

Order key

Type Dimensions [mm]

A181 F M -0608-04

iglidur® material	Form F	Metric	Inner-Ø d1	Outer-Ø d2	Length b1
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Dimensions according to ISO 3547-1 and special dimensions

 Imperial dimensions available
 ▶ From page 1425

²⁾ Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the d1

 d1 [mm]: Ø 1-6 | Ø 6-12 | Ø 12-30 | Ø > 30
 f [mm]: 0.3 | 0.5 | 0.8 | 1.2

Dimensions [mm]

d1	d1- Tolerance ³⁾	d2	d3	b1	b2	Part No.
		d13	d13	h13	-0.14	
6.0		8.0	12.0	4.0	1.0	A181FM-0608-04
6.0	+0.020	8.0	12.0	6.0	1.0	A181FM-0608-06
6.0	+0.068	8.0	12.0	8.0	1.0	A181FM-0608-06
8.0		10.0	15.0	5.5	1.0	A181FM-0810-05
8.0		10.0	15.0	7.5	1.0	A181FM-0810-07
8.0		10.0	15.0	9.5	1.0	A181FM-0810-09
8.0	+0.025	10.0	15.0	10.0	1.0	A181FM-0810-10
10.0	+0.083	12.0	18.0	7.0	1.0	A181FM-1012-07
10.0		12.0	18.0	9.0	1.0	A181FM-1012-09
10.0		12.0	18.0	10.0	1.0	A181FM-1012-10
10.0		12.0	18.0	12.0	1.0	A181FM-1012-12
10.0		12.0	18.0	17.0	1.0	A181FM-1012-17
12.0		14.0	20.0	7.0	1.0	A181FM-1214-07
12.0		14.0	20.0	9.0	1.0	A181FM-1214-09
12.0		14.0	20.0	12.0	1.0	A181FM-1214-12
12.0	+0.032	14.0	20.0	17.0	1.0	A181FM-1214-17
14.0	+0.102	16.0	22.0	12.0	1.0	A181FM-1416-12
14.0		16.0	22.0	17.0	1.0	A181FM-1416-17
15.0		17.0	23.0	9.0	1.0	A181FM-1517-09
15.0		17.0	23.0	12.0	1.0	A181FM-1517-12

d1	d1- Tolerance ³⁾	d2	d3	b1	b2	Part No.
		d13	d13	h13	-0.14	
15.0		17.0	23.0	17.0	1.0	A181FM-1517-17
16.0		18.0	24.0	12.0	1.0	A181FM-1618-12
16.0	+0.032	18.0	24.0	17.0	1.0	A181FM-1618-17
18.0	+0.102	20.0	26.0	12.0	1.0	A181FM-1820-12
18.0		20.0	26.0	17.0	1.0	A181FM-1820-17
18.0		20.0	26.0	22.0	1.0	A181FM-1820-22
20.0		23.0	30.0	11.5	1.5	A181FM-2023-11
20.0		23.0	30.0	16.5	1.5	A181FM-2023-16
20.0		23.0	30.0	21.5	1.5	A181FM-2023-21
25.0		28.0	35.0	11.5	1.5	A181FM-2528-11
25.0		28.0	35.0	16.5	1.5	A181FM-2528-16
25.0		28.0	35.0	21.5	1.5	A181FM-2528-21
30.0	+0.040	34.0	42.0	16.0	2.0	A181FM-3034-16
30.0	+0.124	34.0	42.0	26.0	2.0	A181FM-3034-26
35.0		39.0	47.0	16.0	2.0	A181FM-3539-16
35.0		39.0	47.0	26.0	2.0	A181FM-3539-26
40.0		44.0	52.0	30.0	2.0	A181FM-4044-30
40.0		44.0	52.0	40.0	2.0	A181FM-4044-40
45.0		50.0	58.0	50.0	2.0	A181FM-4550-50

³⁾ After press-fit. Testing methods ▶ Page 57

Couldn't find your size?

Do you need another length, other dimensions or tolerances? You need a particular design or alternative for your application? Please call us. igus® listens to your needs and provides you a solution very quickly.



The endurance runner at higher temperatures in the food sector – iglidur® A350

Compliant with EC directive 10/2011 EC

FDA-compliant

For use with temperatures up to +180 °C

For medium and high loads

Equally good for both oscillating and rotating applications

Lubrication and maintenance-free

Standard range from stock



FDA- and EC10/2011 compliant

Compliant with EC directive 10/2011 EC, FDA-compliant

For use with temperatures up to +180 °C

For medium and high loads

Equally good for both oscillating and rotating applications

An universal bearing for use in the area of food and pharmaceutical industries. Composition of FDA-conform materials allows the use in areas where due to the contact with food other bearings cannot be used. With good tribological and mechanical properties, iglidur® A350 bearings are suitable for general purpose use in food machinery.



When to use it?

- When FDA-compliance is required
- If wear-resistance and FDA-compliance is necessary at high loads
- If the bearing is use in acid environment



When not to use it?

- When temperatures are continuously greater than +180 °C
▶ iglidur® A500, page 355
- When the maximum abrasion resistance is necessary
▶ iglidur® J, page 141
- When a cost-effective FDA bearing is required
▶ iglidur® A200, page 371
▶ iglidur® A180, page 363
- For high speeds
▶ iglidur® J, page 141

Typical application areas

- Food industry
- Beverage technology
- Medical technology



Available from stock

Detailed information about delivery time online.



Block pricing online

No minimum order value. From batch size 1.



Max. +180 °C
Min. -100 °C



Ø 4–50 mm

More dimensions upon request



Imperial dimensions available

▶ From page 1391



Online product finder

▶ www.igus.eu/iglidur-finder



iglidur® A350 material complies with EC Directive 10/2011 EC and also with FDA (Food and Drug Administration) specifications for repeated contact with food.

Material properties

General properties	Unit	iglidur® A350	Testing method
Density	g/cm³	1.42	
Colour		blue	
Max. moisture absorption at +23 °C/50 % r.h.	% weight	0.6	DIN 53495
Max. water absorption	% weight	1.9	
Coefficient of sliding friction, dynamic, against steel	μ	0.1–0.2	
pv value, max. (dry)	MPa · m/s	0.4	
Mechanical properties			
Flexural modulus	MPa	2,000	DIN 53457
Flexural strength at +20 °C	MPa	110	DIN 53452
Compressive strength	MPa	78	
Max. recommended surface pressure (+20 °C)	MPa	60	
Shore-D hardness		76	DIN 53505
Physical and thermal properties			
Max. long-term application temperature	°C	+180	
Max. short-term application temperature	°C	+210	
Min. long-term application temperature	°C	-100	
Heat conductivity	W/m · K	0.24	ASTM C 177
Coefficient of thermal expansion (at +23 °C)	K ⁻¹ · 10 ⁻⁵	8	DIN 53752
Electrical properties			
Specific contact resistance	Ωcm	> 10 ¹¹	DIN IEC 93
Surface resistance	Ω	> 10 ¹¹	DIN 53482

Table 01: Material properties table

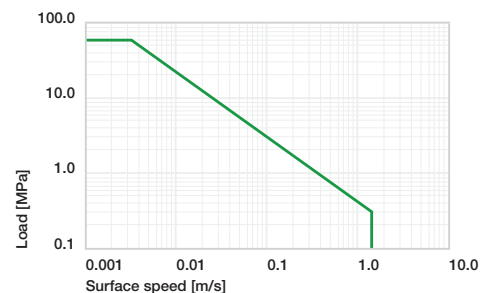


Diagram 01: Permissible pv values for iglidur® A350 bearings with a wall thickness of 1 mm dry running against a steel shaft, at +20 °C, mounted in a steel housing

Moisture absorption

The humidity absorption of iglidur® A350 is low and can be ignored when using standard-bearings. Even when saturated with water, iglidur® A350 does not absorb more than 1.9 % weight of water.

▶ Diagram, www.igus.eu/a350-moisture

Vacuum

When used in a vacuum, the iglidur® A350 plain bearings release moisture as a vapour. Only dehumidified bearings are suitable in vacuum.

Radiation resistance

Plain bearings made from iglidur® A350 are resistant to radiation up to an intensity of 2 · 10² Gy.

UV resistance

iglidur® A350 plain bearings are resistant to UV radiation.

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

+ resistant 0 conditionally resistant – not resistant

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

Table 02: Chemical resistance

▶ Chemical table, page 1478

iglidur® A350 bearings are made for practically all loads in food and packaging machinery. Even high loads, often seen in lifting equipment, are taken easily and the bearings work flawlessly without any external lubrication.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® A350 plain bearings decreases. The diagram 02 shows this inverse relationship. The recommended maximum surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

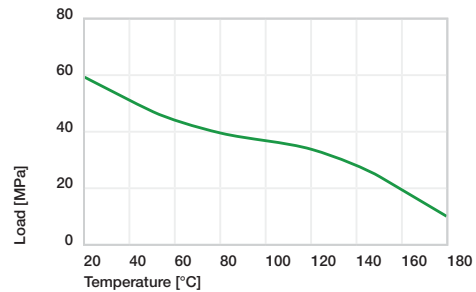


Diagram 02: Permissible maximum surface pressure of iglidur® A350 as a function of temperature (60 MPa at +20 °C)

Diagram 03 shows the elastic deformation of iglidur® A350 under different loads. At the recommended maximum surface pressure of 60 MPa the deformation at room temperature is less than 5%.

► Surface pressure, page 41

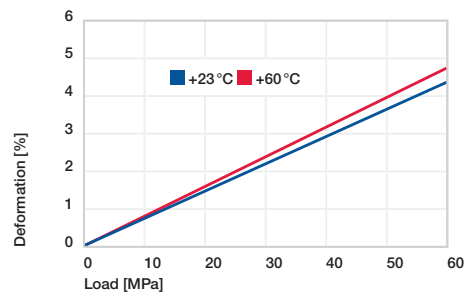


Diagram 03: Deformation under pressure and temperature

Permissible surface speeds

iglidur® A350 bearings are suitable for low and medium speeds in rotating and oscillating use. Even linear movements can often be realised with iglidur® A350. With high sliding speeds, iglidur® J or iglidur® L250 can be interesting alternatives because the wear rate of these materials is better.

► Surface speed, page 44

m/s	Rotating	Oscillating	Linear
Continuous	1	0.8	2.5
Short-term	1.2	0.9	3

Table 03: Maximum surface speeds

Temperatures

Its temperature resistance makes iglidur® A350 an ideal material for bearing in the area of foodstuffs. At temperatures over +140 °C an additional securing is required. The wear-rate of iglidur® A350 bearings rises only little with higher temperatures. Tests have shown good wear results at +100 °C on all tested shaft materials.

► Application temperatures, page 49

► Additional securing, page 49

Friction and wear

The coefficient of friction of iglidur® A350 on a steel shaft are in the mid range (diagrams 04 and 05).

► Coefficients of friction and surfaces, page 47

► Wear resistance, page 50

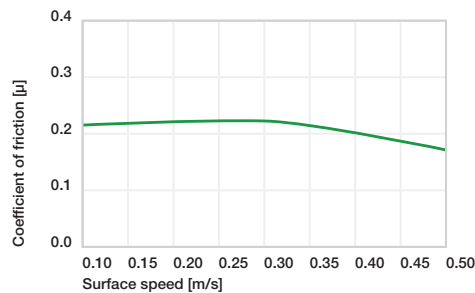


Diagram 04: Coefficient of friction as a function of the surface speed, p = 1 MPa

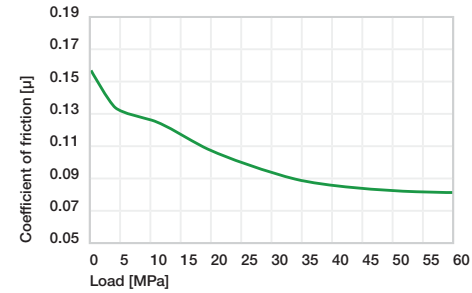


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01 m/s

Shaft materials

The corrosion-resistant steels are rather considered a natural choice for use in the food industry.

The trials were therefore carried out especially on such materials. It has been shown that there is no clear favourite and 304 stainless steel, high grade steel and hard chrome plated steel are all suitable. Hard-anodised aluminium is also well suited for both linear and rotating movements.

► Shaft materials, page 52

iglidur® A350	Dry	Greases	Oil	Water
C.o.f. μ	0.1–0.2	0.09	0.04	0.04

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

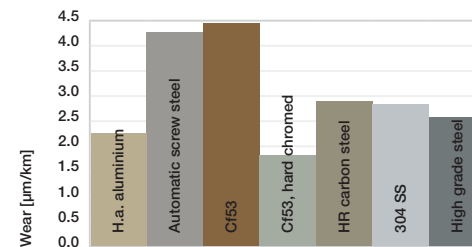


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1 MPa, v = 0.3 m/s

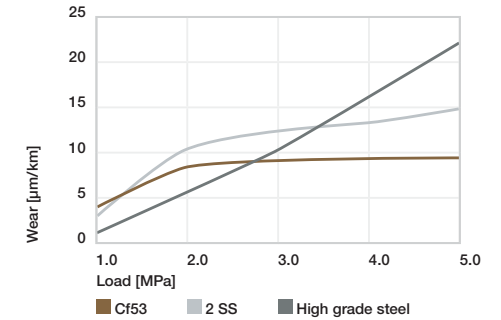


Diagram 07: Wear, rotating with different shaft materials, as a function of the pressure

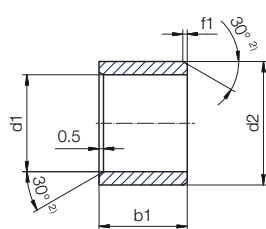
Installation tolerances

iglidur® A350 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for pressfit 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 57

Diameter d1 [mm]	Shaft h9 [mm]	iglidur® A350 F10 [mm]	Housing H7 [mm]
up to 3	0–0.025	+0.006 +0.046	0 +0.010
> 3 to 6	0–0.030	+0.010 +0.058	0 +0.012
> 6 to 10	0–0.036	+0.013 +0.071	0 +0.015
> 10 to 18	0–0.043	+0.016 +0.086	0 +0.018
> 18 to 30	0–0.052	+0.020 +0.104	0 +0.021
> 30 to 50	0–0.062	+0.025 +0.125	0 +0.025
> 50 to 80	0–0.074	+0.030 +0.150	0 +0.030

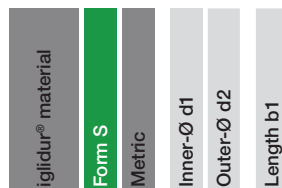
Table 05: Important tolerances for plain bearings according to ISO 3547-1 after pressfit



Order key

Type Dimensions [mm]

A350 S M -0405-04



Dimensions according to ISO 3547-1 and special dimensions

 Imperial dimensions available
 ▶ From page 1400

d1	d1-Tolerance ³⁾	d2	b1	Part No.
h13				
16.0		18.0	20.0	A350SM-1618-20
16.0		18.0	25.0	A350SM-1618-25
18.0	+0.016	20.0	15.0	A350SM-1820-15
18.0	+0.068	20.0	20.0	A350SM-1820-20
18.0		20.0	25.0	A350SM-1820-25
20.0		23.0	10.0	A350SM-2023-10
20.0		23.0	15.0	A350SM-2023-15
20.0		23.0	20.0	A350SM-2023-20
20.0		23.0	25.0	A350SM-2023-25
20.0		23.0	30.0	A350SM-2023-30
22.0		25.0	15.0	A350SM-2225-15
22.0		25.0	20.0	A350SM-2225-20
22.0		25.0	25.0	A350SM-2225-25
22.0		25.0	30.0	A350SM-2225-30
24.0		27.0	15.0	A350SM-2427-15
24.0		27.0	20.0	A350SM-2427-20
24.0	+0.020	27.0	25.0	A350SM-2427-25
24.0	+0.104	27.0	30.0	A350SM-2427-30
24.0		28.0	30.0	A350SM-2428-30
25.0		28.0	15.0	A350SM-2528-15
25.0		28.0	20.0	A350SM-2528-20
25.0		28.0	25.0	A350SM-2528-25
25.0		28.0	30.0	A350SM-2528-30
28.0		32.0	20.0	A350SM-2832-20
28.0		32.0	25.0	A350SM-2832-25
28.0		32.0	30.0	A350SM-2832-30
30.0		34.0	20.0	A350SM-3034-20
30.0		34.0	25.0	A350SM-3034-25

²⁾ Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the d1

 d1 [mm]: Ø 1-6 | Ø 6-12 | Ø 12-30 | Ø > 30
 f [mm]: 0.3 | 0.5 | 0.8 | 1.2

Dimensions [mm]

d1	d1-Tolerance ³⁾	d2	b1	Part No.
h13				
4.0		5.5	4.0	A350SM-0405-04
4.0		5.5	6.0	A350SM-0405-06
5.0	+0.010	7.0	5.0	A350SM-0507-05
5.0	+0.058	7.0	10.0	A350SM-0507-10
6.0		8.0	6.0	A350SM-0608-06
6.0		8.0	8.0	A350SM-0608-08
6.0		8.0	10.0	A350SM-0608-10
8.0		10.0	8.0	A350SM-0810-08
8.0		10.0	10.0	A350SM-0810-10
8.0		10.0	12.0	A350SM-0810-12
10.0	+0.013	12.0	8.0	A350SM-1012-08
10.0	+0.071	12.0	10.0	A350SM-1012-10
10.0		12.0	12.0	A350SM-1012-12
10.0		12.0	15.0	A350SM-1012-15
10.0		12.0	20.0	A350SM-1012-20
12.0		14.0	10.0	A350SM-1214-10
12.0		14.0	12.0	A350SM-1214-12
12.0		14.0	15.0	A350SM-1214-15
12.0		14.0	20.0	A350SM-1214-20
13.0		15.0	10.0	A350SM-1315-10
13.0	+0.016	15.0	20.0	A350SM-1315-20
14.0	+0.068	16.0	15.0	A350SM-1416-15
14.0		16.0	20.0	A350SM-1416-20
14.0		16.0	25.0	A350SM-1416-25
15.0		17.0	15.0	A350SM-1517-15
15.0		17.0	20.0	A350SM-1517-20
15.0		17.0	25.0	A350SM-1517-25
16.0		18.0	15.0	A350SM-1618-15

³⁾ After press-fit. Testing methods ▶ Page 57

Dimensions [mm]

d1	d1-Tolerance ³⁾	d2	b1	Part No.
h13				
30.0	+0.020	34.0	30.0	A350SM-3034-30
30.0	+0.104	34.0	40.0	A350SM-3034-40
32.0		36.0	20.0	A350SM-3236-20
32.0		36.0	30.0	A350SM-3236-30
32.0		36.0	40.0	A350SM-3236-40
35.0		39.0	20.0	A350SM-3539-20
35.0	+0.025	39.0	30.0	A350SM-3539-30
35.0	+0.125	39.0	40.0	A350SM-3539-40
35.0		39.0	50.0	A350SM-3539-50
40.0		44.0	20.0	A350SM-4044-20
40.0		44.0	30.0	A350SM-4044-30

d1	d1-Tolerance ³⁾	d2	b1	Part No.
h13				
40.0		44.0	40.0	A350SM-4044-40
40.0		44.0	50.0	A350SM-4044-50
45.0		50.0	20.0	A350SM-4550-20
45.0		50.0	30.0	A350SM-4550-30
45.0		50.0	40.0	A350SM-4550-40
45.0	+0.025	50.0	50.0	A350SM-4550-50
50.0	+0.125	55.0	20.0	A350SM-5055-20
50.0		55.0	30.0	A350SM-5055-30
50.0		55.0	40.0	A350SM-5055-40
50.0		55.0	50.0	A350SM-5055-50
50.0		55.0	60.0	A350SM-5055-60

³⁾ After press-fit. Testing methods ▶ Page 57

Couldn't find your size?

Do you need another length, other dimensions or tolerances? You need a particular design or alternative for your application? Please call us. iglus® listens to your needs and provides you a solution very quickly.

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