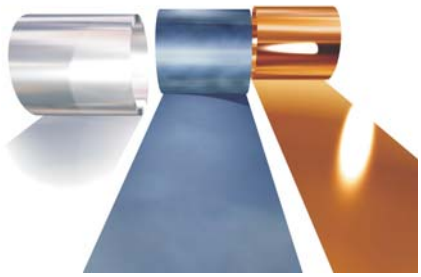
Material Data Sheet CB 630 SGM

The material CB 630 SGM is a cold rolled stainless steel with martensitic structure. This steel quality with its very good spring properties, high ductility and high strength as well as very good weldability was specially developed for highly demanding steel belt applications. By precipitation hardening, different levels of tensile strength can be obtained, according to the customers' individual requirements*.

The surface is mill finish according to 2B of ASTM with a selected cold rolled temper finish. The surface is smooth and clear, metallically clean, minor surface defects are admissible.



Chemical Composition:

Carbon	0.07	%
Silicon	1.00	%
Manganese	1.00	%
Phosphorus	0.040	%
Sulphur	0.030	%
Nickel	5.00 - 7.00	%
Chromium	15.00 - 16.00	%
Copper	3.50	%
Niob	0.30	%

Mechanical Properties:

Tensile strength at RT			1450 [N/mm²] / 1550 [N/mm²]*
Yield point 0.2 at RT			1410 [N/mm²] / 1500 [N/mm²]*
Elongation			7 / 6 [%]*
Hardness	Vickers	HV 10	465 / 490*
	Rockwell	HRC	47 / 48*
Fatigue strength at RT			580 [N/mm²] / 650 [N/mm²]*
Welding factor			0.80

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Physical Properties:

Modulus of elasticity at	20 °C	197 000 [N/mm²]
	100 °C	192 000 [N/mm²]
	200 °C	186 000 [N/mm²]
	300 °C	180 000 [N/mm²]
	68 °F	28 700 [ksi]
	212 °F	27 900 [ksi]
	392 °F	27 000 [ksi]
	572 °F	26 300 [ksi]
Density		7.80 [kg/dm³]
		0.283 [lbs/in³]
Mean thermal expansion coefficient	20-100 °C	$11.6*10^{-6}$ [m/mK]
	20-200 °C	$11.7*10^{-6}$ [m/mK]
	20-300 °C	$11.8*10^{-6}$ [m/mK]
	68-212 °F	6.5 [$\triangle$L/L °F * 10^{-6}]
	68-392 °F	6.6 [$\triangle$L/L °F * 10^{-6}]
	68-572 °F	7.7 [$\triangle$L/L °F * 10^{-6}]
Specific Heat at 20 °C (68 °F)		0.46 [J/gK]
		0.11 [Btu/lbF]
Thermal conductivity	0-100 °C	18 [W/mK]
	0-400 °C	23 [W/mK]
	32-212 °F	10.3 [Btu/fthF]
	32-752 °F	13.3 [Btu/fthF]
Specific electrical resistance at 20 °C (68 °F)		0.77 [Ωmm²/m]
Permeability Hmax.		151
Remanence		0.6 [Wb/m²]

Temperature Stability:

At elevated temperatures, a reduction in tensile strength can be observed. Above Temperatures of 250 °C (482 °F) this reduction reaches considerable extents. If an operation temperature above 250 °C is considered, Contibelt should be contacted for technical assistance. This steel grade is not recommended for use at temperatures below freezing point (0 °C / 32 °F).

**) Values marked with an asterisk indicate the typical mechanical properties which can be obtained by selective precipitation hardening in accordance with customer requirements.*

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