

Alleima® Print RP doctor blade steel

Strip steel

Datasheet

Alleima® Print RP (Regular Performance) is a hardened and tempered carbon steel used for printing doctor blade applications. The grade is a standard martensitic steel, suitable for non-water-based inks and is characterized by:

- High wear resistance
- Good straightness
- Good dimensional tolerances
- Excellent edge finish

Standards

- ASTM: 1095
- W.Nr.: 1.1274
- DIN: CK 101
- SS: 1870

Chemical composition (nominal)

Chemical composition (nominal) %

C	Si	Mn	Cr
1.0	0.25	0.45	0.2

Forms of supply

Alleima® Print RP is supplied in coils with inner diameter 350 mm (13.8 in.). Approximately 15 meters of strip material is unshaved on the innermost rings of the coil.

Dimensions

Thickness mm (in.)		Width mm (in.)	
min.	max.	min.	max.
0.076 (0.003)	0.305 (0.012)	8.00 (0.315)	70.0 (2.76)

Other sizes can be offered on request.

Surface condition

Surfaces offered are blue or white polished.

Surface roughness

Surface roughness is measured transversal to the rolling direction with a cut off length of 0.25 mm (0.0098 in.).

Thickness mm (in.)	Ra μm ($\mu\text{in.}$)	Rmax μm ($\mu\text{in.}$)
0.076 (0.003) - 0.305 (0.012)	(Y8) 0.05 - 0.125 (2 - 5)	1.5 (60)

Surface defects

Maximum allowed depth of surface defects (excluding burrs):

Thickness mm (in.)	Scratches μm ($\mu\text{in.}$)	Single minor surface defects μm ($\mu\text{in.}$)
0.076 (0.003) - 0.305 (0.012)	≤ 5 (200)	≤ 5 (200)

Edges

As standard, strip is supplied with round, shaved edges with no sharp corners and with no friction-induced martensite. Edge surface defects such as pits or burrs, $\leq 5 \mu\text{m}$ (200 $\mu\text{in.}$).

The edge radius should be at least equal to half of the strip thickness.

Tolerances

Shape

Straightness

Width > 12.1 mm, R spec = max. 1.4 mm deviation on a 3000 mm length.

Widths < 12 mm, R spec = max. 2.5 mm deviation on a 3000 mm length.

Flatness

Cross bow hardened and tempered strip (H/T) in all tensile strengths (P1 is the Alleima standard).

Tolerance class	Cross bow % of width
	H/T condition
P0	No requirements
P1	max. 0.4
P2	max. 0.3
P3	max. 0.2

Other tolerances may be possible on request.

Width (B1 is standard)

Thickness	Width	Width tolerance +/- mm		
		B1	B2	B3
0.076 - 0.25	8 - <20	0.07	0.05	0.03
	20 - <50	0.10	0.07	0.05
	50 - <70	0.15	0.11	0.07
0.251 - 0.305	8 - <20	0.10	0.07	0.05
	20 - <50	0.15	0.11	0.07
	50 - <70	0.20	0.15	0.10

Thickness (T1 is standard)

Thickness	Width	Thickness tolerance +/- mm		
		T1	T2	T3
0.076 - <0.1	8 - 70	0.006	0.005	0.004
0.1 - <0.125	8 - 70	0.007	0.005	0.004
0.125 - <0.16	8 - 70	0.009	0.006	0.005
0.16 - <0.2	8 - 70	0.01	0.007	0.005
0.2 - <0.25	8 - 70	0.011	0.008	0.006
0.25 - <0.305	8 - 70	0.013	0.009	0.007

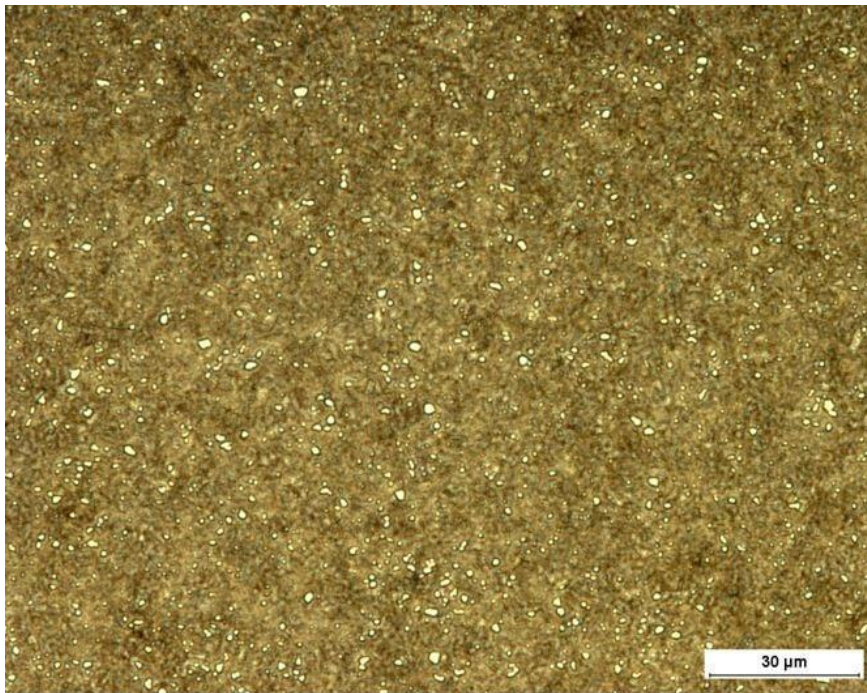
Mechanical properties

Thickness	Tensile strength Rm		Hardness*
	MPa	ksi	Vickers, HV
0.076 (0.003)	2100 +/- 100	305 +/- 14.5	610 +/-25
0.102 (0.004)	2100 +/- 100	305 +/- 14.5	610 +/-25
0.152 (0.006)	2050 +/- 100	297 +/- 14.5	600 +/-25
0.203 (0.008)	2000 +/- 100	290 +/- 14.5	590 +/-25
0.254 (0.010)	1950 +/- 100	283 +/- 14.5	575 +/-25
0.305 (0.012)	1900 +/- 100	276 +/- 14.5	560 +/-25

* Hardness (HV) values are given for information only.

Microstructure

The microstructure is uniform and consists of tempered martensite with a medium amount of small undissolved carbides.



Disclaimer:

Recommendations are for guidance only, and the suitability of a material for a specific application can be confirmed only when we know the actual service conditions. Continuous development may necessitate changes in technical data without notice. This datasheet is only valid for Alleima materials.