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Sandvik Bioline 13C26

(Strip steel)

Sandvik Bioline 13C26 is a martensitic stainless chromium steel supplied in strip form. The grade is mainly supplied in annealed or cold rolled condition, characterized by:

- Soft delivery condition
- Good formability
- Good blanking properties

After heat treatment, Sandvik Bioline 13C26 is characterized by:

- High hardness
- Good corrosion resistance
- High wear resistance

STANDARDS

- DIN X65Cr13

Product standards

ISO 7153-1

APPLICATIONS

Sandvik Bioline 13C26 is mainly used for ophthalmologic and surgical surgical blades. It is also a standard grade for razor blades and used for different types of knives.

CHEMICAL COMPOSITION (NOMINAL) %

C	Si	Mn	P max.	S max.	Cr
0.68	0.4	0.7	0.025	0.010	13

FORMS OF SUPPLY

The strip can be supplied either in coils or as straightened lengths of 0.5 - 4.0 meter (1.6 - 13.1 feet). The coil weight is max 5 kg/mm (280 lb/in.) of strip width.

Hardening and tempering of the strip steel is required to achieve the correct finish and to meet the properties necessary for the end user.

DIMENSIONS

Thickness mm (in.)		Width mm (in.)	
min.	max.	min.	max.
0.1 (0.0039)	1.0 (0.039)	5 (0.197)	350 (13.78)

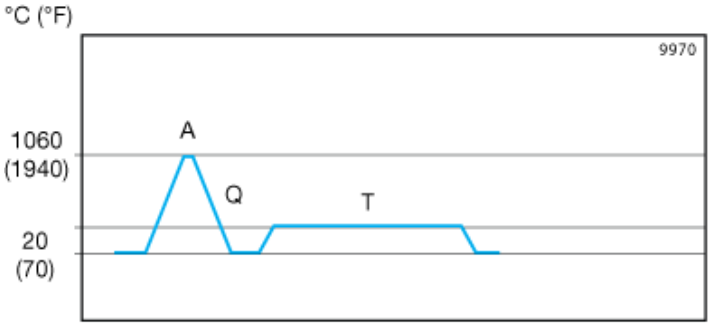
Other sizes can be supplied to meet specific requirements.

Tolerances

The thickness and width tolerances are +/- tolerances to the nominal size. The normal tolerance classes for most of our strip products are T2 and B1. Tighter tolerances as well as other tolerance limits can be offered upon request.

HEAT TREATMENT

Hardening data and Tempering data: Piece hardening



A = Austenitizing, Q = Quench, T= Tempering

Austenitizing

Belt furnace. Time in furnace according to table

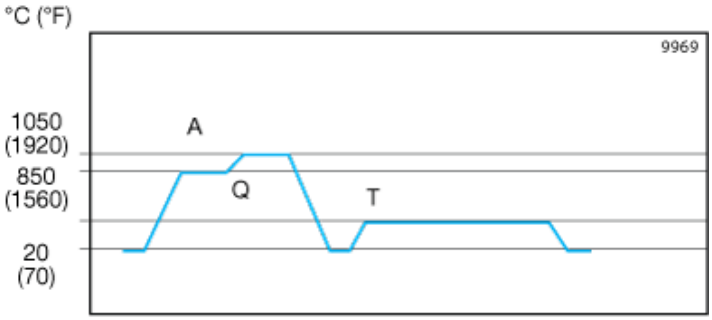
Thickness mm	Thickness in.	Time minutes
2.5	0.100	5
3.0	0.118	6
3.25	0.128	7
3.5	0.138	8
3.45	0.148	10
4	0.157	12

Quench
As rapid as possible, for optimal result 600°C (1110°F) should be reached within 2 minutes or less.

TEMPERING 2 HOURS

Hardness HRC	Temperature °C (°F)
59	175 (345)
57	225 (435)
55	350 (660)

Hardening data and Tempering data : Batch hardening



A = Austenitizing, Q = Quench, T = Tempering

Temperature should be equalized at 850°C (1560°F) for 30 minutes to avoid unnecessary temperature variations.

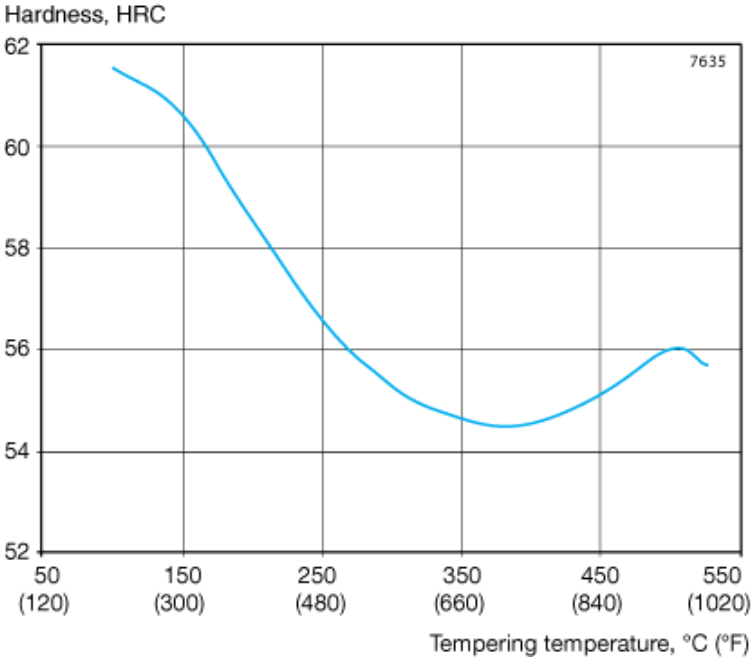
Austenitizing
Batch furnace. 30 minutes in furnace.

Quench
As rapid as possible, for optimal result 600°C (1110°F) should be reached within 2 minutes or less.

TEMPERING 2 HOURS

Hardness HRC	Temperature °C (°F)
59	175 (345)
57	225 (435)
55	350 (660)

Hardness versus tempering temperature



Brittleness occurs with tempering above 450°C (840°F).

MECHANICAL PROPERTIES

As delivered	Tensile strength Rm MPa (ksi)	Hardness HV	 HRC
Annealed	max. 800(116)	max. 250	max. 22
Cold rolled	830-1050 (121-152)	260-328	24-33
Hardened and tempered	1700-2000 (247-290)	545-633	52-57

Mechanical properties can vary depending on the tempering parameters

PHYSICAL PROPERTIES

The physical properties of a steel are related to a number of factors, including alloying elements, heat treatment and manufacturing route, but the data presented below can generally be used for rough calculations.

Density : 7.7 g/cm^3 (0.28 lb/in.^{3})

DISCLAIMER:
Sandvik is not providing any products or services that are intended or may be construed to be recommending or otherwise advising on, in any manner, the design, suitability, appropriateness or effectiveness, from a medical/biological/safety perspective, of any medical material, instrument and/or medical device.