Why Traufix implants do not fail?

Stainless steel 316LS ASTM F138 / F139

Chemical properties of stainless steel

Due to **the low carbon content**, 316LS steel is immune to sensitization, a type of **corrosion** that occurs when stainless steel reaches high temperatures.

The increase in **nickel** reduces **magnetism**, improves the **shine** and the finish of the pieces. Molybdenum at a higher concentration gives more resistance to **corrosion.**

IDENTIFICACIÓN / SAMPLE ID

% de Concentración / % Concentration		
	C	0.0220
	Si	0.640
	Mn	1.770
	P	0.0160
	S	0.0050
	Cr	17.65
	Mo	2.73
	Ni	13.66
	Al	0.0150
	Co	0.0390
	Cu	0.0980
	Nb	0.0110
	Ti	<0.0010
	V	0.0830
	W	<0.0050
	B	0.0010
	Fe	Balance

*** STEEL STAINLESSRO INOX 316LS INOX 316LS 4.0 mm x 12.00 mm CURVA**

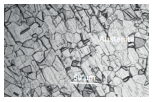
*** COLADA: 039-660306/639-1NO. DE CONTROL C-0004-20.**

Element %	316	316L	316LS
Carbon	0.08 máx	0.03 máx	0.030 máx
Manganese	2.00 máx	2.00 máx	2.00 máx
Phosphorus	0.045 máx	0.045 máx	0.025 máx
Sulfur	0.03 máx	0.03 máx	0.010 máx
Silicon	0.75 máx	0.75 máx	0.75 máx
Chromiun	16.00 - 18.00	16.00 - 18.00	17.00 - 19.00
Nickel	10.00 - 14.00	10.00 - 14.00	13.00 - 15.00
Molybdenum	2.00 - 3.00	2.25 - 3.00	2.25 a 3.00
Nitrogen	0.10 máx	0.10 máx	0.10 máx
Copper	0.50 máx	0.50 máx	0.50 máx
Hierre	Balance	Balance	Balance

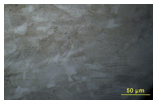
Tipe	Resistance to corrosion	Hardness	Magnetic
Martensitics	Low	High	YES
Ferritics	Good	Medium low	YES
Austenitics (Here is the 316LS used in Traufix)	Excellent	High	NO

Chromium and nickel give the microscopic austenitic phase characteristic of metal 316

Microstructure of 316L



***Microstructure of 316LS**

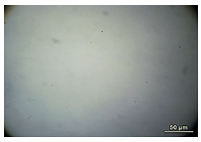


***It is more uniform and free of impurities that affect its mechanical resistance and corrosion.**
***Grain size is critical to mechanical properties.**

Non-metallic inclusions of stainless steel (Contaminants).

Resultados de prueba / Test Results

Vista / View 100X



Vista / View 500X

316LS metal undergoes an electric arc manufacturing process followed by a vacuum arc process to remove impurities.

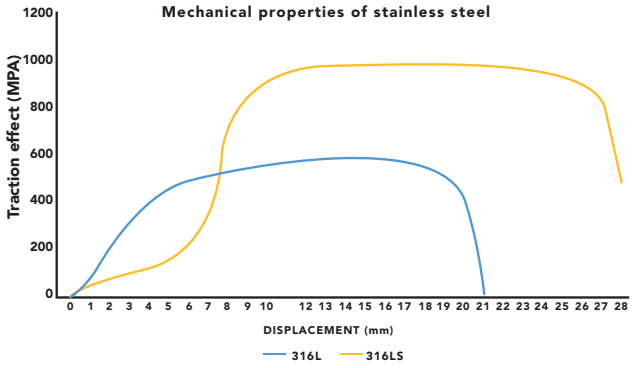
Mecanical properties of stainless steel

Tipo	Yield stress (Mpa)	Tensile Strength (Mpa)	% of elengation
316	206 min.	206 min.	40 min.
316L	172 min.	172 min.	40 min.
316LS	**690 min.**	**690 min.**	**12 min.**

Yield stress – beginning of deformation– Tensile strength – maximum stress before rupture.

Identificación / Sample ID												
ACERO INOX 316LS SOLERA 4.0mm x 12.00mm CURVA COLADA: 039-660306/639-1 NO. DE CONTROL C-0004-20												
Resitencia a la Tracción/Tensile Strength		**Esfuerzo de Cedencia Aproximado/ Approximate yield stress**		**Elogación 50 mm / 50 mm Elongation**	**Ancho / Width**		**Espesor / Thickness**		**Área inicial/ Initial área**		**Carga Máxima/ Max Load**	
Mpa	psi	Mpa	psi	%	mm	in	mm	in	mm^2	in^2	kgF	lbF
977	14176	892	129375	12	11.93	0.470	4.10	0.161	48.91	0.076	4875	10748

Severidad / Severity



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