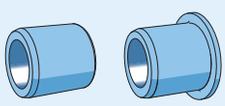
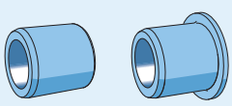
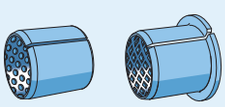
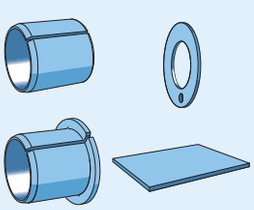
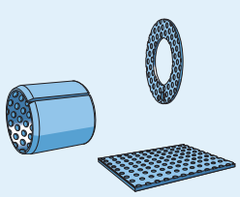
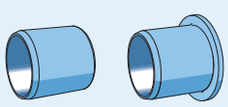
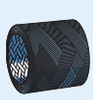
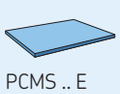
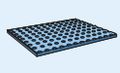
SKF bushings, thrust washers and strips

	 Solid bronze	 Sintered bronze
Self-lubricating performance	not suitable	good
Maintenance-free operation	not suitable	good
Dirty environments	good	suitable
Corrosion-resistant	good	suitable
High temperature	good	not suitable
Heavy load	suitable	not suitable
Shock loads/vibrations	good	suitable
High sliding velocity	not suitable	excellent
Low friction	not suitable	good
Poor shaft surface finish	good	not suitable
Small operating clearance	not suitable	suitable
Insensitive to misalignment	good	suitable
Assortment		
Product series designation	PBM PBMF	PSM PSMF

– product selection guide

 Wrapped bronze	 PTFE composite	 POM composite	 PTFE polyamide	 Filament wound
not suitable	excellent	good	excellent	excellent
suitable	excellent	good	excellent	excellent
excellent	not suitable	suitable	not suitable	good
good	suitable	suitable	excellent	excellent
good	excellent	suitable	suitable	good
suitable	good	excellent	suitable	good
good	suitable	suitable	not suitable	excellent
suitable	good	good	suitable	not suitable
not suitable	excellent	excellent	suitable	excellent
suitable	not suitable	suitable	suitable	suitable
suitable	excellent	good	suitable	not suitable
suitable	not suitable	suitable	suitable	good
 PRM PRMF	 PCM .. E PCMF .. E PCMW .. E PCMS .. E	 PCM .. M PCMW .. M PCMS .. M	 PPM PPMF	 PWM

SKF bushings – technical data

	 **Solid bronze**	 **Sintered bronze**	 **Wrapped bronze**	 **PTFE composite**	 **POM composite**	 **PTFE polyamide**	 **Filament wound**
Temperature range, °C	–40 .. +250	–10 .. +90	–40 .. +150	–200 .. +250	–40 .. +110	–30 .. +110	–50 .. +140
Friction coefficient, μ	0,08 .. 0,15	0,05 .. 0,10	0,08 .. 0,15	0,03 .. 0,25	0,02 .. 0,20	0,06 .. 0,15	0,03 .. 0,08
Permissible load, N/mm^2							
– dynamic	25	10	40	80 (v ≤ 0,02)	120 (v ≤ 0,02)	40	140
– static	45	20	120	250	250	80	200
Permissible sliding velocity, m/s	0,5	0,25 .. 5	1,0	2,0 (p ≤ 1,0)	2,5 (p ≤ 1,0)	1,0	0,5
Shaft tolerance	e7 – e8	f7 – f8	e7 – f8	f7 – h8	h7 – h8	h8 – h9	h8
Housing tolerance	H7	H7	H7	H7	H7	H7	H7
Shaft roughness R_a, μm	0 .. 1,0	0,2 .. 0,8	0,4 .. 0,8	0 .. 0,4	0 .. 0,8	0 .. 0,8	0,2 – 0,4
Shaft hardness, HB	165 – 400	200 – 300	150 – 400	300 – 600	150 – 600	100 – 300	> 490
Assortment and product series designation	 PBM  PBMF	 PSM  PSMF	 PRM  PRMF	 PCM .. E  PCMF .. E  PCMW .. E  PCMS .. E	 PCM .. M  PCMW .. M  PCMS .. M	 PPM  PPMF	 PWM

The sliding velocity can be calculated using

$v = n \times \pi \times d / (60 \times 1\,000)$

where
v = sliding velocity, m/s
n = rotational speed, r/min
d = bore diameter of bushing, mm

The specific bearing load can be calculated using

$p = F / (d \times b)$

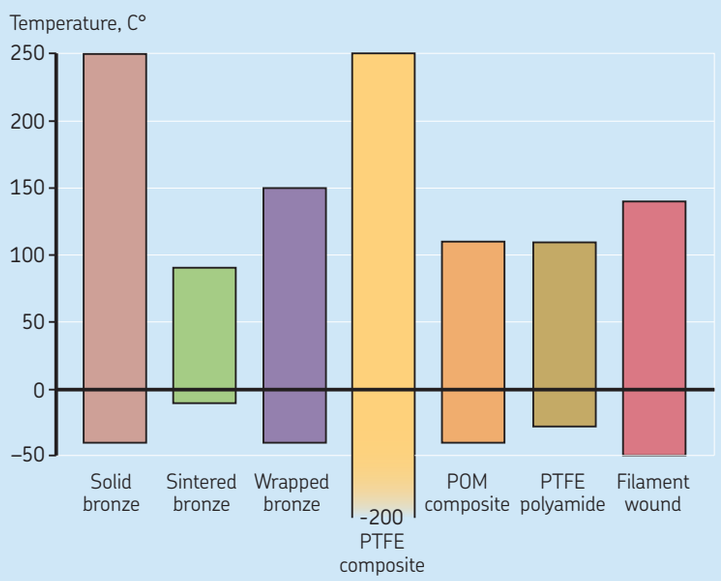
where
p = specific bearing load, N/mm^2
F = bearing load, N
d = bore diameter of bushing, mm
b = width of bushing, mm

Bushing selection

Overview of technical data

The temperature range for SKF solid and wrapped bronze bushings can be extended by using special lubricants.

Temperature range
Ambient temperature range (°C) for different SKF sliding materials under normal operating conditions.

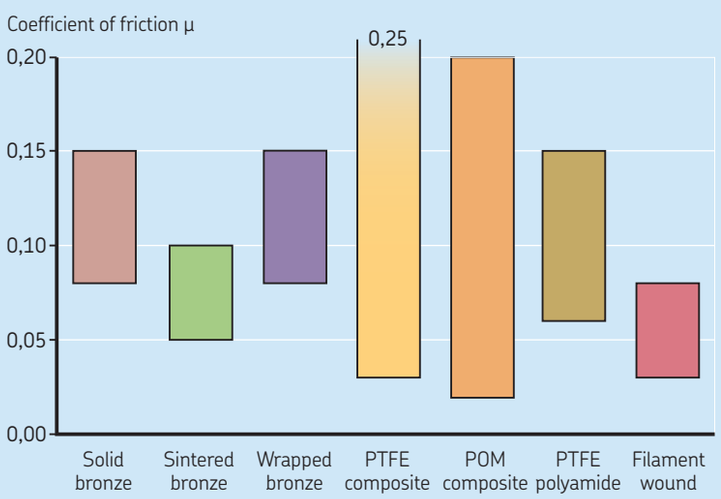


The primary factors that affect the friction of SKF sliding materials against their mating surfaces include load, sliding velocity, surface roughness of the mating surface and lubrication conditions.

Lower coefficients of friction are obtained under heavy specific loads at low sliding velocities (not applicable to SKF sintered bronze).

Both higher and lower friction can occur under extreme conditions.

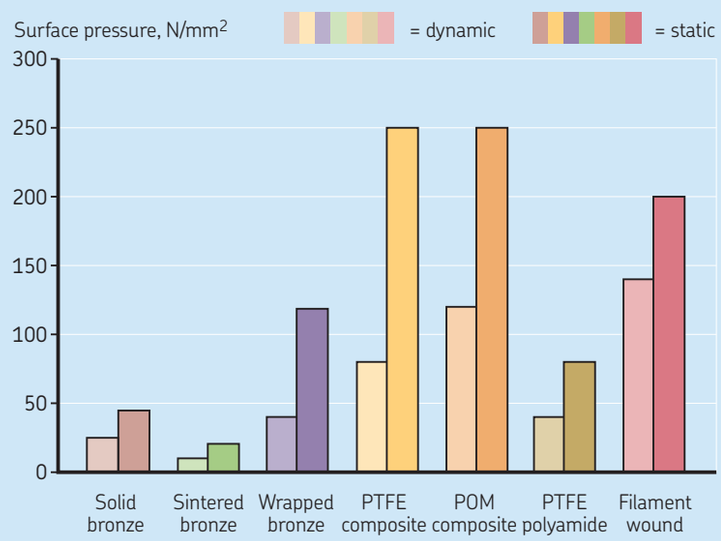
Coefficient of friction
Coefficient of friction (μ) under dry or initially lubricated operating conditions (typical values) for different SKF sliding materials.



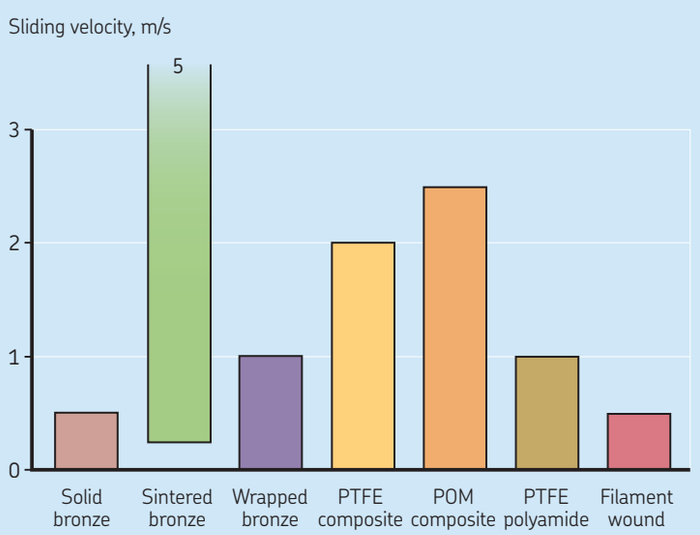
The load carrying capacity of a specific bushing depends on several factors including the type of load, sliding velocity and frequency of oscillation.

All sliding materials supplied by SKF can operate under rotational, oscillating and linear movements. The permissible sliding velocity for a specific application also depends on load, shaft surface and heat dissipation.

Load capacity
Permissible specific bearing load, p (dynamic), N/mm^2, at a sliding velocity less than 0,01 m/s and permissible static load (N/mm^2) at v = 0 m/s for different SKF sliding materials.



Sliding velocity
Permissible continuous sliding velocity (m/s) at a load less than 1 N/mm^2 under dry or initially lubricated operating conditions for different SKF sliding materials.



Larger tolerance grades can be used when the application demands are moderate.

The surface roughness often has a significant influence on service life. However, a surface roughness with a value greater than 0,4 µm may have a negative effect.

The heavier the load, the harder the shaft should be. The higher the risk for embedded contaminants, the more a harder shaft is required.

Shaft recommendations
Recommended ISO tolerances, surface roughness and surface hardness of the shaft for different SKF sliding materials.