

VDM® FM 82

N06082 (UNS) · 2.4806 (Material No.)



VDM® FM 82 is a versatile nickel-chromium filler material for the joint welding of high-temperature and heat-resistant chromium-nickel steels and nickel alloys. It is frequently used in industrial oven construction and for steam generators.

Designations & standards

ISO 18274	S Ni 6082, NiCr20Mn3Nb
AWS A5.14	ERNiCr-3, SAE AMS 5836, ABS
VdTÜV	Data sheet no. 00880, 00881

Typical chemical composition, values in %

Ni	Cr	Mn	Nb	Fe	Ti
Bal.	21	3.2	2.5	1	0.4

Mechanical properties at ambient temperature

Yield strength $R_{p0.2}$ (MPa) (Ksi) (Ksi)	Tensile strength R_m (MPa) (Ksi) (Ksi)	Elongation A_5 (%)	ISO V-notch impact strength (J) (ft-lbs)
> 420 (> 60.9)	> 640 (> 92.8)	> 30	> 200 (> 148)

Applications

Filler material for the welding of VDM® Alloy 600/600 H and VDM® Alloy 800/800 H/800 HP. Creep values for homogeneous welds with VDM® Alloy 600/600 H are available. Additional material combinations and fields of application available on request.

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. The material can also be processed using 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	I1, 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	I1, R1 max. 3 % H ₂	11–12	150–180	20–30 7.87–11.8
v-TIG HW 141 H, 145 H	I1, R1 max. 3 % H ₂	11–12	180–220	40–80 15.7–31.5
MSGp (MIG/MAG) 131, 135	I1, I3-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	I1, 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>			