

## Material Data Sheet Cf 53/C55E – 1.1213/1.1203 (chrome plated)

### Linear Bearing Shaft with:

- Good hardening properties
- Excellent Ground Finish
- Excellent Corrosion resistance

Selected for use in High Quality Linear Bearings and Guideway systems. Machine Components and Rollers.

### // Chemical Analysis %

Material	C	Si	Mn	P	S	Al
Cf 53/C55E	0,50	max.	0,40	max.	max.	0,02
	0,57	0,40	0,90	0,03	0,035	0,05

### // Mechanical Properties, untreated

Diameter (mm)	Re (N/mm <sup>2</sup> )	RM (N/mm <sup>2</sup> )	A (%)
bis 17	= > 325	= > 610	= > 6
> 17 - 41	= > 325	= > 610	= > 6
> 41 - 80	= > 325	= > 610	= > 6

**Density** 7,85 kg/dm<sup>3</sup>

**Roundness:** ½ Diameter tolerance

**Surface:** Polished, surface finish Ra < = 0,30 µm

**Straightness:** < Ø 10 mm =  
< 0,30 mm/m (TIR max. 0,60 mm/m)  
= > Ø 10 mm - < Ø 20 mm =  
0,20 mm/m (TIR max. 0,40 mm/m)  
= > Ø 20 mm - Ø 110 mm =  
0,10 mm/m (TIR max. 0,20 mm/m)

**Induction hardened:** Surface Hardness 60 - 66 HRC

Diameter (mm)	Depth of Hardness Rht 550 HV1 DIN EN 10328
6 - 10	0,50 mm + 0,50 mm
> 10 - 18	0,80 mm + 0,50 mm
> 18 - 30	1,20 mm + 0,80 mm
> 31 - 50	1,50 mm + 1,00 mm
> 50 - 80	2,20 mm + 1,00 mm

**Chrome Thickness:** 10 ± 5 µm

**Chrome Hardness:** = > 800 HV

The production process for Chromed Linear Bearing Shafts Ø 6 - 30 mm requires us to have tapped holes in each bar end.

Diameter (mm)	Axial Hole
6 - 8	M 4 x 10 mm
> 8 - 18	M 6 x 15 mm
> 18 - 30	M 10 x 15 mm

### // Standard Diameters

Standard Ø (mm)	Tolerance (µm)		* Production Length (mm)
	h 6	h 7	
6	0 - 8	0 - 12	5.800
8	0 - 9	0 - 15	
10			
12	0 - 11	0 - 18	6.100
14			
16			
20			
25	0 - 13	0 - 21	7.000
30			
40			
50	0 - 16	0 - 25	7.600
60			
80			

\* When ordering stock, as opposed to fixed length bars, please be aware that up to 10% of the delivery may be out of tolerance. Stock bars do not have their ends cut which means that up to 250 mm of each end are not chrome plated and may not be within geometrical tolerance. Length tolerance ± 200 mm.

### Specials:

Other hardness depths and tolerances are available. Please contact us for detailed information, dimensions and minimum order quantities.

**ZOLLERN GmbH & Co. KG**  
Mechanical engineering elements

Sandweg 60  
88326 Aulendorf  
Germany  
T +49 7525 948-0  
F +49 7525 948-100  
zmb@zollern.com  
www.zollern.com

