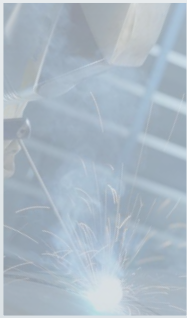


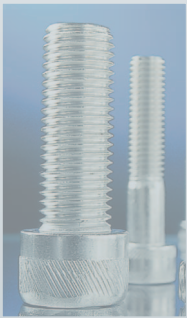


Wire Rod

Welding



Cold Heading



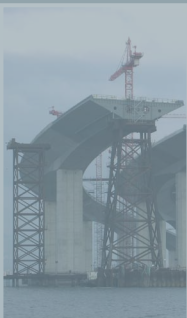
Spring



High Temperature



Duplex



Thanks to a company history starting already 1873, Fagersta Stainless belongs to one of the world leading producers of stainless wire rod and wire. With customized chemistries the products fulfill everything from simple to high demanding applications.

OPTIMUM WIRE ROD FOR SPRINGS

To get best possible properties for spring wire rod, following parameters are important:

- Tight chemistry for identical properties
- Mechanical properties and deformation hardening
- Corrosion properties
- Surfaces
- Dimension tolerances

STANDARD STEEL GRADES FOR SPRINGS

Our grades have tight chemistries and therefore equal properties from delivery to delivery.

We recommend following of our standard grades:

EN. Nr	TYPE / AWS		FAGERSTA	C	Si	Mn	Cr	Ni	Mo	N	TS	CWH	Md30	PRE
				%	%	%	%	%	%	%	N/mm ²		Nohara	
1.4310	302		R 300.15	0.100	1.10	1.25	16.80	7.70	0.65	0.045	630-730	149	-5	20
1.4310	302		R 300.20	0.052	0.45	1.20	17.40	8.25	0.60*	0.050	590-690	128	4	19
1.4310	302		R 300.31	0.100	0.90	1.25	17.30	8.20	0.60*	0.030*	600-700	139	-8	19
1.4310	302		R 320.17	0.070	0.45	1.25	18.35	8.10	0.60	0.040	590-690	130	-10	20
1.4401	316		R 420.18	0.050	0.35	1.55	16.80	10.70	2.10	0.060*	550-650	102	-85	24
1.4541	321		R 359.10	0.030	0.50	1.15	17.80	9.20	0.60*	0.020*	500-600	94	5	19
1.4568	631	17-7PH	R 560.21	0.078	0.35	0.75	16.50	7.65	0.40*	0.020*	580-820			17

(Other grades from our standard range are displayed on the reverse side)

MECHANICAL PROPERTIES AND DEFORMATION HARDENING

Depending on what shape and wished tensile strength an end product shall have, the wire rod should have a specific ductility (formability) for the cold heading process and that it reaches a specific level of deformation hardening. Following methods of measurement are used regarding deformation hardening:

CWH-factor "Cold Work Hardening Factor", a matrix consisting of C, Cr and Ni contents. The factor varies between 80 – 150 and increases with increasing deformation hardening in the steel.

Md30 The temperature (°C) at which 30% true elongation (about 25% area reduction) makes 50% of the austenitic phase transform to deformation martensite. A higher temperature means higher deformation hardening in the steel.

CORROSION

PRE (= Pitting Resistance Equivalent = Cr + 3.1 x Mo + 25 x N) is a factor comparing properties of different chemistries with regards to pitting and crevice corrosion in corrosive environments. A higher value means better resistance. In the table above, PRE is shown for the grades we recommend for springs.

SURFACES

Direct cooling (DK) ASTM 10-13
 "In line"-annealing (DST) ASTM 5-8
 Pit furnace (SG) ASTM 3-6

Our standard procedure is to supply the wire rod in pickled condition.

DIMENSIONS

5.0

18.0

Standard: 5 – 18 mm (.197" - .709") in increments of 0.5 mm (.020")
 (MOQ:s for some dimensions)

Tolerance: 5.0 – 10.0 +/-0.15
 >10.0 – 18.0 +/-0.20

Ovality: Max 60% of the total tolerance span.

Surface classes: Class 3 is the standard class which has a max defect depth of 0.10 mm for dimensions ≤ 10 mm and 1% of the diameter for dimensions > 10 mm. Welding rod has class 2 (max 0.20).

PACKAGING METHODS

Coil weight: Appr. 1000 kg

Outer diameter: Max 1250 mm

Inner diameter: Max 950 mm

