



MATERIAL SPECIFICATION SHEET

GRADE: 16MNCR5



Material nº:

No: 1.7131

Equivalencia norma - Standard Reference:

ISO 683-3

Other references:

ISO 683-3

Tipo de acero - Steel type:

Case hardening steels

Aplicación - Application:

Wire rod used in automotive engineering , designed to use with the case hardening technique in which the metal surface is reinforced by the adding of a fine layer at the top of the material more durable. Case hardening steel is normally used to increase the object life.

Tough core and a hard case are the desired attributes of case-hardened steel components. This combination of properties provides wear resistance and fatigue strength at the surface, and impact strength in the core. It is achieved by carburizing the component's surface, then quenching and tempering the part. Carburized components include gears of all kind, camshafts, universal joints, driving pinions, link components, axles and arbours. All these components must resist wear and fatigue, have inherent toughness, and still be machinable.

Composición química (%) - Chemical composition (%):

Element	Min	Max
%C	0,14	0,19
%Mn	1,00	1,30
%Si	0,15	0,025
%P	0,80	0,035
%P		0,40

Característica mecánicas bruto - Mechanical characteristics (As rolled)

Resistencia - Tensile strength (Mpa) 630 max

Dureza – Hardness (HB) 187 HB max

Jominy test (+H)	
dimension	value
~ 1.5 mm	39 - 47 HRC
~ 3 mm	36 - 46 HRC
~ 5 mm	31 - 44 HRC
~ 7 mm	28 - 41 HRC
~ 9 mm	24 - 39 HRC
~ 11 mm	21 - 37 HRC
~ 13 mm	<= 35 HRC
~ 15 mm	<= 33 HRC
~ 20 mm	<= 31 HRC
~ 25 mm	<= 30 HRC
~ 30 mm	<= 29 HRC
~ 35 mm	<= 28 HRC
~ 40 mm	<= 27 HRC

Tolerancias dimensionales - Dimensional tolerances

According to **EN 10108 Class B**

Calidad superficial - Surface quality

According to **ISO 9443:2018 class B**

Material verified by **Eddy Current Control**

Dimensiones y peso del rollo – Coil dimensions and coil weight



3100 kg or 2600 kg aprox. and half coils packed together of 1650 kg or 1300 kg aprox.
Each coil tied minimum with four strips

Stelmor line (rod sizes from 5.5 up to 24.0 mm)

Coil weight (kg) aprox.	Coil length (mm) aprox.	Inner diameter (mm) aprox.	Outer diameter (mm) aprox.
2650	1800	900	1250
3150	2000	900	1250

Note: when cutting the coil ties, the length can be increased significantly.

Stelmor line: Half coils

Coil weight (kg) aprox.	Coil length (mm) aprox.	Inner diameter (mm) aprox.	Outer diameter (mm) aprox.
1325	900	900	1250
1575	1000	900	1250

Note: half coils are delivered in bundles of two coils packed together

Hot coiling line (rod sizes from 25.0 up to 52.0 mm)

Coil weight (kg) aprox.	Coil length (mm) aprox.	Inner diameter (mm) aprox.	Outer diameter (mm) aprox.
2650	1700	950	1300
3150	1800	950	1300

Note: when cutting the coil ties, the length should not have a significant increase.
Other coil weights could be made, if customer need