

Spring Steel Strip 1.4310 - 301

Material Data Sheet

Material Code:	X10CrNi18-8 (previous: X12CrNi17-7)
Material Number:	1.4310 (AISI 301)
Quality According To:	EN 10151
Tolerances According To:	EN ISO 9445

Chemical Analysis^{a)}

(in %) according to EN 10151

Element	% Present
C	0.05 to 0.15
Si	2.00
Mn	2.00
P	0.045
S	0.015
N	0.10
Cr	16.0 to 19.0
Mo	0.80
Ni	6.0 to 9.5

^{a)} Maximum values unless otherwise stated

Surface 2H (strain-hardened, blank)

Surface Roughness Ra < 0.3 µm (at Rm > 1150 N/mm²)**Mechanical Properties**

According to EN 10151

Edging possibilities (r/t) for thickness in mm at an angle of 90°

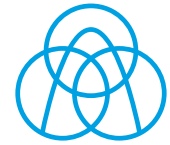
Thickness	Rod Across / Along The Grain							
	> 0.05 to 0.25mm		> 0.25 to 0.50mm		> 0.50 to 0.75mm		> 0.75 to 1.00mm	
Tensile Strength	Across	Along	Across	Along	Across	Along	Across	Along
1150 - 1300	≤ 0.5	≤ 2.5	≤ 1.0	≤ 3.0	≤ 2.0	≤ 4.0	≤ 2.5	≤ 5.0
1300 - 1500	≤ 1.5	≤ 3.0	≤ 2.0	≤ 4.0	≤ 2.5	≤ 5.0	≤ 3.0	≤ 7.0
1500 - 1700	≤ 2.0	≤ 4.5	≤ 2.5	≤ 5.0	≤ 3.0	≤ 7.0	≤ 3.5	≤ 9.5
1700 - 1900	≤ 2.5	≤ 9.0	≤ 3.0	≤ 9.5	≤ 3.5	≤ 11.0	-	-

r = radius of the rod

t = thickness of the material

Minimum Elongation A80% at different tensile strengths

Tensile Strength	A80%
+C1150	15
+C1300	10
+C1500	5
+C1700	2
+C1900	1



E-modulus in GPa (Gigapascal) at room temperature

Tensile Strength (in Mega Pascal)	Delivery Condition	
	Cold Rolled	Cold Rolled and Heat Treated
approx. 1800	185	195
approx. 1300	179	189

Samples measured along the grain. Interim values can be mediated.
1 Pascal = 1 N/m²

Dimensional Tolerances

According to ISO 9445:2006-05

Thickness

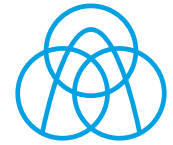
Thickness (t)	Tolerance of thickness (t) at a width (w) of:								
	w < 125			125 w < 250			250 w < 600		
	Normal	Fine	Precision	Normal	Fine	Precision	Normal	Fine	Precision
0.05 ≤ t < 0.10	± 0.10*t	± 0.06*t	± 0.04*t	± 0.12*t	± 0.10*t	± 0.08*t	± 0.15*t	± 0.10*t	± 0.08*t
0.10 ≤ t < 0.15	± 0.10	± 0.008	± 0.006	± 0.015	± 0.012	± 0.008	± 0.020	± 0.015	± 0.010
0.15 ≤ t < 0.20	± 0.015	± 0.010	± 0.008	± 0.020	± 0.012	± 0.010	± 0.025	± 0.015	± 0.015
0.20 ≤ t < 0.25	± 0.015	± 0.012	± 0.008	± 0.020	± 0.015	± 0.010	± 0.025	± 0.020	± 0.012
0.25 ≤ t < 0.30	± 0.017	± 0.012	± 0.009	± 0.025	± 0.015	± 0.012	± 0.030	± 0.020	± 0.015
0.30 ≤ t < 0.40	± 0.020	± 0.015	± 0.010	± 0.025	± 0.020	± 0.012	± 0.030	± 0.025	± 0.015
0.40 ≤ t < 0.50	± 0.025	± 0.020	± 0.012	± 0.030	± 0.020	± 0.015	± 0.035	± 0.025	± 0.018
0.50 ≤ t < 0.60	± 0.030	± 0.020	± 0.014	± 0.030	± 0.025	± 0.015	± 0.040	± 0.030	± 0.020
0.60 ≤ t < 0.80	± 0.030	± 0.025	± 0.015	± 0.035	± 0.030	± 0.018	± 0.040	± 0.035	± 0.025
0.80 ≤ t < 1.00	± 0.030	± 0.025	± 0.018	± 0.040	± 0.030	± 0.020	± 0.050	± 0.035	± 0.025
1.00 ≤ t < 1.20	± 0.035	± 0.030	± 0.020	± 0.045	± 0.035	± 0.025	± 0.050	± 0.040	± 0.030
1.20 ≤ t < 1.50	± 0.040	± 0.030	± 0.020	± 0.050	± 0.035	± 0.025	± 0.060	± 0.045	± 0.030
1.50 ≤ t < 2.00	± 0.050	± 0.035	± 0.025	± 0.060	± 0.040	± 0.030	± 0.070	± 0.050	± 0.035
2.00 ≤ t < 2.50	± 0.050	± 0.035	± 0.025	± 0.070	± 0.045	± 0.030	± 0.080	± 0.060	± 0.040
2.50 ≤ t < 3.00	± 0.060	± 0.045	± 0.030	± 0.070	± 0.050	± 0.035	± 0.090	± 0.070	± 0.045

All dimensions in mm.
Usually strips are produced at normal or fine tolerance. Precision tolerance is available on demand.

Width

Thickness (t)	Width (w)											
	w ≤ 40			40 < w ≤ 125			125 < w < 250			250 < w < 600		
	Normal	Fine	Precision	Normal	Fine	Precision	Normal	Fine	Precision	Normal	Fine	Precision
t < 0.25	+ 0.17	+ 0.13	+ 0.10	+ 0.20	+ 0.15	+ 0.12	+ 0.25	+ 0.20	+ 0.15	+ 0.50	+ 0.50	+ 0.40
0.25 ≤ t < 0.50	+ 0.20	+ 0.15	+ 0.12	+ 0.25	+ 0.20	+ 0.15	+ 0.30	+ 0.22	+ 0.17	+ 0.60	+ 0.50	+ 0.40
0.50 ≤ t < 1.00	+ 0.25	+ 0.22	+ 0.15	+ 0.25	+ 0.22	+ 0.17	+ 0.40	+ 0.25	+ 0.20	+ 0.70	+ 0.60	+ 0.50
1.00 ≤ t < 1.50	+ 0.25	+ 0.22	+ 0.15	+ 0.30	+ 0.025	+ 0.17	+ 0.50	+ 0.30	+ 0.22	+ 1.0	+ 0.70	+ 0.60
1.50 ≤ t < 2.50	-	-	-	+ 0.40	+ 0.25	+ 0.20	+ 0.60	+ 0.40	+ 0.25	+ 1.0	+ 0.80	+ 0.60
2.50 ≤ t < 3.00	-	-	-	+ 0.50	+ 0.30	+ 0.25	+ 0.60	+ 0.40	+ 0.25	+ 1.2	+ 1.0	+ 0.80

All dimensions in mm and with a lower barrier of -0mm.
The range of tolerance can be shifted upon agreement. Usually strips are produced at normal or fine tolerance. Precision tolerance is available on demand.



Length

Length (L)	Tolerance	
	Normal	Special
L ≤ 2000	+ 3	+ 1.5
2000 ≤ L ≤ 4000	+5	+2

All dimensions in mm and with a lower barrier of -0mm.

Editor

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Important Note

Information given in this data sheet about the condition or usability of materials respectively products are no warranty for their properties, but act as a description.

The information, we give on for advice, comply to the experiences of the manufacturer as well as our own. We cannot give warranty for the results of processing and application of the products.