



## Cu Zn 33

## BRASS

### CHEMICAL COMPOSITION :

Copper	67%
Zinc	balance

### ALLOY DENOMINATIONS :

MATERIAL N° EN :	CW506 L
WN/MATERIAL N° DIN :	2.0280
ROBERT LAMINAGE :	333
EN :	CU ZN33
DIN :	CU ZN33
AFNOR :	CU ZN33
UNS* :	C 26800

\*Unified Numbering System (USA)

### PHYSICAL PROPERTIES :

Density 20° C	8.50	Kg/dm <sup>3</sup>
Melting point	900-920	°C
Modulus of elasticity, longitudinal	112	GPa
Thermal Conductivity	120	W/M . K
Electrical Conductivity	≥ 11.60	M/Ω mm <sup>2</sup>
Electrical resistivity	≤ 0.0862	Ω mm <sup>2</sup> /M
Coefficient of linear expansion from 20 up to 300°C	19.90 x 10 <sup>-6</sup>	K <sup>-1</sup>
IACS (International Annealed Copper Standard)	≥ 20	%

### WORKABILITY :

Coldworking	Very good
Hotworking	Good (720-820 °C)
Machining	Medium
Soldering, brazing	Very good
Tin soldering	Very good
Polishing	Very good
Annealing temperature	450-650 °C
Stress relieving heat treatment temperature	200-300 °C

### MAIN APPLICATIONS :

Dials,  
Coining, bending, chemical engraving,  
pressing, cutting, stamping  
Presspart

### CONDITIONING :

- In coils
- Cut to length, from 0.5 up to 3 m

### AVAILABLE SIZES :

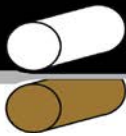
Widths	from 2 up to 350mm
Thickness	from 0.01up to 2.5mm

### TOLERANCES :

Depending on product

### QUALITY OF EDGES :

Slit edges



**MECHANICAL PROPERTIES :**

**Cu Zn 33**

**EN NORM**

TEMPER	THICKNESS		Rm (MPa)		Rp 0.2 (Mpa)	ELONGATION		Vickers HARDNESS		GRAIN SIZE
			min	max		0.10 up to 2.5 mm A50 % min	above 2.5 mm A100 % min	min	max	
R280 H055	0.2	5	280	310	(max 170)	40	50	-	-	-
			-	-	-	-	-	-	55	90
G010	0.2	1	(~410)		(~210)	(40)	-	-	120	max 0.015
G020	0.2	2	(~360)		(~150)	(40)	-	-	95	0.015-0.030
G030			(~340)		(~130)	(40)	-	-	90	0.020-0.040
G050			(~330)		(~110)	(40)	-	-	80	0.035-0.070
R350 H095	0.2	5	350	430	(min 170)	23	31	-	-	-
			-	-	-	-	-	-	95	125
R420 H125	0.2	5	420	500	(min 300)	6	13	-	-	-
			-	-	-	-	-	-	125	155
R500 H155	0.2	2	500	-	(min 450)	-	-	-	-	-
			-	-	-	-	-	-	155	-

(For reference only)

**DIN NORM 17670**

TEMPER	THICKNESS	Rm (MPa)		Rp 0.2 (Mpa)	ELONGATION		Vickers HARDNESS	
		min	max		0.10 up to 2.5 mm A50 % min	above 2.5 mm A100 % min	min	max
F28 H55	≥ 0.2	280	360	max 170	50	45	-	-
	≤ 5	-	-	-	-	-	55	90
F36 H90	≥ 0.2	360	430	min 200	31	28	-	-
	≤ 5	-	-	-	-	-	90	130
F43 H130	≥ 0.2	430	530	min 360	13	10	-	-
	≤ 5	-	-	-	-	-	130	165
F53 H165	≥ 0.2	530	-	min 480	-	-	-	-
	≤ 2	-	-	-	-	-	165	-

**AFNOR NORM NF A51-101**

TEMPER	Vickers HARDNESS		Rm (MPa)	
	min	max	min	max
H11	85	122	330	400
H12	108	140	380	450
H13	130	155	430	500
H14	140	160	470	540
H15	160	178	540	610
H16	174	192	600	670
H17	180	196	630	690