

VDM® FM 67

C71581 (UNS) · 2.0837 (Material No.)



VDM® FM 67 is a cupronickel filler material for seam welding cupronickel materials and the weld cladding of cupronickel materials on steel. It possesses good corrosion resistance in brine and is therefore frequently used in marine engineering.

Designations & standards

ISO 24373	S Cu 7158, CuNi30Mn1FeTi
AWS A5.7	ERCuNi, ABS
VdTÜV	Data sheet no. 01622, 01623

Typical chemical composition, values in %

Cu	Ni	Mn	Fe	Ti	C
Bal.	31	0.7	0.6	0.4	< 0.05

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)
> 200 (> 29)	> 360 (> 52.2)	> 30	> 80 (> 59.0)

Applications

Filler material for the welding of VDM® Alloy CuNi 70-30, VDM® Alloy CuNi 80-20, VDM® Alloy CuNi 90-10 and steels that are roll clad or explosive clad with these Cu-Ni alloys. Also suitable for weld cladding on carbon steel, whereby a buffer layer of VDM® FM 61 or, in some cases, also of VDM® FM 60 should be used.

Special notes for the welding process

A low heat input and fast heat removal must be ensured. The interpass temperature should not exceed 120 °C (248 °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	l1, R1 max. 3 % H ₂	10–11	90–120	10–15 3.94–5.91
<i>Comment</i>	<i>Root welding at approx. 90 A</i>			
v-TIG 141, 145	l1, R1 max. 3 % H ₂	11–12	≈ 150	≈ 25 ≈ 9.84
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	165–200	≈ 25 ≈ 9.84
<i>Comment</i>	<i>up to approx. 8 mm (0.315 in) work piece thickness</i>			