

Main characteristics of Fe-Cr-Al high resistance and electric heating alloys

Alloy Nomenclature		1Cr13Al4	0Cr25Al5	0Cr21Al6	0Cr23Al5	0Cr21Al4	0Cr21Al6Nb	0Cr27Al7Mo ₂
Performance								
Main Chemical composition	Cr	12.0-15.0	23.0-26.0	19.0-22.0	20.5-23.5	18.0-21.0	21.0-23.0	26.5-27.8
	Al	4.0-6.0	4.5-6.5	5.0-7.0	4.2-5.3	3.0-4.2	5.0-7.0	6.0-7.0
	Re	opportune	opportune	opportune	opportune	opportune	opportune	opportune
	Fe	Rest	Rest	Rest	Rest	Rest	Rest	Rest
							Nb0.5	Mo1.8-2.2
Max. continuous service temp.		950	1250	1250	1250	1100	1350	1400
Resistivity at 20°C (μΩ·m)		1.25	1.42	1.42	1.35	1.23	1.45	1.53
Density (g/cm ³)		7.40	7.10	7.16	7.25	7.35	7.10	7.10
Thermal conductivity (KJ/m·h·°C)		52.7	46.1	63.2	60.2	46.9	46.1	45.2
Coefficient of lines expansion (α×10 ⁻⁶ /°C)		15.4	16.0	14.7	15.0	13.5	16.0	16.0
Melting point (approx.)(°C)		1450	1500	1500	1500	1500	1510	1520
Tensile strength (N/mm ²)		580-680	630-780	630-780	630-780	600-700	650-800	680-830
Elongation at rupture (%)		>16	>12	>12	>12	>12	>12	>10
Variation of area (%)		65-75	60-75	65-75	65-75	65-75	65-75	65-75
Repeat bending frequency (F/R)		>5	>5	>5	>5	>5	>5	>5
Hardness (H.B.)		200-260	200-260	200-260	200-260	200-260	200-260	200-260
continuous service time (Hours/ °C)		--	≥80/1300	≥80/1300	≥80/1300	≥80/1250	≥50/1350	≥50/1350
Micrographic structure		Ferrite	Ferrite	Ferrite	Ferrite	Ferrite	Ferrite	Ferrite
Magnetic properties		Magnetic	Magnetic	Magnetic	Magnetic	Magnetic	Magnetic	Magnetic

