

Maintenance-free plain bearing material E420

E420 is the new sliding material of Schaeffler Group Industrial for maintenance-free metal/polymer composite plain bearings. The basis of the dry lubricant is polytetrafluoroethylene (PTFE) with embedded chemically non-reactive additives.

Structure The three-layered material consists of a steel backing, a sliding layer and a running-in layer, *Figure 1*.

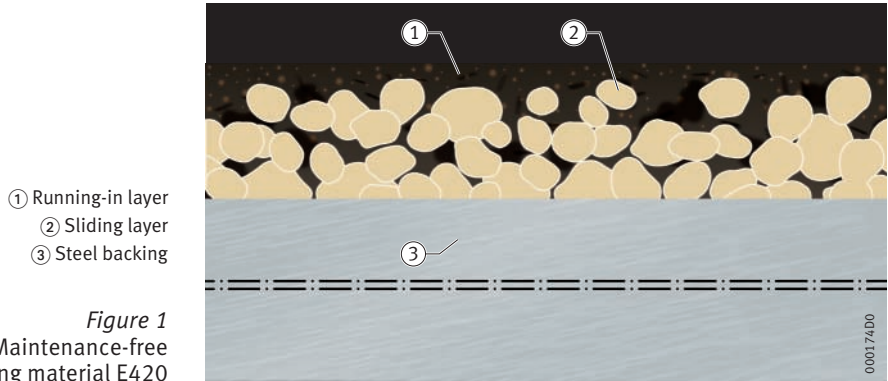


Figure 1
Maintenance-free plain bearing material E420

The steel backing has a sintered porous tin/bronze sliding layer whose pores are filled with the dry lubricant of the running-in 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 running-in layer

Chemical element	Proportion of mass w %		Layer thickness mm	
	Sliding layer	Running-in layer	Sliding layer	Running-in layer
Fillers	max. 0,5	6	0,2 – 0,35	0,01 – 0,04
Molybdenum disulphide MoS_2	–	8		
Polytetrafluoroethylene PTFE	–	86		
Tin Sn	10 – 12	–		
Copper Cu	Balance	–		

Application

The lead-free material conforms to the regulations for lead-free plain bearings. It is maintenance-free throughout its life and can be used in the temperature range from -200 °C to $+280\text{ °C}$.

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