form F)



[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2

Dimensions according to ISO 3547-1 and special dimensions

Order example: PFM-0405-04 – no minimum order quantity.
P iglidur® material F With flange M Metric 04 Inner Ø d1 05 Outer Ø d2 04 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
4.0		5.5	9.5	4.0	0.75	PFM-0405-04
5.0	+0.020	6.0	10.0	3.0	0.50	PFM-0506-03
5.0	+0.068	7.0	11.0	5.0	1.00	PFM-0507-05
6.0		8.0	12.0	4.0	1.00	PFM-0608-04
6.0		8.0	12.0	6.0	1.00	PFM-0608-06
6.0		8.0	12.0	8.0	1.00	PFM-0608-08
7.0		9.0	15.0	4.0	1.00	PFM-0709-04
8.0		10.0	15.0	5.5	1.00	PFM-0810-05
8.0	+0.025	10.0	15.0	7.5	1.00	PFM-0810-07
8.0	+0.083	10.0	15.0	9.5	1.00	PFM-0810-09
8.0		10.0	15.0	10.0	1.00	PFM-0810-10
8.0		10.0	12.0	10.0	1.00	PFM-081012-10
8.0		10.0	15.0	15.0	1.00	PFM-0810-15
10.0	+0.032	12.0	18.0	5.0	1.00	PFM-1012-05
	+0.102					
10.0		12.0	18.0	7.0	1.00	PFM-1012-07
10.0	+0.025	12.0	18.0	9.0	1.00	PFM-1012-09
10.0	+0.083	12.0	18.0	10.0	1.00	PFM-1012-10
10.0		12.0	18.0	12.0	1.00	PFM-1012-12
10.0		12.0	18.0	17.0	1.00	PFM-1012-17
12.0		14.0	20.0	7.0	1.00	PFM-1214-07
12.0		14.0	18.0	8.0	1.00	PFM-121418-08
12.0		14.0	20.0	9.0	1.00	PFM-1214-09
12.0	+0.032	14.0	20.0	10.0	1.00	PFM-1214-10
12.0	+0.102	14.0	20.0	12.0	1.00	PFM-1214-12
12.0		14.0	20.0	15.0	1.00	PFM-1214-15
12.0		14.0	20.0	17.0	1.00	PFM-1214-17
14.0		16.0	22.0	4.0	1.00	PFM-1416-04

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
14.0		16.0	22.0	8.0	1.00	PFM-1416-08
14.0	+0.032	16.0	22.0	12.0	1.00	PFM-1416-12
14.0	+0.102	16.0	22.0	17.0	1.00	PFM-1416-17
14.0		16.0	24.0	25.0	1.00	PFM-141624-25
14.0	+0.050	20.0	25.0	10.0	3.00	PFM-1420-10
	+0.160					
15.0		17.0	23.0	9.0	1.00	PFM-1517-09
15.0		17.0	23.0	12.0	1.00	PFM-1517-12
15.0		17.0	23.0	17.0	1.00	PFM-1517-17
15.0		17.0	23.0	22.0	1.00	PFM-1517-22
15.0	+0.032	18.0	24.0	32.0	1.50	PFM-151824-32
16.0	+0.102	18.0	24.0	12.0	1.00	PFM-1618-12
16.0		18.0	24.0	17.0	1.00	PFM-1618-17
16.0		18.0	24.0	40.0	1.00	PFM-161824-40
17.0		19.0	25.0	25.0	1.00	PFM-1719-25
18.0		20.0	26.0	12.0	1.00	PFM-1820-12
18.0		20.0	26.0	17.0	1.00	PFM-1820-17
18.0		20.0	26.0	22.0	1.00	PFM-1820-22
20.0		23.0	30.0	11.5	1.50	PFM-2023-11
20.0		23.0	28.0	15.0	1.50	PFM-202328-15
20.0		23.0	30.0	16.5	1.50	PFM-2023-16
20.0		23.0	30.0	21.5	1.50	PFM-2023-21
20.0	+0.040	23.0	30.0	30.0	1.50	PFM-2023-30
24.0	+0.124	27.0	32.0	22.0	1.50	PFM-2427-22
25.0		28.0	35.0	11.5	1.50	PFM-2528-11
25.0		28.0	35.0	16.5	1.50	PFM-2528-16
25.0		28.0	35.0	21.5	1.50	PFM-2528-21
30.0		34.0	42.0	16.0	2.00	PFM-3034-16

[3] After press-fit. *Testing methods, page 61*

EN 09/2023

iglidur® P
+130°C
50MPa

Product range

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
30.0	+0.040	34.0	42.0	26.0	2.00	PFM-3034-26
30.0	+0.124	34.0	42.0	30.0	2.00	PFM-3034-30
30.0		34.0	42.0	37.0	2.00	PFM-3034-37
35.0		39.0	47.0	16.0	2.00	PFM-3539-16
35.0	+0.050	39.0	47.0	26.0	2.00	PFM-3539-26
40.0	+0.150	44.0	52.0	30.0	2.00	PFM-4044-30
40.0		44.0	52.0	40.0	2.00	PFM-4044-40

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
45.0	+0.050	50.0	58.0	50.0	2.00	PFM-4550-50
50.0	+0.150	55.0	63.0	50.0	2.00	PFM-5055-50
60.0		65.0	73.0	40.0	2.00	PFM-6065-40
60.0	+0.060	65.0	73.0	50.0	2.00	PFM-6065-50
70.0	+0.180	75.0	83.0	50.0	2.00	PFM-7075-50
80.0		85.0	93.0	100.0	2.50	PFM-8085-100

[3] After press-fit. *Testing methods, page 61*

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Versatile and cost-effective

For medium temperatures and wet environments

iglidur® K

When to use it?

- When a cost-effective all-round plain bearing is required
- For operations in wet environments
- When good wear resistance is required at medium loads

When not to use it?

- When the highest wear resistance is required
  iglidur® W300
- When high media resistance is required
  iglidur® X6
- When a high-temperature bearing is required
  iglidur® H

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Bearing technology | Plain bearings | iglidur® K

Ø
6.0-20.0mm

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

Versatile and cost-effective
For medium temperatures and wet environments

iglidur® K is the cost-effective general purpose bearing for medium temperatures, low moisture absorption and good environmental resistance.

- Low moisture absorption
- Wear-resistant
- Cost-effective
- Lubrication-free
- Maintenance-free

Typical application areas

- Printing industry
- Electronics industry
- Packaging
- Medical technology
- Polymer processing machines

Descriptive technical specifications			
Wear resistance at +23°C	–	■■■□□	+
Wear resistance at +90°C	–	■■■□□	+
Wear resistance at +150°C	–	■■□□□	+
Slide property	–	■■■■□	+
Wear resistance under water	–	■■□□□	+
Media resistance	–	■■■□□	+
Resistant to edge pressures	–	■■■□□	+
Resistant to shock and impact loads	–	■■■□□	+
Dirt resistance	–	■■■■□	+

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Online service life calculation
www.igus.eu/iglidur-expert

EN 09/2023

iglidur® K
+170°C
50MPa

Technical data

General properties			Testing method
Density	g/cm³	1.52	
Colour		yellow-beige	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.1	DIN 53495
Max. moisture absorption	% weight	0.6	
Coefficient of friction, dynamic, against steel	µ	0.06-0.21	
pv value, max. (dry)	MPa · m/s	0.30	
Mechanical properties			
Flexural modulus	MPa	3,500	DIN 53457
Flexural strength at +20°C	MPa	80	DIN 53452
Compressive strength	MPa	60	
Max. permissible surface pressure (+20°C)	MPa	50	
Shore D hardness		72	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+170	
Max. application temperature short-term	°C	+240	
Min. application temperature	°C	-40	
Thermal conductivity	W/m · K	0.25	ASTM C 177
Coefficient of thermal expansion (at +23°C)	$K^{-1} \cdot 10^{-5}$	3	DIN 53752
Electrical properties			
Specific transitional resistance	Ωcm	$> 10^{12}$	DIN IEC 93
Surface resistance	Ω	$> 10^{12}$	DIN 53482

Table 01: Material properties

-40°C up to +170°C

50MPa

HB

RoHS-II

ISO 3547-1

iglidur® K is characterised by its good wear characteristics at low moisture absorption and good thermal and mechanical specifications. This supports a very universal application spectrum.

Moisture absorption

The moisture absorption of iglidur® K plain bearings in ambient conditions is approximately 0.1% weight. The saturation limit submerged in water is 0.6% weight. These values are so low that a moisture expansion need to be considered only in extreme cases.

Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® K bearings.

Radiation resistance

Plain bearings made from iglidur® K are resistant up to a radiation intensity of $5 \cdot 10^2$ Gy.

Resistance to weathering

iglidur® K plain bearings are resistant to weathering. The material properties are slightly affected. Discolouration occurs.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® K plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® K at radial loads. At the maximum recommended surface pressure of 50MPa, the deformation is less than 3%. A possible deformation could be, among others, dependant on the duty cycle of the load.
Surface pressure, page 45

EN 09/2023

Bearing technology | Plain bearings | iglidur® K

Permissible surface speeds

iglidur® K has been developed for low to medium surface speeds. The maximum values shown in table 03 can only be achieved at low pressures. At the given speeds, friction can cause a temperature increase to maximum permissible levels. In practice, though, this level is rarely reached due to varying application conditions.

Surface speed, page 48

Temperature

The temperatures prevailing in the bearing system also have an influence on the wear. With increasing temperatures, the wear increases and this effect is significant when temperatures rise over +100°C. For temperatures over +70°C an additional securing is required.

Application temperatures, page 53
Additional securing, page 53

Friction and wear

Similar to wear resistance, the coefficient of friction μ also changes with the surface speed and load (diagrams 04 and 05).

Coefficient of friction and surfaces, page 51
Wear resistance, page 54

Shaft materials

The friction and wear are also dependent, to a large degree, on the mating partner. Shafts that are too smooth increase both the coefficient of friction and the wear of the bearing. For iglidur® K a ground surface with an average surface finish Ra = 0.15-0.2μm is recommended. Diagram 06 shows results of testing different shaft materials with plain bearings made from iglidur® K. It is important to notice that with increasing loads, the recommended hardness of the shaft increases. The "soft" shafts tend to wear more easily and thus increase the wear of the overall system, if the loads exceed 2MPa. The comparison of rotation and pivoting shows that the wear is almost identical at a pressure up to 5MPa. The higher the loads, the greater the difference (diagram 07).

Shaft materials, page 56

Installation tolerances

iglidur® K plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table). In relation to the installation tolerance, the inner diameter changes with the absorption of humidity.

Testing methods, page 61

Chemicals	Resistance
Alcohols	+ up to 0
Diluted acids	0 up to –
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	–
Strong alkalines	0

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1170

		Rotating	Oscillating	linear
Long-term	m/s	1.0	0.7	3.0
Short-term	m/s	2.0	1.4	4.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.06-0.21	0.09	0.04	0.04

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

	Housing		Plain bearings		Shaft	
Ø d1 [mm]	H7 [mm]		E10 [mm]		h9 [mm]	
0-3	+0.000	+0.010	+0.014	+0.054	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.020	+0.068	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.025	+0.083	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.032	+0.102	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.040	+0.124	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.050	+0.150	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.060	+0.180	-0.074	+0.000
> 80-120	+0.000	+0.035	+0.072	+0.212	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.085	+0.245	-0.100	+0.000

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

iglidur® K
+170°C
50MPa

Technical data

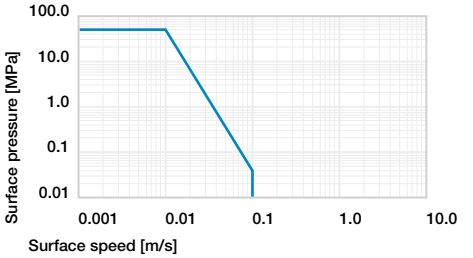


Diagram 01: Permissible pv values for iglidur® K plain bearing with a wall thickness of 1 mm dry operation against a steel shaft at +20°C, mounted in a steel housing.

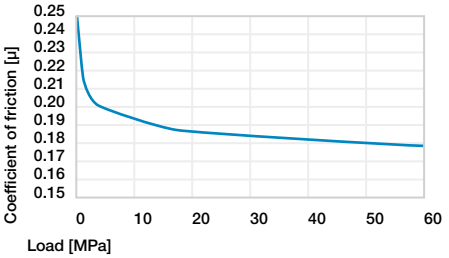


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

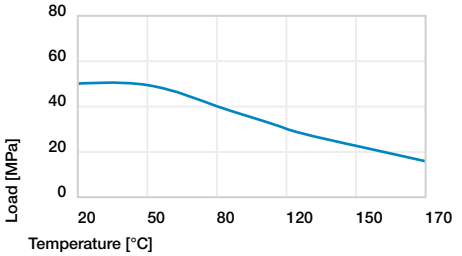


Diagram 02: Maximum recommended surface pressure as a function of temperature (50MPa at +20°C)

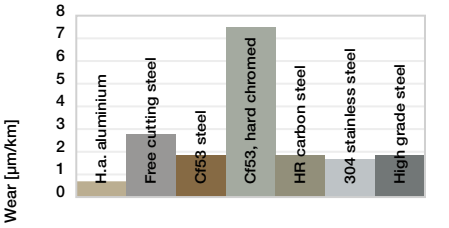


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

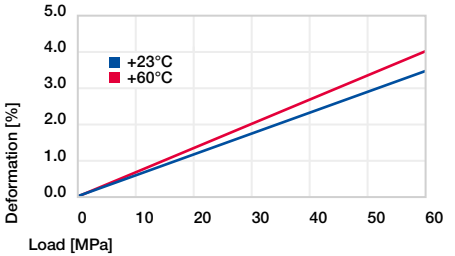


Diagram 03: Deformation under pressure and temperature

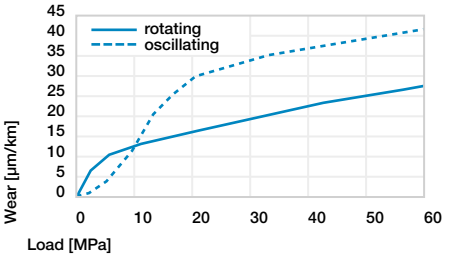


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

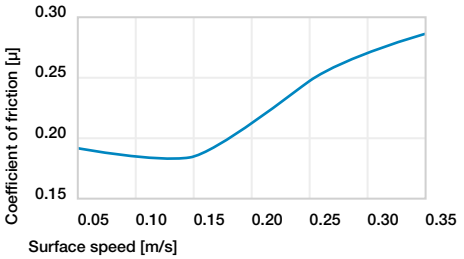
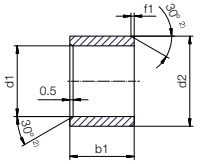


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

Bearing technology | Plain bearings | iglidur® K

Sleeve bearings (form S)



[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30
f1 [mm]	0.3	0.5	0.8

Dimensions according to ISO 3547-1 and special dimensions

Order example: KSM-0608-06 – no minimum order quantity.
K iglidur® material S Cylindrical M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	b1 h13 [mm]	Part No.
6.0	+0.020 +0.068	8.0	6.0	**KSM-0608-06**
8.0	+0.025 +0.083	10.0	10.0	**KSM-0810-10**
10.0		12.0	10.0	**KSM-1012-10**
12.0	+0.032 +0.102	14.0	12.0	**KSM-1214-12**
16.0		18.0	15.0	**KSM-1618-15**
20.0	+0.040 +0.124	23.0	20.0	**KSM-2023-20**

[3] After press-fit. *Testing methods, page 61*

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iglidur® K
+170°C
50MPa

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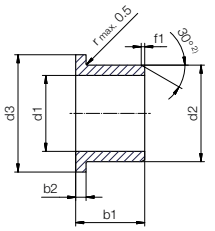
Flange bearings (form F)



[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 6-12	Ø 12-30
f1 [mm]	0.5	0.8

Dimensions according to ISO 3547-1 and special dimensions

Order example: KFM-0608-06 – no minimum order quantity.
K iglidur® material F With flange M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

d1 [mm]	d1 Tolerance[3]	d2 [mm]	d3 d13[3] [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
6.0	+0.020 +0.068	8.0	12.0	6.0	1.00	**KFM-0608-06**
8.0	+0.025 +0.083	10.0	15.0	10.0	1.00	**KFM-0810-10**
10.0		12.0	18.0	10.0	1.00	**KFM-1012-10**
12.0	+0.032 +0.102	14.0	20.0	12.0	1.00	**KFM-1214-12**
16.0		18.0	24.0	17.0	1.00	**KFM-1618-17**
20.0	+0.040 +0.124	23.0	30.0	21.5	1.50	**KFM-2023-21**

[3] After press-fit. *Testing methods, page 61*

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No low-quantity surcharges.
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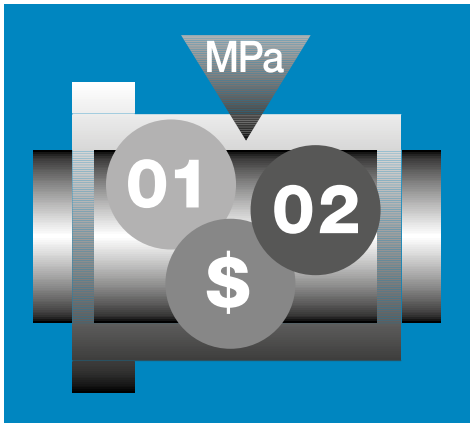

Low-cost material for high-volume production

For applications with mainly static loads

iglidur® GLW

When to use it?

- When an economical universal bearing for high volumes is required
- For high, primarily static loads
- For low to medium speeds

When not to use it?

- When mechanical reaming of the bore is necessary
  iglidur® M250
- For primarily dynamic loads
  iglidur® G
- When the highest wear resistance is required
  iglidur® W300
- When temperatures are constantly higher than +130 °C
  iglidur® K
- For underwater applications
  iglidur® H2

EN 09/2023

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Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

Low-cost material for high-volume production
For applications with mainly static loads

iglidur® GLW plain bearings are preferred in applications with static load, where only occasional movement takes place.

- Applications with static loads
- Cost-effective
- Resistant to dirt
- Resistant to vibrations
- Lubrication-free
- Maintenance-free

Typical application areas

- Automation
- Automotive
- Industrial handling

Descriptive technical specifications		
Wear resistance at +23°C	–	+
Wear resistance at +90°C	–	+
Wear resistance at +150°C	-	+
Slide property	–	+
Wear resistance under water	-	+
Media resistance	–	+
Resistant to edge pressures	–	+
Resistant to shock and impact loads	–	+
Dirt resistance	–	+

Online product finder
www.igus.eu/iglidur-finder

Online service life calculation
www.igus.eu/iglidur-expert

iglidur® GLW
+100°C
80MPa

Technical data

General properties			Testing method
Density	g/cm³	1.36	
Colour		black	
Max. moisture absorption at +23°C/50% r.h.	% weight	1.3	DIN 53495
Max. moisture absorption	% weight	5.5	
Coefficient of friction, dynamic, against steel	µ	0.10-0.24	
pv value, max. (dry)	MPa · m/s	0.30	
Mechanical properties			
Flexural modulus	MPa	7,700	DIN 53457
Flexural strength at +20°C	MPa	235	DIN 53452
Compressive strength	MPa	74	
Max. permissible surface pressure (+20°C)	MPa	80	
Shore D hardness		78	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+100	
Max. application temperature short-term	°C	+160	
Min. application temperature	°C	-40	
Thermal conductivity	W/m · K	0.24	ASTM C 177
Coefficient of thermal expansion (at +23°C)	$K^{-1} \cdot 10^{-5}$	17	DIN 53752
Electrical properties			
Specific transitional resistance	Ωcm	$> 10^{11}$	DIN IEC 93
Surface resistance	Ω	$> 10^{11}$	DIN 53482

Table 01: Material properties

-40°C up to +100°C

80MPa

HB

RoHS-II

ISO 3547-1

With plain bearings made from iglidur® GLW, we can offer our customers an alternative to iglidur® G for high-volume production applications. Featuring similar mechanical designed as iglidur® G, iglidur® GLW plain bearings are primarily recommended for static loads. With regard to these applications, in which the dynamic properties of iglidur® G to a large extent are unimportant, iglidur® GLW presents a cost-effective alternative.

Moisture absorption
The moisture absorption of iglidur® GLW plain bearings in ambient conditions is approximately 1.3% weight. The saturation limit submerged in water is 5.5% weight. This must be taken into account for these types of applications.

Vacuum
In vacuum, any present moisture is released as vapour.

Radiation resistance
Plain bearings made from iglidur® GLW are resistant up to a radiation intensity of $3 \cdot 10^2$ Gy.

Resistance to weathering
iglidur® GLW plain bearings are resistant to weathering. The material properties are slightly affected. Discolouration occurs.

Mechanical properties
When temperatures increase, the compressive strength of iglidur® GLW plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® GLW as a function of radial pressure. At the recommended maximum surface pressure of 80MPa the deformation is less than 3% at room temperature. A plastic deformation can be negligible up to this value. It is however also dependent on the duty cycle of the load.
Surface pressure, page 45

Bearing technology | Plain bearings | iglidur® GLW

Permissible surface speeds

iglidur® GLW has been developed for low to medium surface speeds. During continuous operation, a maximum speed of 0.8m/s (rotating) or 2.5m/s (linear) is permissible. The maximum values shown in table 03 can only be achieved at low pressures. In practice, these values are rarely reached, due to the increasing temperatures approaching or exceeding the maximum permitted value.

Surface speed, page 48

Temperature

The ambient temperatures strongly influence the properties of plain bearings. Diagram 02 shows this inverse relationship. The wear rises with increasing temperatures. For temperatures over +80°C an additional securing is required.

Application temperatures, page 53
Additional securing, page 53

Friction and wear

Similar to wear resistance, the coefficient of friction μ also changes with the surface speed and load (diagrams 04 and 05).

Coefficient of friction and surfaces, page 51
Wear resistance, page 54

Shaft materials

The friction and wear are also dependent, to a large degree, on the mating partner. Shafts that are too smooth increase both the coefficient of friction and the wear of the bearing. For iglidur® GLW a ground surface with an average surface finish Ra = 0.1-0.2μm is recommended. Diagram 06 shows results of testing different shaft materials with plain bearings made from iglidur® GLW. If the shaft material you plan on using is not shown in these test results, please contact us.

Shaft materials, page 56

Installation tolerances

iglidur® GLW plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 61

Product range

iglidur® GLW plain bearings are manufactured to special order. For high volume applications, please request iglidur® GLW plain bearings as an alternative to iglidur® G.

Chemicals	Resistance
Alcohols	+ up to 0
Diluted acids	0 up to –
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	–
Strong alkalines	0

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1170

		Rotating	Oscillating	linear
Long-term	m/s	0.8	0.6	2.5
Short-term	m/s	1.0	0.7	3.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.10-0.24	0.09	0.04	0.04

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

Ø d1 [mm]	Housing H7 [mm]		Plain bearings E10 [mm]		Shaft h9 [mm]	
0-3	+0.000	+0.010	+0.014	+0.054	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.020	+0.068	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.025	+0.083	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.032	+0.102	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.040	+0.124	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.050	+0.150	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.060	+0.180	-0.074	+0.000
> 80-120	+0.000	+0.035	+0.072	+0.212	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.085	+0.245	-0.100	+0.000

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

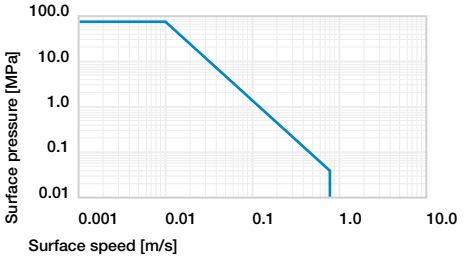

Diagram 01: Permissible pv values for iglidur® GLW with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

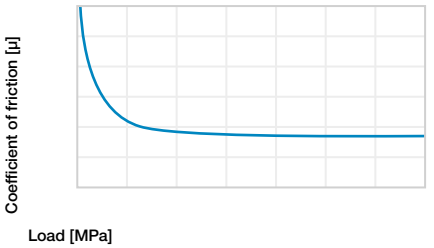

Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

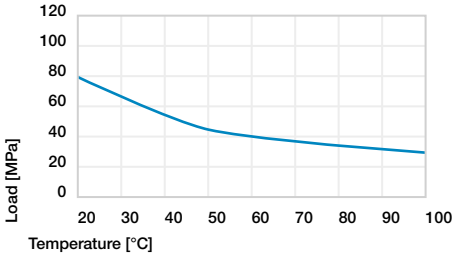

Diagram 02: Maximum recommended surface pressure as a function of temperature (80MPa at +20°C)

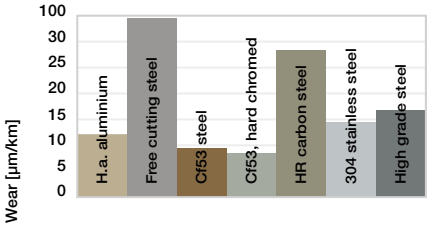

Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

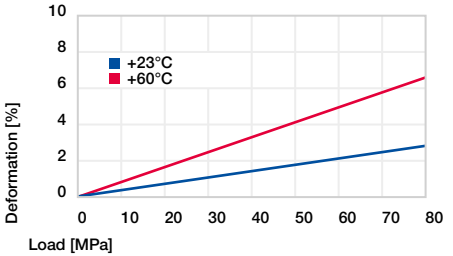

Diagram 03: Deformation under pressure and temperature

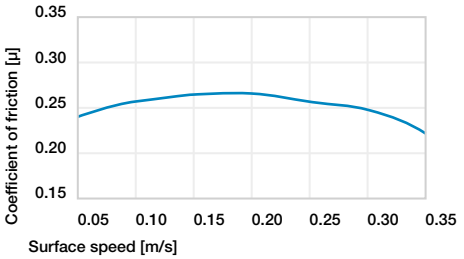

Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa