

## Classifications

<b>EN ISO 14172</b>	<b>AWS A5.11 / SFA-5.11</b>
E Ni 6625 (NiCr22Mo9Nb)	ENiCrMo-3

## Characteristics and typical fields of application

Basic coated nickel-base electrode of E Ni 6625 / ENiCrMo-3 type for welding the nickel-base alloys 625 and 825 as well as CrNiMo-steels with high molybdenum content (e.g. 6% Mo-steels). Also recommended for high temperature and creep resistant steels, heat resistant and cryogenic materials, dissimilar joints and low-alloyed problem steels. Suitable in pressure vessel fabrication for  $-196^{\circ}\text{C}$  to  $550^{\circ}\text{C}$ , otherwise for service temperatures up to  $1000^{\circ}\text{C}$ . Resistant to scaling up to  $1100^{\circ}\text{C}$  (in sulfur-free atmosphere). Due to the weld metal embrittlement at  $600 - 800^{\circ}\text{C}$ , this temperature range should be avoided. Highly resistant to hot cracking and thermal shock. Extremely resistant to stress corrosion cracking and pitting ( $\text{PRE}_n \geq 52$ ). Fully austenitic. Excellent welding characteristics in all positions except vertical-down, with easy slag removal and high resistance to porosity.

## Base materials

Suitable for welding of nickel-base alloys, dissimilar welding of dissimilar steels and difficult-to-weld combinations including low-temperature steels up to 9% Ni, high-temperature and creep resistant materials, scaling resistant, unalloyed and high-alloyed Cr and CrNiMo stainless steels

1.4529 X1NiCrMoCuN25-20-7, 1.4547 X1CrNiMoCuN20-18-7, 1.4558 X2NiCrAlTi32-20, 1.4580 X6CrNiMoNb17-12-2, 1.4583 X10CrNiMoNb18-12, 1.4876 X8NiCrAlTi32-21, 1.4877 X6NiCrNbCe32-27, 1.4958 X5NiCrAlTi31-20, 1.5662 X8Ni9, 2.4816 NiCr15Fe, 2.4817 LC-NiCr15Fe, 2.4641 NiCr21Mo6Cu, 2.4856 NiCr22Mo9Nb, 2.4858 NiCr21Mo  
 ASTM A 553 Gr.1, Alloy 600, Alloy 600 L, Alloy 625, Alloy 800 / 800H, Alloy 825  
 UNS N06600, N07080, N0800, N0810, N08367, N08926, S31254  
 254 SMO®

## Typical analysis


	C	Si	Mn	Cr	Ni	Mo	Nb	Fe
wt.-%	0.03	0.4	0.6	22.0	Bal.	9.0	3.3	< 1.0

## Mechanical properties of all-weld metal - typical values (min. values)

Condition	Yield strength $R_{p0.2}$	Tensile strength $R_m$	Elongation A ( $L_0=5d_0$ )	Impact energy ISO-V KV J	
	MPa	MPa	%	$20^{\circ}\text{C}$	$-196^{\circ}\text{C}$
u	520 ( $\geq 420$ )	790 ( $\geq 760$ )	42 ( $\geq 27$ )	81	62 ( $\geq 32$ )

u untreated, as-welded

## Operating data

	<b>Polarity</b>	DC+	<b>Dimension mm</b>	<b>Current A</b>
	<b>Electrode identification</b>	Thermanit 625 E Ni 6625 (NiCr-22Mo9Nb)	2.5 x 300	50 – 65
			3.2 x 350	70 – 95
			4.0 x 350	90 – 120
			5.0 x 400	120 – 160

Suggested heat input is max. 1.5 kJ/mm and interpass temperature max.  $100^{\circ}\text{C}$ .

To minimize risk of solidification cracking, stringer beads are recommended using a short arc and any weaving should not exceed 2.5 x the diameter of the core wire.

Creep rupture properties according to matching high temperature steels / alloys.

Re-drying if necessary at  $250 - 300^{\circ}\text{C}$  for min. 2 – 3 h.

## Approvals

TÜV (03463), DNV