

**ROYALFIL GS 12 ESR (E71T-12MJ)**

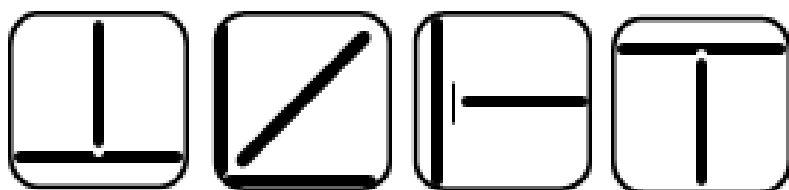
AWS A / SFA 5.20 E71T-12 MJ

**Applications**

It is used for all position single and multipass welding of tank, pressure vessels where stress relieving is necessary. This wire is especially useful in welding of nozzle neck of carbon steel, pressure vessel, where low temp. service is required.

**Characteristics on Usage**

Royalfil GS-12ESR is a Titania base all position flux core welding wire designed for optimum performance when using 80% Ar + 20% CO<sub>2</sub> shield. It gives smooth metal transfer with excellent flat bead, least spatter and easy slag removal. The weld deposits content 0.5 % Ni while retaining excellent impact properties at low temp. service even after stress relieving. Weld metal is of radiographic quality.

**Welding Positions**

1G

2F

3G

4G

**Chemical Composition Of Weld Metal**

Element	C%	Mn%	Si%	S%	P%	Ni %
As Welded*	0.052	1.38	0.48	0.006	0.015	0.42
StressRelieved * (620±10°C for 3Hrs.)	0.048	1.42	0.48	0.007	0.014	0.44
StressRelieved (620±10°C for 8 Hrs.)	0.046	1.34	0.46	0.009	0.016	0.42
Spec Reqd.	0.12 Max	1.60 Max	0.90 Max	0.030 Max	0.030 Max	0.50 Max

**Mechanical Properties Of Weld Metal**

Property	U.T.S. (N/mm <sup>2</sup> )	Y.S. (N/mm <sup>2</sup> )	ELONGATION ( L = 4d ) %	IMPACT (CVN) AT -40 °C ( J )
As welded*	590	520	26	70
Stress relieved*(620 ± 10°C for 3 Hrs.)	560	470	30	75
Stress relieved(620 ± 10°C for 8 Hrs.)	520	420	28	65
Spec.Reqd.	490-620	390 Min	22 Min	27 Min

**Welding Parameters (DC + VE)**

Diameter (mm)	Flat & Horizontal (A)	Flat & Horizontal (V)	Vertical - Up (A)	Vertical - Up (V)	Overhead (A)	Overhead (V)
1.20	180-250	26-30	120-210	22-26	150-200	26-30
1.60	210-280	26-30	160-250	22-27	190-240	26-30

**Approvals**

ABS - GR.4YH5-SA

**Packing**

15 kgs. vacuum packed plastic spool.

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