

## Classifications

EN ISO 14343-A	EN ISO 14343-B	AWS A5.9	Mat. No.
W 18 8 Mn	SSZ307	ER307(mod.)	1.4370

## Characteristics and typical fields of application

Stainless. Resistant to scaling up to 850 °C (1562 °F).

No adequate resistance against sulphurous combustion gases at temperatures above 500 °C (932 °F). For joining and surfacing applications with heat resistant Cr-steels / cast steel grades and heat resistant austenitic steels / cast steel grades. Well suited for fabricating austenitic-ferritic joints – max. application temperature 300 °C (572 °F). For joining unalloyed/low-alloy or Cr-steels / cast steel grades to austenitic steels.

Low heat input required in order to avoid brittle martensitic

## Base materials

TÜV-certified parent metal

1.4583 – X10CrNiMoNb18-12 and included parent metals combined with ferritic steels up to boiler plate P295GH.

High tensile, unalloyed and alloyed structural, quenched and tempered, and armour steels, same parent metal or in combination; unalloyed and alloyed boiler or structural steels with high alloyed Cr and CrNi steels; heat resistant steels up to 850 °C (1562 °F); austenitic high manganese steel with matching and other steels.

Cryogenic sheet metals and pipe steels in combination with austenitic parent metals.

## Typical analysis of the TIG rods (wt.-%)

	C	Si	Mn	Cr	Ni
wt-%	0.08	0.8	7.0	19.0	9.0

**Structure:** Austenite with small amount of ferrite

## Mechanical properties of all-weld metal

Heat-treatment	Yield strength R <sub>p0.2</sub>	Yield strength R <sub>p1.0</sub>	Tensile strength R <sub>m</sub>	Elongation A (L <sub>0</sub> =5d <sub>0</sub> )	Impact work ISO-V KV J
	MPa	MPa	MPa	%	+20 °C
aw	450	500	620	35	100

Operating data				
<b>Polarity:</b> DC ( - )	<b>Shielding gas:</b> (EN ISO 14175) I1	<b>Marks:</b> ✦ W 18 8 Mn / 1.4370	<b>ø (mm)</b> 1.0 1.6 2.0 2.4 3.2	<b>L mm</b> 1000 1000 1000 1000 1000
Welding instruction				
<b>Materials</b>	<b>Preheating</b>	<b>Postweld heat treatment</b>		
Heat resistant Cr-steels / cast steel grades	According to wall thickness: 150 – 300 °C (302 - 572 °F)	Tempering at 750 °C (1382 °F) not necessary if service temperature is the same or higher		
Heat resistant CrNi steels	None	None		
Joining of CrNi(MoN) austenitic steels to unalloyed / low-alloy steels / cast steel grades	According to ferritic parent metal, mostly not necessary	No Postweld heat treatment >300°C (572 °F) – risk of carbide precipitation at grain boundaries in the weld fusion zone, loss of toughness, fracturing		
Joining of CrNi(MoN) austenitic steels to stainless and heat-resistant Cr-steels / cast steel grades	According to ferritic parent metal	According to parent metals. Attention must be paid to the intercrystalline corrosion resistance and embrittlement susceptibility of the austenitic metal side		
Approvals				
TÜV (01234), DB (43.132.26), DNV, CE				