



Cogne Acciai Speciali

# Stainless Steel Bars

Improved **M**achinability **COGNE**

[www.cogne.com](http://www.cogne.com)

ROUND BARS

	ROUND BARS						HEXAGONS
	Peeled & Reeled	Rough peeled	Turned	Cold drawn polished	Peeled & polished (rough ground)	Centreless ground	Cold drawn
Size mm	<b>20-101,60mm</b> 0.787" - 4"	<b>102-390mm</b> <4.0" - 15.354"	<b>391-600mm</b> <15.4" - 26.5"	<b>4,00-25,4mm</b> 0.157" - 1"	<b>20-80mm</b> 0.787" - 3.150"	<b>4-80mm</b> 0.157" - 3.150"	<b>11-27</b> 0.433" - 1.063"
Tolerances DIN EN 10278	<b>k11-h10</b> DIN EN 10278	<b>DIN</b> 1013	<b>DIN</b> 1013	<b>h9</b> DIN EN 10278	<b>h9</b> DIN EN 10278	<b>h9-h8-h7</b> DIN EN 10278	<b>h11</b>
Standard length mm	<b>3000-3100mm</b> <b>6000-6200mm</b> 12" ≈ 4" 20" ≈ 4"	<b>4000-6200mm</b> 12" ≈ 14" 20" ≈ 22"	<b>3000-6000mm</b> 10" ≈ 20"	<b>4000-6200mm</b> 12" ≈ 14" 20" ≈ 22"	<b>4000-6200mm</b> 12" ≈ 14" 20" ≈ 22"	<b>4000-6200mm</b> 12" ≈ 14" 20" ≈ 22"	<b>4000-6200mm</b> 12" ≈ 14" 20" ≈ 22"
Bundle weight	<b>1000Kg</b>	<b>1000Kg</b> One bar	<b>One bar</b>	<b>500Kg</b>	<b>1000Kg</b>	<b>500Kg</b>	<b>500Kg</b>

### Quality, Environmental and Safety Management System, Process Accreditation and Product Certification

Customer Satisfaction is part of Cogne Acciai Speciali Mission; therefore the Quality Management System has been designed according to different Standards to which Cogne Acciai Speciali is complying: UNI EN ISO 9001:2015, IATF 16949:2016 and UNI EN 9100:2018.

In addition, Cogne Acciai Speciali Environmental and Safety System are certified according respectively to UNI EN ISO 14001:2015 and UNI ISO 45001:2018.

Cogne Acciai Speciali is accredited according to NADCAP for heat treatment as well as to ASME NCA 3800 – Part III for nuclear productions and the Chemical Laboratory is accredited according to UNI CEI EN ISO/IEC 17025:2018.

For all detail related please refer to:

[www.cogne.com/en/qualita/](http://www.cogne.com/en/qualita/)

Test certificates comply with Euronorm EN 10204 3.1

(last revision) and Euronorm EN 10088 for technical data.



# Bars

Cogne stainless steel bars are suitable for all the application technologies, and are produced in rounds, squares and hexagons. A specific product line is represented by the rounds for seamless tubes.

The production line, made up of accurate manufacturing cycles and alloy refining in the steel plant, includes hot (rolling and forging) or cold transformations (peeling and cold drawing). The latter is especially indicated when reaching high mechanical characteristics is needed.

Particular finishing processes such as GRINDING make it possible to produce defect-free surfaces: a further finishing level can be reached through mechanical polishing, thereby improving the aesthetics of the product (**BRIGHT BARS**).

The different sorts of traditional stainless steel – austenitics, ferritics martensitics – are produced to meet the needs of hot and cold deformation and of corrosion or high temperature hot oxidation resistance.

Besides, a particular quality, **IMCO®** (Improved Machinability Cogne), has been developed to improve the machinability on high speed and automatic tool machines of the bar itself.

Advanced stainless steels complete Cogne's production range with duplex and superduplex, precipitation hardening, superaustenitic steels and refractory stainless steel, created to resist at high temperatures and/or in very aggressive environments.

The spread of Cogne's distribution network, with its warehouses situated in Europe and around the World allows proximity of the product to its final enduser.

Our after-sale service ensures a close **relationship between Cogne Acciai Speciali** and the customer, supporting the latter with a specialized technical centre, located in our Aosta Steel Plant, allowing the user to make the most appropriate product choice. At the same time the customer can benefit from the continuous technical services, even during the subsequent transformation processes.



## STAINLESS STEEL

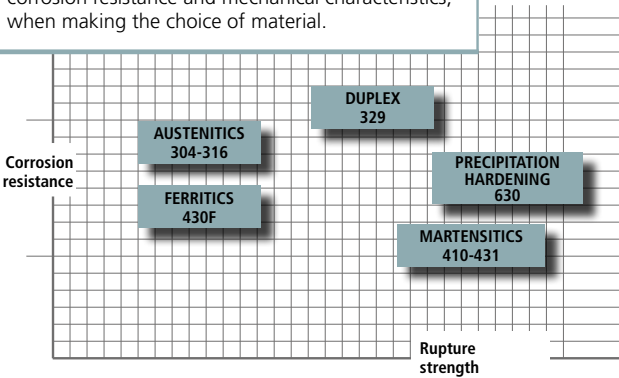
Steel Class	Cogne Grade	Improved machinability	EN/DIN/UNI	W.N.	BS	SIS (SWEDEN)	AISI/ASTM/ASME
Austenitic grades	303/1	IMCO®	X8CrNiS 18-9	1.4305	303S31	2346	303 8F B8F
	303K	IMCO®	X6CrNiCuS 18-9-2	1.4570			
	304R		X2CrNi 19-11	1.4306	304S12	2352	304 L
	F304	IMCO®	X5CrNi 18-10	1.4301	304S31	2333	304 B8
	304K		X3CrNiCu 18-9-4	1.4567	394S17		304 Cu
	F304L	IMCO®	X2CrNi 19-11	1.4306	304S12	2352	304 L
	F304L1	IMCO®	X2CrNi 18-9	1.4307	304S11	304 L	
	309Si		X15CrNiSi 20-12	1.4828	309S24		309
	F316	IMCO®	X5CrNiMo 17-12-2	1.4401	316S31	2347	316 8M B8M
	316K		X3CrNiCuMo 17-11-3-2	1.4578	396S17		
	F316L	IMCO®	X2CrNiMo 17-12-2	1.4404	316S11	2348	316L 8M B8M
	316LK	IMCO®		1.4427			
	316LM2	IMCO®	X2CrNiMo 18-14-3	1.4435	316S13	2353	316L
	316LM1		X2CrNiMo 18-14-3	1.4441	4341/B	2354	316L F138gr2
	316LM		X2CrNiMo 18-14-3	1.4435	316S13	2353	316L
	316R		X2CrNiMo 17-12-2	1.4404	316S12	2348	316L
316T/1	IMCO®	X6CrNiMoTi 17-12-2	1.4571	320S31	2350	316Ti	
321/3	IMCO®	X6CrNiTi 18-10	1.4541	321S31		321	
Martensitic grades	410/2		X12Cr13	1.4006	410S21	2302	410
	410/6	IMCO®	X12Cr13	1.4006	410S21	2302	410
	E415		X3CrNiMo 13-4	1.4313	425C12		F6NM
	415M		X4CrNiMo 16-5-1	1.4418		2387	
	416/1	IMCO®	X12CrS13	1.4005	416S21	2380	416
	420A/7	IMCO®	X20Cr13	1.4021	420S29	2303	420L
	420B/4	IMCO®	X30Cr13	1.4028	420S37	2304	420M
	420BF/2	IMCO®	X29CrS13	1.4029	416S37		420F
	420C		X39Cr13	1.4031	420S45		420H
	420C/1		X46Cr13	1.4034			
	420CF	IMCO®	X45CrS13	1.4035			
	420C/4	IMCO®	X46Cr13	1.4034			
	420D		X65Cr13	1.4037			
	420RM1		X39CrMo 17-1	1.4122			
	430F/3	IMCO®	X14CrMoS17	1.4104		2383	430F
	431/1	IMCO®	X17CrNi 16-2	1.4057	431S29	2321	431
440B		X90CrMoV18	1.4112			440B	
440C/2		X105CrMo17	1.4125			440C	
616C		X20CrMoV 12-1	1.4922		2317		
616		X20CrMoWV 12-1	1.4935			422	
Ferritic grades	430/1		X6Cr17	1.4016	430S17	2320	430
	430F/6	IMCO®	X6CrMoS17	1.4105			430F
	434		X6CrMo171	1.4113	4344S17		434
Duplex grades	329/1	IMCO®	X3CrNiMoN 27-5-2	1.4460		2324	329
	329A		X2CrNiMoN 22-5-3	1.4462	318S13		F51 Cr22
	329S		X2CrNiMoCuWN 25-7-4	1.4501			F55
	329S/1		X2CrNiMoN 25-7-4	1.4410			F53 Cr25
Heat resisting grades	310/1		X8CrNi 25-21	1.4845	310S31	2361	310 S
	347		X6CrNiNb 18-10	1.4550	347S31	2338	347
	354		X1CrNiMoCuN 25-18-7	1.4547			F44
Precipitation hardening grades	630/3	IMCO®	X5CrNiCuNb 16-4	1.4542			
	SF286		X6NiCrTiMoVB 25-15-2	1.4980	286S31		660
Super alloy grades	904L		X1NiCrMoCu 25-20-5	1.4539	904S13	2652	904L





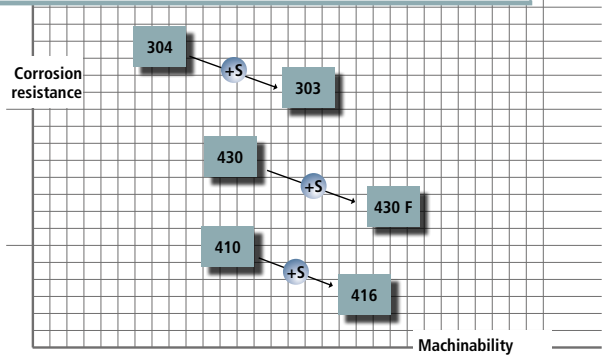
### Project choice parameters

The project parameters takes into consideration corrosion resistance and mechanical characteristics, when making the choice of material.



### Sulphur effect on corrosion and machinability

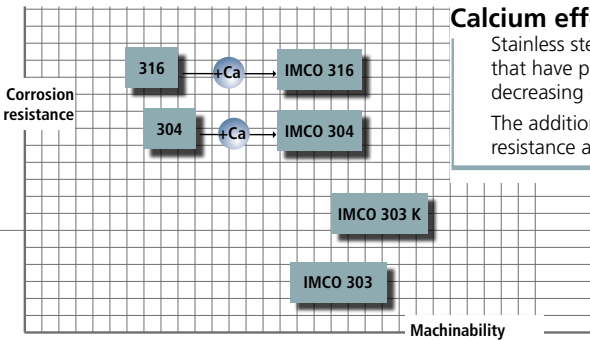
The greatest contribution to improve machinability is obtained by adding sulphur, thereby creating numerous sulphide inclusions that help in the break up of the turnings.



### Calcium effect on corrosion and machinability

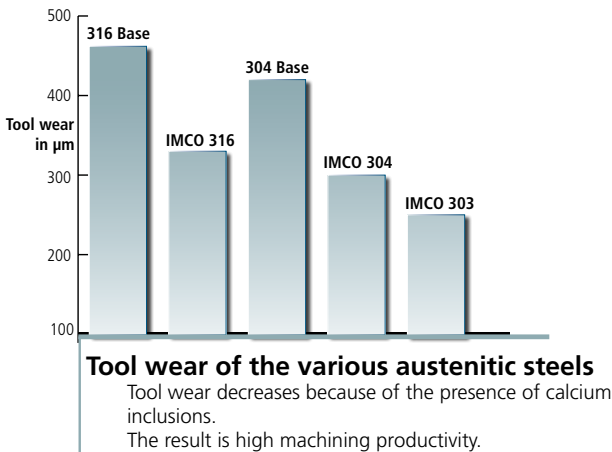
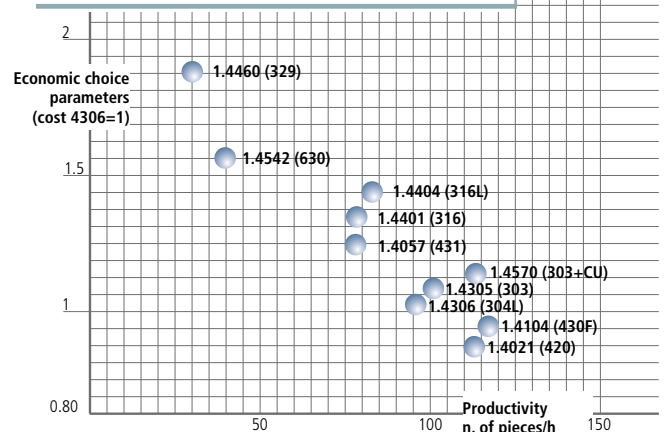
Stainless steel processing with calcium brings about inclusions that have positive effects on the break up of the turnings without decreasing corrosion resistance.

The addition of copper to steel grades 303 and 316 improves corrosion resistance and machinability.



### Economic Choice parameters

A comparison between the various cost parameters of the different stainless steel grades should be taken into consideration in the choice of the steel together with project parameters.



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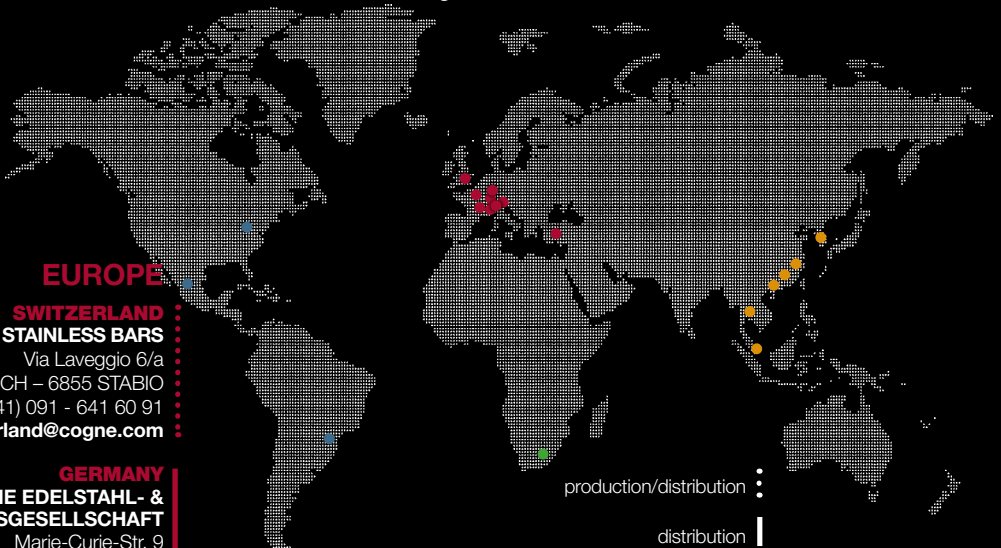
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