

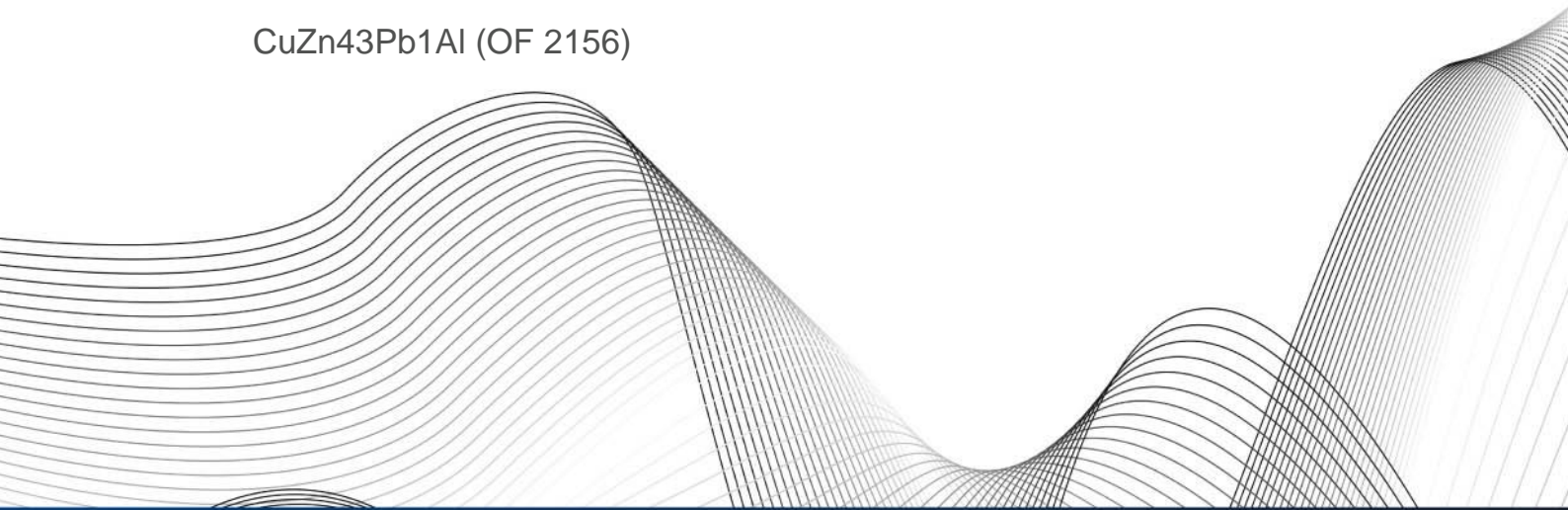


OTTO FUCHS  
Dülken GmbH & Co. KG



Copper and Copper Alloys

CuZn43Pb1Al (OF 2156)





	Cu	Zn	Pb	Sn	Fe	Mn	Ni	Al	Si	As	Co	Cr	Others
min.	55.0	Rem.	0.8	-	-	-	-	0.05	-	-	-	-	-
max.	57.0	-	1.6	0.3	0.3	-	0.3	0.5	-	-	-	-	0.2

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## Applications

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CuZn43Pb1Al is highly suitable for hot formed parts. OF 2156 is a very good alloy for use in profiles which provide complex shapes or very thin walls. Due to the alloying of Al CuZn43Pb1Al has a golden yellow colouring.

Examples of application:

Extruded profiles with thin walls  
Profiles for use in architecture  
Hand rails  
Stair rails  
Profiles for hinge-joints  
Rails with Venetian wash (terrazzo)

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## Physical properties

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At room temperature

Density	8.3	g/cm <sup>3</sup>
Electrical conductivity	16.4	MS/m
	28	% I.A.C.S
Heat conductivity	126	W/(m*K)
Heat capacity	377	J/(kg*K)
Coefficient of thermal expansion	21.6	10 <sup>-6</sup> /K
Young's modulus	84	GPa
Melting range	870-885	°C

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## Microstructures

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The microstructures of CuZn43Pb1Al consist of a heterogeneous mixture of  $\alpha$ - and  $\beta$ -phase. Pb is insoluble, it forms fine precipitations in the brass matrix.

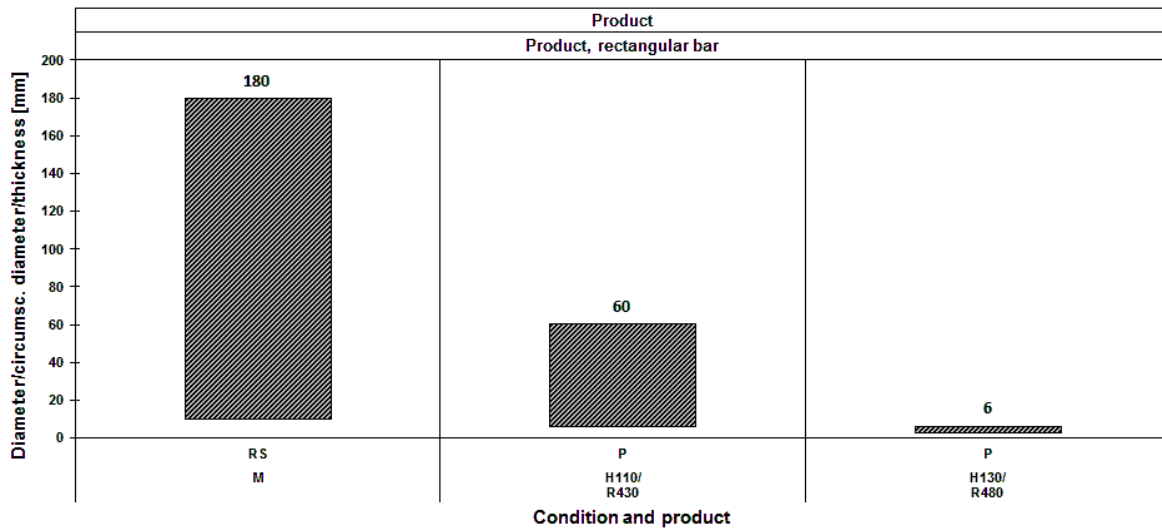
## Consignment and measurements

### Strength conditions

Product	Condition	Yield strength $R_{p0.2}$ [MPa]	Tensile strength $R_m$ [MPa]	Elongation at break A [%]	Brinell- Hardness HB 2.5/62.5
Profile, rectangular bar	M	**	**	**	**
Profile, rectangular bar	R430	(~200)	≥430	(~15)	/
	R480	(~330)	≥480	(~5)	/
	H110	/	/	/	≥110
	H130	/	/	/	≥130

- \*\* Condition M = without specified mechanical properties – as manufactured  
 ( ) The numbers are not requirements of the standard - they are for information only  
 / No requirements in standard or not applicable

### Specified dimensions for bars



- RS Rectangular bar  
 P Profiles

Profiles and rectangular bars can be delivered up to 180 mm in extruded condition.

### Other consignments

Rods in other strength and hardness conditions and dimensions, and tubes are available on request.



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**Processing**

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<b>Shaping</b>	
Machinability (CuZn39Pb3=100%)	good (75)
Cold working	poor
Hot working	very good
Hot working temperature	625-725°C
<b>Connecting</b>	
Resistance welding	average
Shielded welding	poor
Brazing	average
Soldering	poor
<b>Surface treatment</b>	
Mechanical polishing	very good
Electrolytic polishing	poor
Galvanisation	very good
Tin coating	poor to good

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**Heat treatment**

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Soft annealing	425-550°C
Stress relieving	200-300°C

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**Special notes and remarks**

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There is a risk of stress corrosion cracking (SCC) in case of concurrent presence of mechanical stress and corrosive media (in particular ammoniac atmosphere).



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## Copper & Copper Alloys CuZn43Pb1Al (OF 2156)

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