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*			