

Forta 301LN/4318

EN 1.4318, ASTM TYPE 301LN / UNS S30153

General characteristics

Forta 301LN/4318 is a low-carbon, nitrogen-alloyed alternative to Forta 301/4310 with elevated strength, making it particularly suitable for lightweight construction applications.

Typical applications

- Vehicle chassis

Products & dimensions

Cold rolled products, available dimensions (mm)

Surface finish		Coil / Strip		Plate / Sheet	
		Thickness	Width	Thickness	Width
2H	Work hardened	0.05-6.00	3-1530	0.50-6.00	35-1530

Chemical composition

The typical chemical composition for this grade is given in the table below, together with composition limits given for the product according to different standards. The required standard will be fully met as specified on the order.

The chemical composition is given as % by mass.

	C	Mn	Cr	Ni	Mo	N	Other
Typical	0.02		17.7	6.5		0.14	
ASTM A240	≤0.03	≤2.00	16.0-18.0	6.0-8.0		0.07-0.20	
ASTM A666	≤0.03	≤2.00	16.0-18.0	6.0-8.0		0.07-0.20	
EN 10028-7	≤0.030	≤2.00	16.50-18.50	6.00-8.00		0.10-0.20	
EN 10088-2	≤0.030	≤2.0	16.5-18.5	6.0-8.0		0.10-0.20	
EN 10088-4	≤0.030	≤2.0	16.5-18.5	6.0-8.0		0.10-0.20	
IS 6911	≤0.03	≤2.00	16.0-18.0	6.0-8.0	≤0.70	0.07-0.20	

Corrosion resistance

Pitting corrosion resistance		Crevice corrosion resistance
PRE	CPT	CCT
20	<10	<0

Pitting Resistance Equivalent (PRE) is calculated using the following formula: $PRE = \%Cr + 3.3 \times \%Mo + 16 \times \%N$

Corrosion Pitting Temperature (CPT) as measured in the Avesta Cell (ASTM G 150), in a 1M NaCl solution (35,000 ppm or mg/l chloride ions).

Critical Crevice Corrosion Temperature (CCT) is obtained by laboratory tests according to ASTM G 48 Method F

Mechanical properties

Cold rolled coil and sheet	R _{p0.2} MPa	R _{p1.0} MPa	R _m MPa	Impact strength J	Rockwell	HB	HV
Typical (thickness 1 mm)	360	400	750				
ASTM A240	≥ 240		≥ 550		≤ 100HRB	≤ 241	
EN 10028-7	≥ 350	≥ 380	650 - 850				
EN 10088-2	≥ 350	≥ 380	650 - 850				
EN 10088-4	≥ 350	≥ 380	650 - 850				
IS 6911	≥ 240		≥ 550		≤ 100HRB	≤ 241	

Hot rolled coil and sheet	R _{p0.2} MPa	R _{p1.0} MPa	R _m MPa	Impact strength J	Rockwell	HB	HV
Typical (thickness 4 mm)	350	400	740			90	
ASTM A240	≥ 240		≥ 550				
EN 10028-7	≥ 350	≥ 380	650 - 850				
EN 10088-2	≥ 350	≥ 380	650 - 850				
EN 10088-4	≥ 350	≥ 380	650 - 850				
IS 6911	≥ 240		≥ 550		≤ 100HRB	≤ 241	

Hot rolled quarto plate	R _{p0.2} MPa	R _{p1.0} MPa	R _m MPa	Impact strength J	Rockwell	HB	HV
Typical (thickness 15 mm)	345	380	750				
ASTM A240	≥ 240		≥ 550				
EN 10028-7	≥ 330	≥ 370	650 - 850				
EN 10088-2	≥ 330	≥ 370	630 - 830				
EN 10088-4	≥ 330	≥ 370	630 - 830				
IS 6911	≥ 240		≥ 550		≤ 100HRB	≤ 241	

¹Elongation according to EN standard:

A₈₀ for thickness below 3 mm.

A for thickness = 3 mm.

Elongation according to ASTM standard A₂^{*} or A₅₀.

Physical properties

The physical properties of the available products are given in the table below.

Density kg/dm ³	Modulus of elasticity GPa	Thermal exp. at 100 °C 10 ⁻⁶ /°C	Thermal conductivity W/m°C	Thermal capacity J/kg°C	Electrical resistance μΩm	Magnetizable
7.9	200	16.0	15	500	0.73	No

Fabrication

More detailed information concerning welding procedures can be obtained from the Outokumpu Welding Handbook, available from our sales offices.

Standards & approvals

The most commonly used international product standards are given in the table below.

Standard	Designation
ASTM A240/A240M	TYPE 301LN / UNS S30153
ASTM A666	TYPE 301LN / UNS S30153
EN 10028-7, PED 2014/68/EU	1.4318
EN 10088-2	1.4318
EN 10088-4	1.4318
IS 6911, AMENDMENT NO. 2	ISS 301LN

Contacts & Enquiries

Contact your nearest sales office

www.outokumpu.com/contacts

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