# BÖHLER NIBAS 625 PW-FD

Flux cored wire, nickel base

## Classifications

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

## Characteristics and typical fields of application

Rutile flux cored wire for high-quality joint welding of nickel-base alloys like Alloy 625 and Alloy 825 as well as of CrNiMo stainless steels with high Mo-content (e.g. "6Mo" steels). Additionally it is recommended for high-temperature or creep resisting, heat resisting and cryogenic materials, joining of dissimilar steels, and also for problem steels. Can be used for pressure vessel fabrication for service temperatures in the –196 °C to +550 °C range, otherwise up to scaling resistance limit of +1200 °C (S-free atmosphere). Due to the weld metal embrittlement between 600 – 850 °C, this temperature range should be avoided. Highly resistant to hot cracking; furthermore, C-diffusion at high service temperatures or during post weld heat treatment of dissimilar steels is largely inhibited. Extremely resistant to stress corrosion cracking and pitting ($PRE_N$ 52). Resistant to thermal shocks, fully austenitic. Low coefficient of thermal expansion (between C-steels and austenitic CrNi (Mo) steel). Good weld ability in all positions.

## Base materials

2.4856 NiCr 22 Mo 9 Nb, 2.4858 NiCr 21 Mo, 2.4816 NiCr 15 Fe, 1.4583 X10CrNiMoNb18-12, 1.4876 X 10 NiCrAlTi 32 20 H, 1.4876 X 10 NiCrAlTi 32 20, 1.4529 X1NiCrMoCuN25-20-7,

X 2 CrNiMoCuN 20 18 6, 2.4641 NiCr 21 Mo 6 Cu,

Joint welds of listed materials with non alloy and low alloy steels, e.g 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.-%)

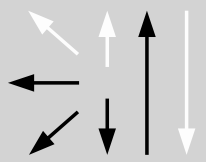
| | C | Si | Mn | Cr | Mo | Ni | Nb | Fe |
|---|---|---|---|---|---|---|---|---|
| wt.-% | 0.05 | 0.4 | 0.4 | 21.0 | 8.5 | Bal. | 3.3 | < 1.0 |

## Mechanical properties of all-weld metal

| Condition | Yield strength $R_{p0,2}$ | Tensile strength $R_m$ | Elongation A ($L_0$=5$d_0$) | Impact work ISO-V KV J | |
|---|---|---|---|---|---|
| | MPa | MPa | % | +20 °C | –196 °C |
| u | **500** (≥ 420) | **740** (≥ 690) | **40** (≥ 25) | **90** | **80** (≥ 32) |

u untreated, as welded – shielding gas Argon + 20 % $CO_2$

## Operating data



| Polarity: | Shielding gases: | ø (mm) | Amps A | Voltage V |
|---|---|---|---|---|
| DC ( + ) | Argon + 15 – 25 % $CO_2$ | 1.2 | 150 – 250 | 22 – 28 |

Welding with standard GMAW-facilities possible, slightly trailing torch position (angel appr. 80°), The gas flow should be 15 – 20 l/min

## Approvals

TÜV (11223.), CE