

High-carbon steel: Bainitic hardened

Chemical Composition

Classification of symbols	Numerical classification	European Standard (EN)	Chemical Composition							
			C	Si	Mn	Max. P	Max. S	Cr	V	Ni
C60S	1.1211	EN 10132-4	0.57 - 0.65	0.15 - 0.35	0.60 - 0.90	0.025	0.025	max. 0.40	-	max. 0.40
C67S	1.1231	EN 10132-4	0.65 - 0.73	0.15 - 0.35	0.60 - 0.90	0.025	0.025	max. 0.40	-	max. 0.40
C75S	1.1248	EN 10132-4	0.70 - 0.80	0.15 - 0.35	0.60 - 0.90	0.025	0.025	max. 0.40	-	max. 0.40

Equivalents

Classification of symbols	Numerical classification	European Standard (EN)	Approximate international equivalents						
			US (AISI)		Japan (JIS)		China (GB)		
C60S	1.1211	EN 10132-4							
C67S	1.1231	EN 10132-4	1065	A505/506	SUP 10	G4802	70	GB/T 1222	
C75S	1.1248	EN 10132-4	1074	A682/684	-	-	-	-	

Mechanical properties

Classification of symbols	Numerical classification	European Standard (EN)
C60S	1.1211	EN 10132
C67S	1.1231	EN 10132
C75S	1.1248	EN 10132

- The mechanical properties are not specified in any standard on the date of publication of this information.
- The mechanical properties must be agreed when placing the order.
- The typical values fall within the range of 900-1400N/mm².
- The hardness/tensile strength specification must fall within a range of 150 N/mm² or 50 HV, unless stated otherwise in the commercial agreement.

For information purposes, the table below shows the difference between **austempering** and **martensitic hardening**.

Difference between austempering and martensitic hardening

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Finishes

EN 10132-4:2000

- The requirements regarding roughness can be agreed when requesting the quote or placing the order.

Tolerances

THICKNESS TOLERANCES

A) Specified thickness tolerances for cold rolled strip and strip obtained strapping wide precision rolling w .

According to the EN 10140:2006 Standard.

Nominal Thickness t		Thickness tolerances according to EN 10140 for nominal widths w of					
		<125			≥ 125 and <600		
>	≤	A normal	B fine	C precision	A normal	B fine	C precision
-	0.10	± 0.008	± 0.006	± 0.004	± 0.010	± 0.008	± 0.005
0.10	0.15	±0.010	± 0.008	± 0.005	± 0.015	± 0.012	± 0.010
0.15	0.25	±0.015	± 0.012	± 0.008	± 0.020	± 0.015	± 0.010
0.25	0.40	± 0.020	± 0.015	± 0.010	± 0.025	± 0.020	± 0.012
0.40	0.60	± 0.025	± 0.020	± 0.012	± 0.030	± 0.025	± 0.015
0.60	1.00	± 0.030	± 0.025	± 0.015	± 0.035	± 0.030	± 0.020
1.00	1.50	± 0.035	± 0.030	± 0.020	± 0.040	± 0.035	± 0.025
1.50	2.50	± 0.045	± 0.035	± 0.025	± 0.050	± 0.040	± 0.030
2.50	4.00	± 0.050	± 0.040	± 0.030	± 0.060	± 0.050	± 0.035
4.00	6.00	± 0.060	± 0.050	± 0.035	± 0.070	± 0.055	± 0.040

Sizes in mm.

WIDTH TOLERANCES

Width tolerances for strips with sheared edges		Standard slitting tolerances for Metalle Schmidt GmbH ¹⁾				Width tolerances according to the EN 10140 Standard for nominal widths of:					
Nominal Thickness <i>t</i>		3-15	15-50	50-150	>150	<125		≥ 125 and <250		≥250 and <600	
≥	<					A	B	A	B	A	B
0.1	0.4	± 0.075 ²⁾	± 0.075 ²⁾	± 0.075 ²⁾	± 0,10 ²⁾	± 0.15	± 0.10	± 0.20	± 0.13	± 0.25	± 0.18
0.4	0.7	± 0,085	± 0,09	± 0,10	± 0,12	± 0.15	± 0.10	± 0.20	± 0.13	± 0.25	± 0.18
0.7	1.0	± 0.085 ³⁾	± 0.09 ³⁾	± 0.10 ³⁾	± 0.12 ³⁾	± 0.20	± 0.13	± 0.25	± 0.18	± 0.30	± 0.20
1.0	1.5	± 0.10 ⁴⁾	± 0.10 ⁴⁾	± 0.10 ⁴⁾	± 0.15 ⁴⁾	± 0.20	± 0.13	± 0.25	± 0.18	± 0.30	± 0.20
1.5	2.5	on request	± 0.13 ⁵⁾	± 0.15 ⁵⁾	± 0.16 ⁵⁾	± 0.25	± 0.18	± 0.30	± 0.20	± 0.35	± 0.20
2.5	2.6	on request	on request	± 0.16	± 0.175	± 0.25	± 0.18	± 0.30	± 0.20	± 0.35	± 0.25
2.6	4.1	on request	on request	± 0.16	± 0.175	± 0.30	± 0.20	± 0.35	± 0.25	± 0.40	± 0.30
4.1	6.1	on request	on request	± 0.16	± 0.175	± 0.35	± 0.25	± 0.40	± 0.30	± 0.45	± 0.35

1) Other, closer dimensional tolerances are possible under a commercial agreement

2) Including the value *t*= 0.4

3) Including the value *t*= 1

4) Including the value *t*= 1.5

5) Including the value *t*= 2.5

LENGTH TOLERANCES

Length tolerances	Closer tolerances are possible under a commercial agreement	Positive tolerance in relation to the nominal length, according to the EN 10140 Standard for the	
L ≤ 1000	+ 2	+ 10	+ 6

* The data contained in this catalogue are for information purposes only and are not under any circumstances, contractual supply conditions. Errors and omissions excepted.

Length tolerances	Closer tolerances are possible under a commercial agreement	Positive tolerance in relation to the nominal length, according to the EN 10140 Standard for the	
1000 < L ≤ 2500	+0,002L	+ 0.01 L	+ 6
L > 2500	+0,002L	+ 0.01 L	+ 0.003 L

Sizes in mm.

EDGE CAMBER TOLERANCES

Nominal width (W)	Closer edge curve tolerances possible under a commercial agreement		Edge curve tolerances according to the EN 10140 Standard	
	Maximum deviation 1000 mm			
	Thickness t		Class A (Normal) (maximum deviation)	Class B (FS) (Reduced) (maximum deviation)
	t ≤ 1.20 mm	t > 1.20 mm		
3 ≤ W < 6	2.50	4.00	-	-
6 < W ≤ 10	2.00	3.00	-	-
10 < W ≤ 20	1.00	1.50	5.00	2.00
20 < W < 25	1.00	1.50	5.00	2.00
25 ≤ W < 40	1.00	1.50	3.50	1.50
40 ≤ W < 125	1.00	1.50	2.50	1.25
125 ≤ W ≤ 350	1.00	1.50	2.00	1.00
350 < W < 600	-	-	2.00	1.00

Sizes in mm.

The absolute value of the tolerance can be divided within that range.

RIPPLE - LONGITUDINAL FLATNESS

The flatness tolerance of the strips in cut lengths in the direction of rolling must be a maximum of 10 mm over 1000 mm. Any other flatness requirement must be agreed when placing the order.