

## Classifications

EN ISO 12153	AWS A5.34	AWS A5.34M
T Ni 6625 P M21 2	ENiCrMo3T1-4	TNi6625-14

## Characteristics and typical fields of application

Nickel-base flux cored wire with rutile filling for high-end welds of high Mo alloyed nickel-base alloys (for example Inconel 625 and Incoloy 825) as well as CrNiMo-steels with high Mo content (such as „6 Mo“steels).

Moreover it is useable for creep resistant and high temperature steels, heat resistant and cryogenic materials, mixed structures and low alloyed difficult-to-weld steels. It is designed for applications in pressure boiler fabrication for temperatures from  $-196^{\circ}\text{C}$  ( $-320.8^{\circ}\text{F}$ ) to  $550^{\circ}\text{C}$  ( $1022^{\circ}\text{F}$ ), apart from that up to scale resistance to scaling up to  $1200^{\circ}\text{C}$  ( $2192^{\circ}\text{F}$ ) (S-free atmosphere). It is advisable to avoid this temperature range because of embrittlement of base material between  $600^{\circ}\text{C}$  ( $1112^{\circ}\text{F}$ ) and  $850^{\circ}\text{C}$  ( $1562^{\circ}\text{F}$ ).

High resistance to hot cracking, additionally c-diffusion at high temperatures or heat treatment of dissimilar joints is almost inhibited. Weld metal features extremely high resistance to stress corrosion cracking and pitting corrosion (PREN 52). It is thermal shock resistant, stainless, fully austenite. It's coefficient of expansion when welding C steels and austenitic CrNi(Mo) steels is low. Useable for out-of-position welding.

## Base materials

- 1.4876 – Alloy 800 – UNS N08800 – X10NiCrAlTi32-21  
1.4958 – Alloy 800H – UNS N08810 – X5NiCrAlTi31-20  
2.4816 – Alloy 600 – UNS N06600 – NiCr15Fe  
2.4856 – Alloy 625 – UNS N06625 – NiCr22Mo9Nb  
2.4858 – Alloy 825 – UNS N08825 – NiCr21Mo

Joints of above mentioned materials with unalloyed and low alloyed steels for example:  
P265GH, P285NH, P295GH, 16Mo3, S355N, X8Ni9, N 08926, ASTM A 553 Gr.1, Alloy 600,  
Alloy 625, Alloy 800, 9% Ni-steels

### Typical analysis of all-weld metal (wt.-%)

	C	Si	Mn	Cr	Mo	Ni	Nb	Fe	Gas
wt-%	0.05	0.4	0.4	21.0	8.5	Bal.	3.3	< 1.0	M21

**Structure:** Austenite

### Mechanical properties of all-weld metal

Heat-treatment	Shielding gas	Yield strength R <sub>p0.2</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	%	+20 °C	−196 °C
aw	M21	450	690	30	47	32

## Operating data

	<b>Polarity:</b> DC ( + )	<b>Shielding gas:</b> (EN ISO 14175) M21 Consumption: 15 – 18 l/min	<b>ø (mm)</b> 1.2	<b>Spool</b> B300	<b>Amps A</b> 125 – 230	<b>Voltage V</b> 22 – 28
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