




Cold Rolled Steel

Delivery range in mm	Coils 	Slit strips 	Cut-to-length sheets 
Thickness	0,4 - 3	0,4 - 3	0,4 - 3
Width	400 - 1650	30 - 1650	200 - 1650
Length	N/A	N/A	220 - 6000

Tolerances according to: EN 10131. Finer tolerances and special edge formation available by arrangement..






Mild grades – Cold-rolled flat products of mild steels for cold forming EN 10130 : 2007

Chemical composition (melt analysis)						
Steel grade/type		C max. %	P max. %	S max. %	Mn max. %	Ti max. %
Code	Material no.					
DC01	1.0330	0.12	0.045	0.045	0.60	–
DC03	1.0347	0.10	0.035	0.035	0.45	–
DC04	1.0338	0.08	0.030	0.030	0.40	–
DC05	1.0312	0.06	0.025	0.025	0.35	–
DC06	1.0873	0.02	0.020	0.020	0.25	0.3
DC07	1.0898	0.01	0.020	0.020	0.20	0.2

Mechanical properties (testing in transverse direction)						
Steel grade/type		$R_e^{1)}$	R_m	$A_{80}^{2)}$	$r_{90}^{3)4)}$	$n_{90}^{3)}$
Code	Material no.	N/mm ²	N/mm ²	min. %	min.	min.
DC01	1.0330	-/280	270 – 410	28	–	–
DC03	1.0347	-/240	270 – 370	34	1.3	–
DC04	1.0338	-/210	270 – 350	38	1.6	0.180
DC05	1.0312	-/180	270 – 330	40	1.9	0.200
DC06	1.0873	-/170	270 – 330	41	2.1	0.220
DC07	1.0898	-/150	250 – 310	44	2.5	0.230

1) For products with no clear yield point, the values for the 0.2 % elongation limit ($R_{p0.2}$), are taken as those for the yield point. For other products, those for the lower yield point (R_{eL}) apply. For thicknesses of ≤ 0.70 mm, but > 0.50 mm, a 20 MPa higher maximum yield point value is permissible. For thicknesses ≤ 0.50 mm, a higher maximum yield point value of 40 MPa is permissible.
2) For thicknesses of ≤ 0.70 mm, but > 0.50 mm, the minimum values for fracture elongation are reduced by 2 units, for thicknesses of ≤ 0.50 mm by 4 units.
3) The r_{90} - and n_{90} -values only apply for product thicknesses of > 0.50 mm.
4) For thickness > 2 mm, the r_{90} -value is reduced by 0.2.

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Enamelling grades – Cold-rolled flat products of soft steels for cold forming EN 10209 : 2013

Chemical composition (melt analysis)						
Steel grade/type		C	Ti	Mn	P	S
Code	Material no.					
DC01EK	1.0390	0.08	–	0.60	0.045	0.050
DC04EK	1.0392	0.08	–	0.50	0.030	0.050
DC05EK	1.0386	0.08	–	0.50	0.025	0.050
DC06EK	1.0869	0.02	0.30	0.50	0.020	0.050
DC03ED	1.0399	⁵⁾	–	0.40	0.035	0.050
DC04ED	1.0394	⁵⁾	–	0.40	0.030	0.050
DC06ED	1.0872	0.02	0.30	0.35	0.020	0.050

Mechanical properties (lat.)					
Steel grade/type		$R_e^{1)}$	R_m	$A_{80}^{2)}$	$r_{90}^{3)4)}$
Code	Material no.	N/mm ² ¹⁾	N/mm ²	min.	min.
DC01EK	1.0390	270	270 – 390	30	–
DC04EK	1.0392	220 ⁶⁾	270 – 350	36	–
DC05EK	1.0386	220	270 – 350	36	1.5
DC06EK	1.0869	190	270 – 350	38	1.6
DC03ED	1.0399	240	270 – 370	34	–
DC04ED	1.0394	220 ⁴⁾	250 – 350	38	–
DC06ED	1.0872	190	250 – 350	38	1.6




1) If the yield point is not pronounced, the values apply for the 0.2 % elongation limit ($R_{p0.2}$), if pronounced, the values apply to the lower yield point (R_{eL}) apply. For thicknesses of ≤ 0.70 mm, but > 0.50 mm, a minimum value for fracture elongation of 2 units lower is permissible, and of 4 units lower for thicknesses ≤ 0.50 mm.
2) For thicknesses of ≤ 0.70 mm, but > 0.50 mm, a minimum value for fracture elongation of 2 units lower is permissible, and of 4 units lower for thicknesses ≤ 0.50 mm.
3) The r -values only apply for product thicknesses > 0.50 mm. For thicknesses > 2 mm, the r -value is reduced by 0.2.
4) For thicknesses > 0.50 mm, the yield point may only reach a maximum of 225 N/mm².
5) The steel grades DC03ED and DC04ED are usually decarburized in the solid phase. After decarburization, analysis must only show a maximum carbon content of 0.004 %.
6) If specified by the customer, steel grade DC04EK can be supplied in thicknesses of 0.7 mm to 1.5 mm with $R_e < 210$ N/mm² and $A_{80} \geq 38$ %. It then remains for the manufacturer to select the surface roughness values for a dull matt finish.

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Microalloyed grades – Cold-rolled flat products with high yield point for cold forming made of microalloyed steels EN 10268 : 2013




Chemical composition (melt analysis)									
Steel grade/type		C max. %	Si max. %	Mn max. %	P max. %	S max. %	Al max. %	Ti max. %	Nb max. %
Code	Material no.								
HC180Y	1.0922	0.01	0.3	0.7	0.06	0.025	0.01	0.12	0.09
HC180B	1.0395	0.06	0.5	0.7	0.06	0.030	0.015		
HC220Y	1.0925	0.01	0.3	0.9	0.08	0.025	0.01	0.12	0.09
HC220I	1.0346	0.07	0.5	0.6	0.05	0.025	0.015	0.05	
HC220B	1.0396	0.08	0.5	0.7	0.085	0.030	0.015		
HC260Y	1.0928	0.01	0.3	1.6	0.1	0.025	0.01	0.12	0.09
HC260I	1.0349	0.07	0.5	1.2	0.05	0.025	0.015	0.05	
HC260B	1.0400	0.10	0.5	1.0	0.1	0.030	0.015		
HC260LA	1.0480	0.10	0.5	1.0	0.030	0.025	0.015	0.15	0.09
HC300I	1.0447	0.08	0.5	0.7	0.08	0.025	0.015	0.05	
HC300B	1.0444	0.10	0.5	1.0	0.12	0.030	0.015		
HC300LA	1.0489	0.12	0.5	1.4	0.030	0.025	0.015	0.15	0.09
HC340LA	1.0548	0.12	0.5	1.5	0.030	0.025	0.015	0.15	0.09
HC380LA	1.0550	0.12	0.5	1.6	0.030	0.025	0.015	0.15	0.09
HC420LA	1.0556	0.14	0.5	1.6	0.030	0.025	0.015	0.15	0.09
HC460LA	1.0574	0.14	0.6	1.8	0.030	0.025	0.015	0.15	
HC500LA	1.0573	0.14	0.6	1.8	0.030	0.025	0.015	0.15	

Mechanical properties of thermo-mechanically rolled steels (long.)								
Steel grade/type		0.2 % Elongation limit ¹⁾	Higher yield point through heat treatment ²⁾ BH ₂ N/mm ²	Tensile strength R _m N/mm ²	Fracture elongation ³⁾ A ₈₀ min. quer %	Vertical anisotropy r max. quer	Vertical anisotropy ²⁾³⁾⁴⁾ r min. quer	Work hardening exponent ⁴⁾ r min. quer
Code	Material no.	R _{p0.2} ¹⁾ N/mm ²						
HC180Y	1.0922	180 – 230	35	330 – 400	35	1.4	1.7	0.19
HC180B	1.0395	180 – 230		290 – 360	34		1.6	0.17
HC220Y	1.0925	220 – 270		340 – 420	33		1.6	0.18
HC220I	1.0346	220 – 270	35	300 – 380	34	1.4		0.18
HC220B	1.0396	220 – 270		320 – 400	32		1.5	0.16
HC260Y	1.0928	260 – 320		380 – 440	31		1.4	0.17
HC260I	1.0349	260 – 310	35	320 – 400	32	1.4		0.17
HC260B	1.0400	260 – 320		360 – 440	29			
HC260LA	1.0480	260 – 330		350 – 430	26			
HC300I	1.0447	300 – 350	35	340 – 440	30			0.16
HC300B	1.0444	300 – 360		390 – 480	26			
HC300LA	1.0489	300 – 380		380 – 480	23			
HC340LA	1.0548	340 – 420		410 – 510	21			
HC380LA	1.0550	380 – 480		440 – 580	19			
HC420LA	1.0556	420 – 520		470 – 600	17			
HC460LA	1.0574	460 – 580		510 – 660	13			
HC500LA	1.0573	500 – 620		550 – 710	12			

1) If the yield point is not pronounced, the values apply for the 0.2 % elongation limit (R_{p0.2}), if pronounced, the values apply to the lower yield point (R_s) apply.
 For thicknesses of ≤ 0.70 mm, but > 0.50 mm, a minimum value for fracture elongation of 2 units lower is permissible, and of 4 units lower for thicknesses ≤ 0.50 mm.
 2) For thicknesses of ≤ 0.70 mm, but > 0.50 mm, a minimum value for fracture elongation of 2 units lower is permissible, and of 4 units lower for thicknesses ≤ 0.50 mm.
 3) The r-values only apply for product thicknesses > 0.50 mm. For thicknesses > 2 mm, the r-value is reduced by 0.2.
 4) For thicknesses > 0.50 mm, the yield point may only reach a maximum of 225 N/mm².
 5) The steel grades DC03ED and DC04ED are usually decarburized in the solid phase. After decarburization, analysis must only show a maximum carbon content of 0.004 %.
 6) If specified by the customer, steel grade DC04EK can be supplied in thicknesses of 0.7 mm to 1.5 mm with Re < 210 N/mm² and A80 ≥ 38 %. It then remains for the manufacturer to select the surface roughness values for a dull matt finish.




1) If a yield point is pronounced, the values for the lower yield (R_s) apply.
 2) For thicknesses > 1.2 mm, special arrangements must be made.
 3) For thicknesses ≤ 0.7 mm, but > 0.5 mm, minimum values for breaking elongation of two units lower are permissible. For thicknesses ≤ 0.5 mm, minimum values up to four units lower are permissible.
 4) The minimum values for r (lat.) and n (lat.) only apply to product thicknesses > 0.5 mm.
 5) For product thicknesses > 2 mm, the r₉₀-value is reduced by 0.2.

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Multiphase steels – Cold-rolled products made of multiphase steels for cold forming EN 10338 : 2015

Chemical composition (melt analysis)											
Steel grade/type		C max.	Si max.	Mn max.	P max.	S max.	Al total	Cr + Mo max.	Nb + Ti max.	V max.	B max.
Code	Material no.										
DP-steels											
HCT450X	1.0937	0.14	0.75	2.00	0.080	0.015	0.015 – 1	1.00	0.15	0.15	0.005
HCT490X	1.0939	0.14	0.75	2.00	0.080	0.015	0.015 – 1	1.00	0.15	0.15	0.005
HCT590X	1.0941	0.15	0.75	2.50	0.080	0.015	0.015 – 1.5	1.40	0.15		0.005
HCT780X	1.0943	0.18	0.80	2.50	0.080	0.015	0.015 – 2.0	1.40	0.15	0.20	0.005
HCT980X	1.0944	0.20	1.00	2.90	0.080	0.015	0.015 – 2.0	1.40	0.15		0.005
HCT980XG	1.0997	0.23	1.00	2.90	0.080	0.015	0.015 – 2.0	1.40	0.15	0.22	0.005
TRIP-steels											
HCT690T	1.0947	0.24	2.00	2.20	0.080	0.015	0.015 – 2.0	0.60	0.20	0.20	0.005
HCT780T	1.0948	0.25	2.00	2.20	0.080	0.015	0.015 – 2.0	0.60	0.20		0.005
CP-steels											
HCT600C	1.0953	0.18	0.80	2.20	0.080	0.015	0.015 – 2.0	1.00	0.15		0.005
HCT780C	1.0954	0.18	1.00	2.50	0.080	0.015	0.015 – 2.0	1.00	0.15		0.005
HCT980C	1.0955	0.23	1.00	2.70	0.080	0.015	0.015 – 2.0	1.00	0.15		0.005
MP-steels											
HCT1180G2	1.0969	0.23	1.20	2.90	0.080	0.015	0.015 – 1.4	1.20	0.15		0.005

Mechanical properties (lat.)						
Steel grade/type		Elongation limit ¹⁾	Tensile strength	Elongation	Work hardening exponent	Bake hardening index
Code	Material no.	max. R _{p0.2} N/mm ² min.	max. R _m N/mm ² min.	max. A ₅₀ % min.	n _{10UE} min.	BH ₂ N/mm ² min.
DP-steels						
HCT450X	1.0937	260 – 340	450	27	0.16	30
HCT490X	1.0939	290 – 380	490	24	0.15	30
HCT590X	1.0941	330 – 430	590	24	0.14	30
HCT780X	1.0943	440 – 550	780	14	–	30
HCT980X	1.0944	590 – 740	980	10	–	30
HCT980XG	1.0997	700 – 850	980	8	–	30
TRIP-steels						
HCT690T	1.0947	400 – 520	690	23	0.19	40
HCT780T	1.0948	450 – 570	780	21	0.16	40
CP-steels						
HCT600C	1.0953	350 – 500	600	16	–	30
HCT780C	1.0954	570 – 720	780	10	–	30
HCT980C	1.0955	780 – 950	980	6	–	30
MP-steels						
HCT1180G2	1.0969	900 – 1,150	1180	4	–	30

