# VDM® FM 622

N06022 (UNS) · 2.4635 (Material No.)

VDM® FM 622 is a nickel-chromium-molybdenum filler material with a low carbon content for the seam welding of homogeneous alloys in the area of wet corrosion applications. It is also used for the corrosion-resistant weld cladding of steam generator pipes for various fuels.

## Designations & standards

| | |
|---|---|
| ISO 18274 | S Ni 6022, NiCr21Mo13Fe4W3 |
| AWS A5.14 | ERNiCrMo-10 |
| VdTÜV | Data sheet no. 11245, 11246 |

## Typical chemical composition, values in %

| Ni | Cr | Fe | C | Mo | Others |
|---|---|---|---|---|---|
| Bal. | 22 | 2.5 | < 0.01 | 14 | W 3.3; Al 0.1 |

## Mechanical properties at ambient temperature

| Yield strength $R_{p\,0.2}$ (MPa) (Ksi) (Ksi) | Tensile strength $R_m$ (MPa) (Ksi) (Ksi) | **Elongation** $A_5$ (%) | **ISO V-notch impact strength** (J) (ft-lbs) |
|---|---|---|---|
| > 310 (> 44.9) | > 690 (> 100) | > 30 | > 70 (> 51.6) |

## Applications

Filler material for the welding of VDM® Alloy C-4, VDM® Alloy C-276 and VDM® Alloy C-22 together, as well as for dissimilar material joints with suitable high- and low-alloyed steels. Particularly suitable also for weld cladding on carbon steel due to its excellent corrosion properties and good weldability.

**Special notes for the welding process**
A low heat input and fast heat removal must be ensured. The interpass temperature should not exceed 150 °C (302 °F). When using the gas-shielded metal-arc process, pulsed welding is the preferable method. No preheating or reheating is required to achieve the weld metal properties.

Example welding processes and parameters for homogeneous seam welding in Position 1G

| Welding process as per ISO 4063 | Shielding gas as per ISO 14175 | Welding parameters | | |
|---|---|---|---|---|
| | | U (V) | I (A) | V (cm/min) (in/min) |
| **m-TIG** 141, 145 | I1, R1 max. 2 % $H_2$ | 10–12 | 90–140 | 11–16 4.33–6.30 |
| *Comment* | *Root welding up to 110 A* | | | |
| **v-TIG** 141, 145 | I1, R1 max. 2 % $H_2$ | 11–12 | 150–180 | 20–30 7.87–11.8 |
| **v-TIG HW** 141 H, 145 H | I1, R1 max. 2 % $H_2$ | 11–12 | 180–220 | 40–80 15.7–31.5 |
| **MSGp** (MAG) 135 | Z-ArHeHC, 30/2/0.05 | 23–27 | 130–150 | 25–30 9.84–11.8 |
| *Comment* | *from approx. 8 mm (0.315 in) work piece thickness* | | | |
| **Plasma (PAW)** 15 | I1, R1 max. 2 % $H_2$ | ≈ 25 | 180–220 | 25–30 9.84–11.8 |
| *Comment* | *up to approx. 8 mm (0.315 in) work piece thickness* | | | |