

VDM® FM 61

N02061 (UNS) • 2.4155 (Material No.)



VDM® FM 61 is a pure nickel filler material with a titanium additive for seam welding nickel and weld cladding on steel, frequently as a buffer layer. Due to its high corrosion resistance in saline solutions and alkalis, it is often used in the chemical industry.

Designations & standards

ISO 18274	S Ni 2061, NiTi 3
AWS A5.14	ERNi-1, ABS
VdTÜV	Data sheet no. 00948, 00949

Typical chemical composition, values in %

Ni	Ti
95	3.3

Mechanical properties at ambient temperature

Yield strength $R_{p0.2}$ (MPa) (Ksi)	Tensile strength R_m (MPa) (Ksi)	Elongation A_5 (%)	ISO V-notch impact strength (J) (ft-lbs)
> 200 (> 29)	> 410 (> 59.5)	> 25	> 100 (> 73.8)

Applications

Filler material for the welding of VDM® Alloy 205, VDM® Alloy 201, VDM® Alloy 200, nickel manganese and pure nickel roll-clad or explosive-clad steels. Also usable for weld cladding on carbon steel.

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 pre-heating or reheating is required to achieve the weld metal properties. The welding process should be particularly carefully screened using shielding gas. VDM® FM 61 is also suitable for the submerged arc process.

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	l1, R1 max. 3 % H ₂	10–12	90–140	11–16 4.33–6.30
<i>Comment</i>	<i>Root welding up to 110 A</i>			
v-TIG 141, 145	l1, R1 max. 3 % H ₂	11–12	150–180	20–30 7.87–11.8
v-TIG HW 141 H, 145 H	l1, R1 max. 3 % H ₂	11–12	180–220	40–80 15.7–31.5
MSGp (MIG/MAG) 131, 135	l1, l3-ArHe 30, Z-ArHeHC 30/2/0.05	23–27	130–150	25–30 9.84–11.8
<i>Comment</i>	<i>from approx. 8 mm (0.315 in) work piece thickness</i>			
Plasma (PAW) 15	l1, R1 max. 3 % H ₂	≈ 25	180–220	25–30 9.84–11.8
<i>Comment</i>	<i>up to approx. 8 mm (0.315 in) work piece thickness</i>			



Please note that this filler material requires special protection against humidity.