

Hardened and Tempered Carbon Steel Belt

Sandvik I300C

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The Sandvik I300C belt grade is made of hardened and tempered carbon steel and is characterised by:

- Very good static strength
- Very good fatigue strength
- Very good thermal properties
- Excellent wear resistance
- Good reparability

Sandvik I300C is a carbon steel with a hard, smooth surface and a dark oxide layer, which makes it suitable for any application with a low risk for corrosion. Very good thermal properties make it ideal for baking and for heating and drying of liquids, pastes and fine-grained products.

Chemical Composition (Nominal) %

C	Si	Mn	Cr
0.65	0.25	0.65	0.20

Specification

Werkstoff Nr.	1.1231
AISI	1070

Forms of Supply

The belts are, as standard, delivered in a hardened and tempered condition and have well-rounded edges. If required practically any surface finish can be supplied. Perforated belts are also available.

The belts are levelled and straightened to obtain optimal flatness and straightness. The belts can be supplied in open lengths, with the ends prepared for welding or riveting on site, or in endless condition with a welded joint.

For tracking, the belts can be provided with rubber V-ropes. If required, the product side of the belt can be fitted with retaining strips to keep the conveyed material on the belt or with transverse flights to prevent material from sliding backwards when the belt is steeply inclined.

Different tolerance grades are available to ensure that the best belt can be selected from an economic point of view.

Recommendation and advice are available from your local Sandvik Office.

Mechanical properties Static strength

Static strength

Position	Standard strength at room temperature, nominal values								
	Proportional limit		Yield strength		Tensile strength		Elongation A5 (%)	Weld factor Rm/Rm	Hardness HV5
	MPa	ksi	MPa	ksi	MPa	ksi			
Parent material			1200	174	1280	186	11		400
Transverse weld (not heat treated)			880	128	990	144	3	0.77	*

*See figure on page 2.

Standard strength at elevated temperature

Temperature		Proportional limit		Yield strength		Tensile strength		Elongation A5 (%)	Hardness HV5
°C	°F	MPa	ksi	MPa	ksi	MPa	ksi		
100	212			980	142	1220	177	10	
200	392			950	138	1210	175	12	
300	572			890	129	1170	170	28	
400	752			720	104	850	123	28	

Sandvik I300C should not be exposed for prolonged periods (a few hours) to temperatures exceeding 450° C (840° F). A reduction in strength due to carbide precipitation takes place at elevated temperatures and this process is also time related (a short time and high temperature give the same effect as long time and lower temperature).

Hence the following recommendation: If an operation temperature of or above 350° C (660° F) is considered, your local Sandvik office should be contacted for technical assistance.

Impact properties

This belt grade is not recommended for use at low temperature, i.e. such as in freezing operations.

Dynamic Strength

The fatigue limit is defined as the reverse bending stress at which 50% of the test specimen withstand a minimum of 2×10^6 load cycles. These values refer to 20° C (68° F), a normal dry atmosphere and standard prepared specimen. The fatigue limit for the parent material is approximately ± 460 MPa (67 ksi).

