



Product Portfolio

01st of October 2018

Product Portfolio – Steel Plant

Portfolio

- More than 400 steel grades
- Close to 300 produced the last 18 months
- Steel grades cover following industries: mechanical, construction, oil and gas, boilers, automotive including bearing steels

Product Portfolio – Steel Plant

Element minimum (%) except * maximum	C	Mn	Si	S	P*	Ni	Cr	Mo	V
Oil and gas application and accessories : Bars & tubes	API5CT carbon steels and chromium steels : L80, P110, T95, 13%Cr, 4140, 4130, Line pipes API5L X52...								
	0.005% to 0.4%	0.3% to 1.4%	0.1% to 2%		0.01%	Up to 6%	0.2% to 13%	0.2% to 2.3%	
Electrical power plants/ Boilers	TÜV products, ASTM grades B, C, T11, T12, T22, T24, T91, T92, S355...								
	0.05% to 0.12%	0.3% to 0.6%	0.1% to 2%		0.01%	0.1% to 1.1%	0.8% to 9%	0.05 % to 1%	0.2%
Bearing steel	100Cr6								
	0.93%	0.3% to 0.7%	0.2%		0.01%		1.3%		
Industry: Automotive, mechanical, construction	Mechanical grades , Resulfurized grades, High yield grades : S355, C45, C55, 50CrMo4, 42CrMo4, 34CrNiMo6, 20Mn4-5-6, 18MnCr5...								
	0.07% to 0.7%	0.3% to 1.6%	Up to 1.3%	Up to 0.2%	0.01%	Up to 4%	Up to 2.5%	Up to 0.85%	Up to 0.24%

Micro alloys possible depending on customer needs : B, Ti, V, Nb, Zr...

Product Portfolio – Steel Plant

Product shape and quality

RCC billets: round 180, 220, 250, 260, 270, 310 and 325 mm. Length : from 4 to 12 meters.

Chemical analysis:

In-house testing with optical emission spectrometer equipments except C, S and N with combustion method.

H measurement in tundish, 2ppm max from the 2nd half of the first of sequence.

Micro cleanliness: based on ISO4967 meth A ; depending on customer needs and as low as (except bearing steels):

Sulfur		Alumina		Silicate		Oxides	
Thin	Thick	Thin	Thick	Thin	Thick	Thin	Thick
=f(S content)		1	0.5	0	0	1	0.5

Oxygen content: up to 10ppm maximum

Product Portfolio – Forge

Product shape and quality

	Minimum diameter (mm)	Maximum diameter (mm)	Minimum length (m)	Maximum length (m)
Input bar	180	270	2,7	6,9
Out bar	140	220	6	12,8

Current use :

- Reduction $\varnothing 220 \rightarrow \varnothing 180$ or $\varnothing 140$
- Reduction $\varnothing 250$ or $\varnothing 270 \rightarrow \varnothing 180$
- Reduction ration up to 3,2

Capability (Need some studies for implementation) :

- From $\varnothing 110$ to $\varnothing 250$ in final diameter
- Possibility of making tubes of form

