

1.0715 QA | 11SMN30 | DIN 10277, DIN 683-4

Automotive & Automation Technology | Data Sheet | Precision Wire

ZAPP

Zapp is certified to ISO 9001 | IATF 16949



Classification Zapp® 1.0715 QA*

- Free cutting steel
- Material no. 1.0715
- Short name: 11SMn30
- Standards: DIN EN 10277 and DIN ISO 683-4

* 1.0715QA is a Zapp-specific variant of the 1.0715 material. The material has optimized properties. Please do not hesitate to contact us.

Typical Fields of Application

Zapp® 1.0715 QA is a free cutting steel that is characterized by very good workability by using tooling machines and shows excellent machinability. Zapp® 1.0715 QA also has excellent magnetic properties.

Corrosion Resistance

Zapp® 1.0715 QA is not resistant to corrosive environments.

Machinability

Zapp® 1.0715 QA is very good machinable.

Weldability

Zapp® 1.0715 QA is not recommended for welding due to the high sulfur and phosphorus content.

Magnetic Properties

Zapp® 1.0715 QA has an extremely high saturation polarization with good permeability and coercive field strength at the same time.

Heat Treatment

Zapp® 1.0715 QA is not hardenable.

Typical Chemical Analysis [Mass-%]

C	Si	Mn	P	S
≤ 0.14	≤ 0.05	0.90-1,30	≤ 0.11	0.27-0.33

Mechanical Properties

Tensile strength R_m	510 – 810 MPa cold-worked 300 – 500 MPa soft-annealed
Yield Strength R_e	≥ 440 MPa cold-worked ≥ 200 MPa soft-annealed
Elongation A_5	≥ 6 % cold-worked ≥ 20 % soft-annealed

Physical Properties

Density ρ	7.8 kg/dm ³
Modulus of elasticity E at 20° C	210 GPa
Specific electrical resistance ρ at 20° C	57 W/(m*K)
Coefficient of thermal expansion α	(10 ⁻⁶ K ⁻¹)
20 – 100 °C	12.7
20 – 200 °C	13.1
20 – 300 °C	13.4
20 – 400 °C	13.8
Specific heat c	461 J/(kg*K)

Magnetic Properties of Round Bars

Coercivity H_c	≤ 300 A/m
Maximal permeability μ_{max}	≥ 1.500
Saturation polarization J_s	≥ 2,0 T
Remanence B_r	≥ 1,0 T
Specific el. resistance ρ at 20 °C	≥ 0,2 $\mu\Omega m$

Delivery Forms

Bar	annealed, ground
Profile	annealed, straightened

Surface Finish

Crack test according to DIN EN 10277,
Surface quality class 1-4

For improved properties in different areas, we recommend the following Zapp® qualities

Corrosion Resistance

Zapp® 1.4003 IA

Zapp® 1.4005 IA

Zapp® 1.4105 IL

Zapp® 1.4511 IA

Zapp® 1.4523 IM

Weldability

Zapp® 1.4003 IA

Zapp® 1.4511 IA

PRECISION WIRE

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Further information regarding our products and locations are available in our image brochure and under www.zapp.com

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