

Alloy Ergste® 1.4303SA/1.4303ST

Technical Information

ZAPP

Zapp is certified to ISO 9001

Ergste® 1.4303SA / 1.4303ST

Categorization

Austenitic stainless Chromium-Nickel-Steel

DIN EN 10088-2: 1.4303, X4CrNi 18-12

ASTM A666/AISI: Type 305 (USA)

JIS G4305: SUS 305 (Japan)

Surfaces and tensile strength

Possible conditions for delivery are:

Solution annealed (soft) procedure 2R, or work hardened (half-hard and hard) in accordance to DIN EN 10151 procedure 2H with tensile strength up to maximum 1350 MPa.

Dimension

Thickness: 0.035 to 2.0 mm

Width: 3 to 420 mm

Tolerances are acc. to DIN EN 9445 P

Closer tolerances on request.

Edges

- mill edges
- slit
- deburred
- rounded

Form of delivery

- coils
- multicoils
- spools
- bars

Typical applications

In soft condition:

- deep-drawing-parts with a high degree of forming
- parts which show only little magnetism after cold forming

In hard condition:

- springs with low magnetism

Approximate chemical analysis (%)

Alloy	C	Si	Cr	Ni
1.4303SA	0.035	0.55	18.5	11.5
1.4303ST	0.030	0.50	18.5	12.5

Typical mechanical values at room temperature*

	Soft	Half hard	Hard
Tensile strength R_m [MPa]	570-700	950	1250
0.2 % Yield point $R_{p0.2}$ [MPa]	230-300	830	1150
Elongation A80 [%]	> 35	4	1

* typical values, intermediate values possible

Physical properties at room temperature

	Physical properties at 20 °C
Density ρ	7.9 [kg/dm ³]
Elastic-Modulus	200 [GPa]
Thermal conductivity λ	15 [W/m · K]
Specific heat c_p	500 [J/kg · K]
Specific electrical resistance ρ	0.73 [$\Omega \cdot \text{mm}^2/\text{m}$]
Thermal expansion Ω : 20 – 100 °C	16.0 x 10 ⁻⁶ · K ⁻¹
20 – 400 °C	18.0 x 10 ⁻⁶ · K ⁻¹

Technical properties

Ergste® 1.4303SA/ST is a corrosion resistant steel with very good formability in soft condition and optimized for deep drawing processes.

In particular the work hardening of the grade

Ergste® 1.4303ST is very low, so that high degrees of forming can be done without intermediate annealing.

Ergste® 1.4303SA/ST is weldable.

For machining high quality tooling is required, like for all stainless steels. Polishing is possible.

Ergste® 1.4303SA/ST in annealed condition shows no magnetism and becomes slightly magnetic when is cold formed.

Zapp Precision Metals GmbH

PRECISION STRIP

Hochstraße 32

59425 Unna

P.O. Box 21 29

59411 Unna

Phone +49 2304 79-508

Fax +49 2304 79-7979

precisionstrip@zapp.com

www.zapp.com

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