

Basic low hydrogen electrode – AWS A5.1/ASME SFA-A5.1: E7018-1 H4R

Key Benefits

- Excellent welding properties, weld bead appearance and arc strike performance.
- Excellent mechanical properties at low temperatures: -60°C (-76°F).
- Meets H4 weld metal hydrogen requirements and has low moisture absorption abilities.
- Produces tough and crack free weld metal
- Certificates with lot specific chemical composition of weld metal as well as lot specific mechanical properties

Conformity and Approvals

AWS A5.1:	ER7018-1 H4R
ASME SFA-A5.1:	ER7018-1 H4R
CWB/CSA W48-14:	E4918-1-H4
EN ISO2560-1:	E 42 6 B 42 H5
ABS:	3YH10
BV:	3Y
DNV:	3YH5
LR:	3YSH5
TÜV:	1153:2012

Typical applications

- Heavy steel structures
- Pressure vessels
- Pipes
- Shipbuilding
- Petrochemical
- Energy and power generation

Welding Positions



Mechanical Properties as per AWS A5.1/ASME SFA-A5.1: E7018-1 H4R

	Yield Strength MPa (ksi)	Tensile Strength MPa (ksi)	Elongation %	Impact Energy J (ft = lbf)
Requirements - AWS E7018-1 H4R				
As welded	400 (58) min	490 (70) min.	22 min.	27J at -46°C (20 lbf at -50°F)
Typical Results (all weld metal)				
As welded	500 (72)	570 (82)	26	90J at -46°C (66 lbf at -51°F)
As Welded	500 (72)	570 (82)	26	70J at -60°C (51 lbf at -76°F)

All weld metal composition as per AWS A5.1/ASME SFA-A5.1: E7018-1 H4R

	%C	%Mn	%Si	%S	%P	%Ni
Requirements - AWS E7018-1 H4R	0.15 max	1.60 max	0.75 max	0.35 max	0.035 max	0.30 max
Typical all-weld-metal composition	0.08	1.18	0.49	0.006	0.013	0.03
	%Cr	%Mo	%V	%Mn+Ni+Cr+Mo+V	Diffusible Hydrogen (mL/100g weld metal)	
Requirements - AWS E7018-1 H4R	0.20 max	0.30 max	0.08 max	1.75 max	4.0 max	
Typical all-weld-metal composition	0.058	0.009	0.009	1.29	2-3	