



Material data sheet

CB 105 SGF

The material CB 105 SGF is cold rolled, hardened carbon steel with ferritic structure. This material was specially developed with low carbon content for very good welding properties and very good workability.

The surface is mill finish according to 2B of ASTM. The surface is smooth and clear, metallurgically clean, minor surface defects are admissible.

Chemical Composition

Carbon	≤ 0.15	%
Silicone	≤ 1.00	%
Manganese	1.60 – 2.60	%
Phosphorus	≤ 0.035	%
Sulphur	≤ 0.005	%

Mechanical Properties

Tensile strength at RT		1 100 [N/mm ²]	160 [ksi]
Yield point 0.2 at RT		1 000 [N/mm ²]	145 [ksi]
Elongation		10 [%]	
Hardness	Vickers	HV 10	360
	Brinell	HB	380
	Rockwell	HRC	38
Fatigue strength at RT		400 [N/mm ²]	58 [ksi]
Welding factor		0.90	



Physical Properties

Modulus of elasticity at	20 °C	205 000 [N/mm ²]	
	100 °C	199 000 [N/mm ²]	
	200 °C	193 000 [N/mm ²]	
	300 °C	188 000 [N/mm ²]	
	68 °F	29 700 [ksi]	
	212 °F	28 900 [ksi]	
	392 °F	28 000 [ksi]	
	572 °F	27 300 [ksi]	
Density	7.85 [kg/dm ³]	0.284 [lbs/in ³]	
Mean thermal expansion coefficient	20-100 °C	11.1 [m/mK * 10 ⁻⁶]	
	20-200 °C	12.0 [m/mK * 10 ⁻⁶]	
	20-300 °C	12.9 [m/mK * 10 ⁻⁶]	
	68-212 °F	6.2 [ΔL/L °F * 10 ⁻⁶]	
	68-392 °F	6.8 [ΔL/L °F * 10 ⁻⁶]	
68-572 °F	7.2 [ΔL/L °F * 10 ⁻⁶]		
Specific Heat at 20 °C (68 °F)	0.46 [J/gK]	0.11 [Btu/lbF]	
Thermal conductivity at 20 °C (68 °F)			
	46 [W/mK]	26.6 [Btu/fthF]	
Specific electrical resistance at 20 °C (68 °F)		0.13 [Ωmm ² /m]	

Temperature Stability

As the steel is cold rolled, recovery takes place at elevated temperature. The higher the temperature the less the tensile strength and yield strength. Up from a temperature of 600 °C (1112 °F) tinner is appearing. The max. permissible operating temperature is 250 °C (482 °F). If an operation temperature above 250 °C is considered, Contibelt office should be contacted for technical assistance. At temperatures below 0 °C (32 °F) this belt grade is not recommended for use.