

## Wrought copper-aluminium alloy **AB 8** alloy 1720

**AB 8** is a construction material with medium strength and low permeability. In addition to good corrosion resistance to seawater, this binary alloy is also resistant to sulphuric acid and acetic acid. AB 8 is not magnetisable and is supplied iron-free with lowest permeability on request.

ZOLLERN brand	AB 8
EN designation	EN standard, none
EN material no:	EN standard, none

### // National designations

DIN 17655	CuAl8
DIN 17655	2.0920

### // Composition (weight by per cent in %)

Cu	Al	Fe	Ni	Mn
Rest	7.0 – 9.0	max. 0.5	max. 0.8	max. 0.8
Pb	Si	Zn	Other	
max. 0.02	max. 0.2	max. 0.50	max. 0.3	

### // Strength properties at room temperature

(minimum values)					
[ 1 ] DIN 17678 [ 2 ] DIN 17672 min. 250 Kg	R <sub>p0.2</sub> N/mm <sup>2</sup>	R <sub>m</sub> N/mm <sup>2</sup>	A <sub>5</sub> %	HB	
[ 1 ] Forgings up to 80 mm thickness	145	440	18	100	
[ 1 ] Forgings over 80 mm thickness	115	370	33	90	
[ 2 ] Rods, drawn "soft" up to 35 mm Ø or SW	120	370	35	≈90	
[ 2 ] Rods, drawn "hard" up to 35 mm Ø or SW	270	490	15	≈130	

### // Physical properties

Density at 20 °C	7.7 kg/dm <sup>3</sup>
Melting temperature/range	1037 – 1045 °C
Coefficient of linear expansion	
from 20° to 100°C	16 x 10 <sup>-6</sup> °C <sup>-1</sup>
from 20° to 300°C	17 x 10 <sup>-6</sup> °C <sup>-1</sup>
Specific heat capacity at 20°C	0.418 J/g x °C
Thermal conductivity	0.67 W/cm x °C
Electr. conductivity at 20°C	7 - 9 MS/m 12 - 16 % IACS
Electr. resistance at 20°C	0.11 - 0.13 Ω mm <sup>2</sup> /m
Permeability	< 1.01
Young's modulus	121 KN/mm <sup>2</sup>
<b>// Dynamic strength values at room temperature (reference values)</b>	
Rotational bending fatigue strength R <sub>bw</sub> at 50 x10 <sup>6</sup> load cycles	181 N/mm <sup>2</sup>

## Wrought copper-aluminium alloy **AB 8** alloy 1720

**AB 8** is a construction material with medium strength and low permeability. In addition to good corrosion resistance to seawater, this binary alloy is also resistant to sulphuric acid and acetic acid. AB 8 is not magnetisable and is supplied iron-free with lowest permeability on request.

### Areas of application

**AB 8** is used for parts in the chemical and food processing industry due to the good corrosion resistance. The material is also used in

- electrical engineering
- in shipbuilding
- in broadcasting; for amagnetic parts
- or for equipment accessories in the chemical industry, e.g. in pickling plants

### Machinability

Carbide tools are needed for turning and milling and sharp drill bits are needed for drilling and thread cutting. This results in machinability that is better than that of austenitic steel. Shorter rolling and flowing chips are formed.

### Relaxation

**annealing** approx. 300 - 350°C

**Soft soldering** not recommendable

**Brazing** poor, fluoride and chloride containing and chloride-containing fluxes necessary (type F - SH 1) Silver solders are advantageous, e.g. L-Ag44 or L-Ag55Sn

**Welding** good, both TIG, MIG and also electrode manual welding is possible. Suitable filler material CuAl8 = CF309G or S-CuAl8Ni2

**Galvanisability** possible, good cleaning and pretreatment necessary

