

# Alleima® 20C for pad printing applications

## Strip steel

## Datasheet

Alleima® 20C is a hardened and tempered carbon steel used for pad printing applications. The grade is characterized by:

- Excellent surface finish
- Good flatness
- Good etchability
- High strength and wear resistance
- Low level of non-metallic inclusions
- Good dimensional tolerances

### Standards

- ASTM: 1095
- EN Number: 1.1274

### Forms of supply

Strip steel is supplied in labelled coils. The label details the steel grade; heat, lot and coil number; and nominal size, allowing full material traceability.

Material is protected against rust with oil. Coils are packed in wooden cases. For overseas shipment, coils are wrapped in paper and sealed in a plastic bag containing silica gel. Net and gross weights are marked on the case. Customized properties, dimensions and tolerances can be supplied on request.

### Dimensions

Thickness

Alleima® 20C is supplied in standard thicknesses in accordance with the table below.

Thickness		Tolerance, $\pm$	
mm	in.	mm	in.
0.102	0.004	0.007	0.00028
0.114	0.0045	0.007	0.00028
0.152	0.006	0.009	0.00035
0.203	0.008	0.011	0.00043

0.254	0.010	0.013	0.00051
0.305	0.012	0.013	0.00051
0.381	0.015	0.015	0.00059
0.406	0.016	0.017	0.00067
0.457	0.018	0.017	0.00067
0.508	0.020	0.020	0.00078
0.559	0.022	0.020	0.00078
0.600	0.0236	0.020	0.00078

Material with closer tolerances can be supplied on request.

#### Width

Strip in standard thicknesses is stocked in widths up to 320-340 mm (12.6-13.39 in.), ready for slitting to the required width.

## Finishes

#### Edges

Edges are slit and deburred.

#### Flatness

Maximum out-of-flatness across and along the strip is 0.30% of the nominal strip width.

#### Surfaces

Material is delivered white polished, free from oxide discoloration and with uniform color and dust free.

#### Surface roughness

Maximum surface roughness values, cut-off 0.25 mm (.0098 in.), are shown in the table below.

Thickness		R <sub>a</sub>		R <sub>max</sub>	
mm	in.	μm	μin.	μm	μin.
<0.508	<0.020	0.10	4.0	1.0	40
>0.508	>0.020	0.25	10.0	2.5	100

#### Surface defects

A small number of surface defects, such as pits and roll marks, with a depth or height of up to 5 μm (200 μin.) maximum is allowed. The maximum scratch depth allowed is 2.0 μm (80 μin.).

#### Straightness

Out-of-straightness is defined as the maximum deviation from a straight-edge of specified length. The following values apply:

Strip width		Maximum allowed deviation	
mm	in.	mm/m	in./3 feet
>8-<20	>0.315-<0.787	2.0	0.072

>20-<50	>0.787-<1.969	1.5	0.054
>50-<125	>1.969-<4.921	1.25	0.045
>125	>4.921	1.0	0.036

Strip can be supplied with closer straightness values on request.

Also stainless steel in Alleima grade 7C27Mo2 can be supplied for the application pad printing. For further information about the stainless alternative please contact Product area Strip, department for H/T Precision Strip.

## Mechanical properties

### Tensile strength, nominal values at 20 °C (68°F)

Thickness		Tensile strength	
mm	in.	MPa	ksi
<0.125	<0.005	2100	305
0.125-<0.175	0.005-<0.007	2050	297
0.175-<0.225	0.007-<0.009	2000	290
0.225-<0.275	0.009-<0.011	1950	283
0.275-<0.375	0.011-<0.015	1900	276
0.375-<0.425	0.015-<0.017	1850	268
0.425-<0.475	0.017-<0.019	1800	261
0.475-<0.600	0.019-<0.0236	1750	254

The yield strength,  $R_{p0.2}$ , is approximately 90% of the tensile strength,  $R_m$ . The manufacturing tolerance for tensile strength is  $\pm 80$  MPa ( $\pm 11.6$  ksi).

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.