

Low-maintenance plain bearing material E50

E50 is the new sliding material of Schaeffler Group Industrial for low-maintenance metal/polymer composite plain bearings. The sliding layer is based on Polyoxymethylene (POM).

Structure

The three-layered material consists of a steel backing, an intermediate layer and a sliding layer, *Figure 1*.

- ① Sliding layer
- ② Intermediate layer
- ③ Steel backing

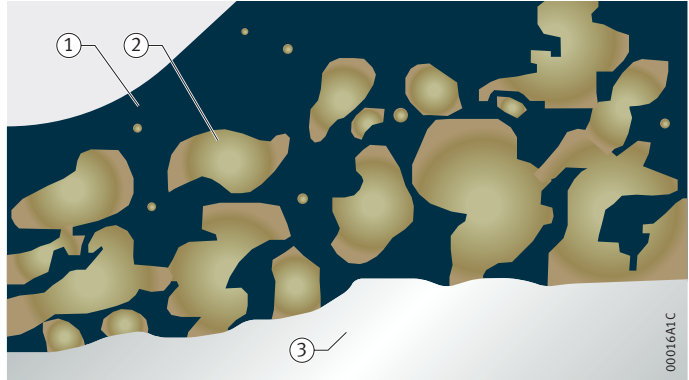


Figure 1
Low-maintenance plain bearing material E50

The steel backing has a sintered porous tin/bronze intermediate layer whose pores are filled with the sliding layer.

Steel backing

Chemical element	Maximum proportion of mass w_{\max} %	Hardness HB
Carbon C	0,08	≈100
Manganese Mn	0,4	
Phosphorus P	0,03	
Sulphur S	0,03	
Iron Fe	Balance	

Sliding and intermediate layer

Chemical element	Proportion of mass w %		Layer thickness mm	
	Intermediate layer	Sliding layer	Intermediate layer	Sliding layer
Polyoxymethylene POM	–	99,6 – 99,8	0,15 – 0,5	0,2 – 0,45
Fillers	max. 0,95	max. 0,4		
Tin Sn	10 – 12	–		
Copper Cu	Balance	–		

Application

The material conforms to the regulations for lead-free plain bearings. It is low-maintenance throughout its life and can be used in the temperature range from -40 °C to $+120\text{ °C}$.

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