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GEE LIMITED

*Celebrating 50 years
of unmatched welding solutions.*

WELD DIRECTORY



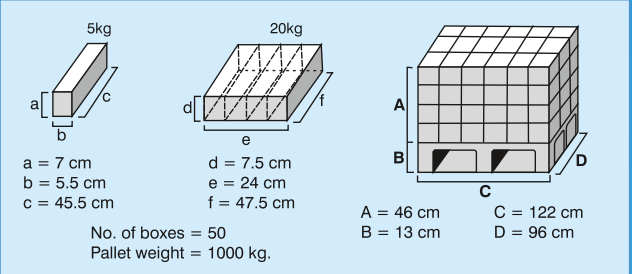
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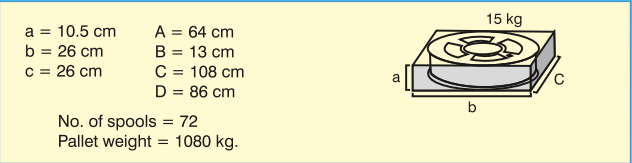


Gee Standard Packing

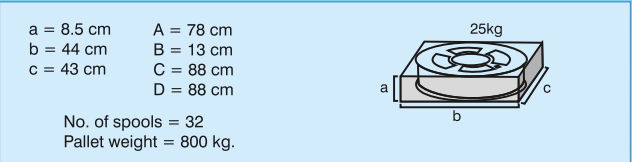
Covered Electrodes



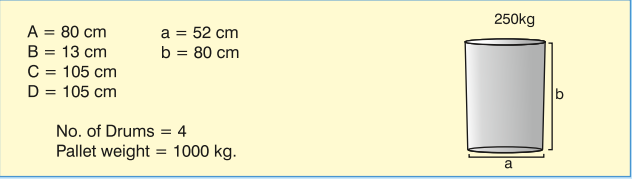
MIG Wire & FCW



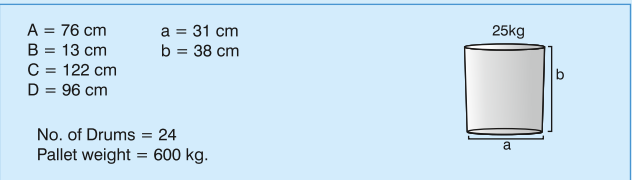
SAW Wire



Pail Pack



SAW Flux



The Power Behind
The Most Powerful Bonds

Welcome to the versatile world of Welding Solutions.

Welcome to



An ISO 9001:2000 company, **GEE Limited** started its journey of excellence in 1969 and ever since has maintained a steady pace of growth with clear focus on customer delight and innovation. This future-ready approach has also inspired us to transform our brand equity into a new progressive identity of **GWELD – Seal of Trust**.

Each of the products mentioned in this catalogue is an evidence of our passion for innovation that keeps on driving us to formulate need-specific welding solutions for the unique demands from various sectors. **GEE's** chemists, metallurgists and technical experts meticulously analyze customers' welding problems and arrive at solutions in terms of welding procedures and new formulations in welding consumables wherever required. Today, GWELD's unmatched expertise in welding technology and metallurgy driven by in-house R&D and global networking and documentation systems can solve any complex welding problems. In this process we also create new knowledge on an on-going basis to enrich the welding industry.



The impeccable quality of GWELD brand of electrodes, wires and fluxes along with the competence to serve your specific needs will make you build a long-lasting professional bonds with us

- Proud associates for welding solutions of world's tallest structure 'BURJ KHALIFA', Dubai
- Global presence with massive exports to practically every country across 5 continents
- Approvals from reputed international agencies like DNV, ABS, LRS, BV, GL, Class NK, IRS, BHEL, RDSO, NTPC, IOCL
- Rated one of India's 100 fastest growing small companies by The Economic Times Survey 2009
- Highly-graded in CRISIL ratings
- A BSE-listed company (soon to be listed on the NSE)

Product Name	Classification AWS/SFA	Typical Chemical Composition of deposited weld metal (%)						Mechanical Properties of Weld Metal Range				APPLICATIONS
		C	Mn	Si	S	P	OTHERS	UTS/ Mpa	YS/ Mpa	EL% (L=4d)	IMPACT/ J	
Flux-Cored Wires												
GFC - 71	E71T - 1C	0.04	1.29	0.49	0.009	0.01	N. A.	580	550	25	-20°C 47J	All position welding of ships, bridges, machinery, vehicles
GFC - 75	E71T - 5C	0.06	1.39	0.39	0.014	0.013	N. A.	620	570	26	-30°C 70J	Welding of mild and high tensile strength steels for ships, bridges and heavy plants
GFC - 308L	E308LT1 - 1.4	0.03	1.45	0.65	0.01	0.025	Cr=19.5 Ni=10	550	N. A.	45	-20°C 60J	Welding of 18c R/8 Ni type of stainless steel
GFC - 309L	E309LT1 - 1.4	0.03	1.3	0.65	0.01	0.025	Cr=23 Ni=12.5	590	N. A.	40	-20°C 50J	Welding of dissimilar steels, carbon steels, low alloy and stainless steels
GFC - 316L	E316LT1 - 1.4	0.03	1.2	0.7	0.01	0.025	Cr=18 Ni=12 Mo=2.5	590	N. A.	40	-20°C 50J	Welding of stainless steel and dissimilar steels
GFC - 347	E347T1 - 1.4	0.04	1.2	0.8	0.01	0.025	Cr=19.5 Ni=10 Mo=0.40	610	N. A.	45	-20°C 60J	Welding of stainless steel, boilers and gas turbines

Product Name	AWS / SFA	C	Mn	Si	Cr	Ni	Mo
Mig Wires							
GM - 70	ER 70s - 6	0.07 - 0.12	1.40 - 1.85	0.80-1.15	-----	-----	-----
GEMIG 307	ER 307	0.10 max	4.0 - 7.0	0.30 - 0.65	18 - 21	7.5 - 9.5	0.75 max
GEMIG 308L	ER 308L	0.03 max	1.0 - 2.5	0.30 - 0.65	19.5 - 21	9 - 11.0	0.75 max
GEMIG 309L	ER 309L	0.03 max	1.0 - 2.5	0.30 - 0.65	23 - 25	12 - 14	0.75 max
GEMIG 309MoL	ER 309MoL	0.03 max	1.0 - 2.5	0.30 - 0.65	23 - 25	12 - 14	2.0-3.0
GEMIG 316L	ER 316L	0.03 max	1.0 - 2.5	0.30 - 0.65	18 - 20	11 - 14	2.0-3.0
GEMIG 430	ER 430	0.10 max	0.60 max	0.50 max	15.5 - 17.0	0.60 max	0.75 max
GEMIG 715	ER Cu Al-A2	Al = 9.0 - 11.0	Zn = 0.02 max	0.10 max	Fe = 0.75-1.5	Pb = 0.07 max	Cu = Remainder
GEMIG 4043	ER 4043	Al = Balance	0.05 max	4.5 - 6.0	Zn = 0.02 max	Fe = 0.80 max	Cu = 0.30 max
GEMIG 702	ER Cu Si-A	Cu = Remained	1.50 max	2.8 - 4.0	Zn = 0.02 max	Fe = 0.80 max	Sn = 1.0 max

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Product Name	Wire	Classification AWS / SFA	Application
Saw Wire & Flux Combination			
GEEFLUX 505	GEE SAW E18 / EM12K	F7 A (P)Z-EL8 F7 A (P)O-EM12K F8 A (P)O-EM12K	Agglomerated Alumina - Basic Type Flux for Welding Pressure Vessels, Pipe Steels, Fine Grained Steel, Structural Steels etc.
GEEFLUX 541	GEE SAW EA2-A2 GEE SAW EA3-A3 GEE SAW EH14 GEE SAW EH10K GEE SAW EM12K	F8 A (P)2-EA2-A2 F8 A (P)2-EA3-A3 F7 A (P)2-EH14 F7 A (P)4-EH10K F7 A4 EM12K	Agglomerated fluoride basic type flux recommended for welding medium tensile steels
GEEFLUX 544	GEE SAW EM 12K GEE SAW EM12K GEE SAW EH12K GEE SAW EH12K GEE SAW EH10K GEE SAW EF2-F2 GEE SAW EF3-F3	F7 A4 EM12K F7A5 EM12K F7A(P)5 EH12K F7A(P)8 EH12K F7A(P)5 EH10K F9A(P)5 EF2-F2 F9A EF3-F3	Agglomerated rutil Alumina type flux for simple & multi layer welds of Structural Steels.
GEEFLUX 303	GEE SAW ER 308L / GEE SAW ER 309L / GEE SAW ER 316L / GEE SAW E347	F7 A (P)2-EH14 / EH10K	Agglomerated flux for welding of various grades of austenitic stainless steel such as AISI 304, 304L 316L, 347 etc.
GEEFLUX 376	GEE SAW ER 308L / GEE SAW ER 316L /	N. A.	Agglomerated flux for welding of austenitic stainless steels, type AISI 304 & 316L for cryogenic applications. Excellent impact properties at - 196°C
			
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Product Name	Classification AWS/SFA	Typical Chemical Composition of deposited weld metal (%)					Mechanical Properties of Weld Metal Range				APPLICATIONS
		C	Mn	Si	S	P	UTS/ Mpa	YS/ Mpa	EL% (L= 4d)	IMPACT/ J	
Mild Steel Electrodes											
GRICON WHITE	E6010		0.3	0.10	-----	-----	460	390	22	-30°C	High cellulose deep penetration X-ray quality welds on low & high pressure pipes
		0.14	0.6	0.4	0.03	0.03	550	470	30	50-80	
GRICON VIOLET	E6011	0.06	0.3	0.10	-----	-----	460	390	22	-30°C	Steel sheets, pipes, general fabrication
		0.14	0.6	0.4	0.03	0.03	570	490	30	50-80	
GEECON GREY	E6012	-----	0.35	0.15	-----	-----	470	390	22	0°C	Corroded & tarnished steel; general fabrication
		0.10	0.55	0.35	0.03	0.03	550	490	28	50-100	
GRICON RED	E6013	-----	0.35	0.15	-----	-----	450	390	22	0°C	Structural steels fabrication work, pipe welding, storage tanks, etc.
		0.12	0.55	0.3	0.03	0.03	550	460	28	50-100	
GRICON BLACK	E6013	-----	0.35	0.15	-----	-----	460	360	22	0°C	Highly stressed joints, steel structures, pipelines, general fabrication
		0.12	0.5	0.3	0.03	0.03	550	470	28	50-90	
GEECON PINK	E6013	-----	0.35	0.12	-----	-----	460	370	22	0°C	Radiographic quality welding of boilers, pipelines,pressure vessels, storage tanks, etc.
		0.1	0.6	0.3	0.03	0.03	550	480	30	50-100	
GRICON BLUE	E6013	0.05	0.3	0.18	-----	-----	460	370	24	0°C	Radiographic quality welding of boilers, pipelines, pressure vessels, storage tanks, etc.
		0.10	0.65	0.4	0.03	0.03	550	480	30	50-100	
GRICON LOWSIL	E6013 (Nearest)	-----	0.20	-----	-----	-----	400	340	20	27+2°C	Fabrication and repair of hot dip galvanising baths
		0.09	0.6	0.05	0.03	0.03	480	430	min	50-100	
GRICON GOLD	E7024	0.05	0.45	0.20	-----	-----	500	430	24	0°C	Radiographic quality welding of heavy structural steels. Deposition efficiency 140%
		0.10	0.85	0.4	0.03	0.03	600	520	28	50-90	

Product Name	Classification AWS/SFA	Chemical Properties of Weld Metal (%) Range						Mechanical Properties of Weld Metal Range				APPLICATIONS
		C	Mn	Si	S	P	OTHERS	UTS /M Pa	YS /M Pa	EL% (L= 4d)	IMP./J	
Low Hydrogen Electrodes												
GEECON PURPLE	E7016	0.04	0.8	0.2	-----	-----	Ni-0.3max, Mo-0.3max Cr-0.2max, V-0.08max Mn+Ni+Cr+Mo+V=1.75max	510	440	24	-30°C	Medium high tensile steel, pressure vessels, boilers, welding metal of unknown composition
		0.10	1.6	0.75	0.03	0.03		610	540	30	60-120	
GEECON PURPLE (SPL)	E7016-1	0.04	0.8	0.2	-----	-----	Ni-0.3max, Mo-0.3max Cr-0.2max, V-0.08max Mn+Ni+Cr+Mo+V=1.75max	510	440	24	-45°C	Medium high tensile steel, pressure vessels, boilers, welding metal of unknown composition
		0.10	1.6	0.75	0.03	0.03		610	540	30	40-120	

Product Name	Wire	Hardness & Alloy Basis	Application
Tubular Electrodes			
GEECOR 10	Low heat input hardfacing tubular electrode having excellent abrasion resistance properties	Hardness on 2 layer deposit: 55 to 60 Rc	Impellers casting, conveyor chains, bulldozer cutting edges etc.
GEECOR 20	Low heat input hardfacing tubular electrode having excellent abrasion resistance properties	Alloy basis: C, Cr, Mo, B, V hardness: 59 to 63 Rc	Fan blades, liner plates, abrasive slurry mixers etc.
GEECOR 40	Tungsten carbide tubular electrode for high pressure abrasion	Alloy basis: C, Co, W hardness: 56 to 63 Rc	Rock drills, oil well drills, pug mill augers and knives, choppers, mixers etc.
GEECOR 80	Tungsten carbide tubular electrode for high pressure abrasion	Alloy basis: C, Cr, Ni, Si hardness: 57 to 61 Rc	Arcing of sugarcane crusher rolls.
GEECOR 90	Complex carbide tubular electrode to resist abrasion at high temperature	Alloy basis: C, Cr, Mo, V hardness: 59 to 63 Rc	Coal burner nozzles, linker conveyor chains, railway tampers, etc.
GEECOR 404	Low heat input hardfacing tubular electrode for highly abrasion resistant cladding subjected to extremely sliding mineral abrasion	Alloy basis: Mo, W, Nb, C, V hardness: Single layer- 59 to 63 Rc / Multi-63-67Rc	Working parts of steel mills, sliding mineral surfacing on earth moving equipments
GEECOR 505	Tubular electrode for joining & surfacing of high strength grades of cast iron	Alloy basis: 10 to 14% Mn in Ni - Fe system	Filling cavities in cast irons, correction machining errors, repair and surfacing of high strength grades of cast iron



Product Name	Classification AWS/SFA	Chemical Properties of Weld Metal (%) Range										APPLICATIONS
		C	Mn	Si	S	P	Cr	Ni	Mo	Cu	Others	
Tig Filler Wires												
GETIG 308H	ER 308H	0.04 0.08	1 2.5	0.3 0.65	----- 0.03	----- 0.03	19.5 22	9 11	----- 0.75	----- 0.75	-----	For welding ASTM A304 / A304L steel, 321 & 347 stainless steel
GETIG 309L	ER 309L	----- 0.03	1 2.5	0.3 0.65	----- 0.03	----- 0.03	23 25	12 14	----- 0.75	----- 0.75	-----	Buffer layer on mild and low alloy steel joining type, 304 / 304L, 347, 321, 316/316L. Duplex stainless steel dissimilar
GETIG 309 MoL	ER 309 MoL	----- 0.03	1 2.5	0.3 0.65	----- 0.03	----- 0.03	23 25	12 14	2.0 3.0	----- 0.75	-----	Buffer layer on mild and low alloy steel joining type, 304 / 304L, 347, 321, 316/316L. Duplex stainless steel
GETIG 310	ER 310	0.08 0.15	1 2.5	0.3 0.65	----- 0.03	----- 0.03	25 28	20 22.5	----- 0.75	----- 0.75	-----	For joining difficult-to-weld steels such as armour plate, ferritic stainless steels as well as dissimilar steels in furnace and heat treatment equipment
GETIG 312	ER 312	----- 0.15	1 2.5	0.3 0.65	----- 0.03	----- 0.03	28 32	8 10.5	----- 0.75	----- 0.75	-----	Buffer layer on mild and low alloy steel joining type, 304 / 304L, 347, 321, 316 / 316L. Duplex stainless steel
GETIG 316L	ER 316L	----- 0.03	1 2.5	0.3 0.65	----- 0.03	----- 0.03	18 20	11 14	2.0 3.0	----- 0.75	-----	Suitable for welding ASTM 316 / 316L as well as Nb or Ti stabilised stainless steel
GETIG 316H	ER 316H	0.04 0.08	1 2.5	0.3 0.6	----- 0.03	----- 0.03	18 20	11 14	2.0 3.0	----- 0.75	-----	For welding similar alloys also used in application involving special alloys for high temperature services
GETIG 318	ER 318	----- 0.08	1 2.5	0.3 0.65	----- 0.03	----- 0.03	18 20	11 14	2.0 3.0	----- 0.75	Nb-8X%C MIN/1.0%MAX	ASTM/ASME type 316Ti, 316Cb, CF 10 MC
GETIG 347	ER 347	----- 0.08	1 2.5	0.3 0.65	----- 0.03	----- 0.03	19 21.5	9 11	----- 0.75	----- 0.75	Nb-10 X %C MIN/1.0% MAX	Suitable for welding AISI 321, 347 & 348 type grade that are commonly used in refinery and petrochemical industries
GETIG 702	ER Cu Si-A	----- 1.5	0.5 1.5	2.8 4	-----	-----	-----	-----	-----	94 -----	Fe - 0.3 max, Zn - 0.2 max, Sn - 1.0 max	Joining alloys, brass CuMn2, CuSi2Mn, CuSi3Mn, galvanised steels, surfacing mild steel, low alloy steels and cast iron
GETIG 904L	ER 385	----- 0.025	1 2.5	0.25 0.65	----- 0.015	----- 0.015	19.5 21.5	24 26	4.2 5.2	-----	Cu-1.20-2.0	Corrosion resistance steels of 904L type ASTM UNS No-8094, DIN-1.4500, 1.4539 widely used in chemical process plants
GETIG 811	ER Ni Cu-7	----- 0.15	----- 4	----- 1.25	----- 0.015	----- 0.02	-----	62 69	-----	Rema- inder	Al - 1.25 max, Fe - 2.5 max, Ti - 1.5-3.0	For joining and surfacing of Ni-Cu clad steel
GETIG 812	ER Cu-Ni	----- 0.5- 1.0	----- 0.20 max	----- 0.01	----- 0.01	-----	-----	30 32	-----	Rema- inder	Al - 1.25 max, Fe - 2.5 max, Ti - 1.5-3.0	For welding similar cupro nickel alloys
GETIG 821	ER Ni Cr-3	----- 0.1	2.5 3.5	0.2- 0.5	----- 0.015	----- 0.03	18 22	67 -----	----- 0.5	-----	Nb+Ta-2.0-3.0 Fe-3.0 max Ti - 0.75 max	For welding 5% and 9% Ni-steels for cryogenic applications
GETIG 625	ERNiCr Mo3	----- 0.05 max	----- 0.5 max	----- 0.50 max	----- 0.015 max	----- 0.015 max	20 23	60 min	8 10	----- 0.50 max	Nb+Ta-3.15- 4.15 Fe-5.0 max Ti - 0.4max, Al-0.4max	For welding high Ni alloys for furnace parts for welding 6.0% Mo super austenitic stainless steels
GETIG 3276	ER Ni Cr Mo4	----- 0.02	----- 1.0 max	----- 0.08 max	----- 0.03	----- 0.04	14.5 16.5	Rema- inder	15 17	----- 0.50	W-3.0-4.5 Fe-4.0-7.0 Co-2.5max, V-0.35max	For cladding steel with Ni-Cr-Mo weld metal

Product Name	Classification AWS/SFA	Chemical Properties of Weld Metal (%) Range						Mechanical Properties of Weld Metal Range				APPLICATIONS
		C	Mn	Si	S	P	OTHERS	UTS /M Pa	YS /M Pa	EL% (L=4d)	IMP/J	
Low Hydrogen Electrodes												
GREICON GREEN	E7018	0.04	0.8	0.30	-----	-----	Ni-0.3max, Mo-0.3max Cr-0.2max, V-0.08max Mn+Ni+Cr+Mo+V=1.75max	510	440	24	-30°C	Radiographic quality welding of ships, boilers and pressure vessels Deposition efficiency 110% minimum
		0.10	1.6	0.70 max.	0.03	0.03		610	540	30	60-140	
GRICON GREEN (SPECIAL)	E7018-1	0.04	0.8	0.2	-----	-----	Ni-0.3max, Mo-0.3max Cr-0.2max, V-0.08max Mn+Ni+Cr+Mo+V=1.75max	510	440	24	-46°C	Radiographic quality welding of ships, boilers and pressure vessels. High impact strength at -46°C
		0.10	1.6	0.45 max.	0.025	0.03		610	540	30	50-120	
GRICON GREEN NC	E7018-1 NACE GRADE	0.04	0.8	0.20	-----	-----	Ni-0.3max, Mo-0.3max Cr-0.2max, V-0.08max Mn+Ni+Cr+Mo+V=1.75max	510	440	24	-46°C	Radiographic quality welding of Nace grade pipes, process platforms and pressure vessels. High impact strength at -46°C
		0.10	1.4	0.5	0.01	0.015		610	540	30	40-120	
GRICON GREEN (SPL) H4R (VAC PACK)	E7018-1 H4R	0.04	1.0	0.2	-----	-----	Ni-0.10max, Mo-0.08max Cr-0.08max, V-0.02max Mn+Ni+Cr+Mo+V=1.75max	510	440	22	-46°C	The electrode deposits weld metal, which is of radiographic quality and meets impact requirements at -46°C
		0.09	1.6	0.5	0.025	0.025		690	570	30	55-110	

Product Name	Classification AWS/SFA	Chemical Properties of Weld Metal (%) Range						Mechanical Properties of Weld Metal Range				APPLICATIONS
		C	Mn	Si	S	P	OTHERS	UTS /M Pa	YS /M Pa	EL% (L=4d)	IMP/J	
High Tensile Low Alloy Steel Electrodes												
GRIDUCT - 2	E-7018 A1	0.05-	0.5-	0.2-	0.03	0.03	Mo=0.40-0.65	490	440	25-30	0°C	Fine grained and creep resistant steel, chemical process plants
		0.12	0.9	0.8	max	max		590	540		70-160	
GRIDUCT - 3	E8018 B2	0.05-	0.5-	0.8	0.03	0.03	Mo=0.40-0.65, Cr=1.0-1.50	550	480	19-26	0°C	Radiographic quality welding of fine grained and creep resistant steel, Cr-Mo alloy steels
		0.12	0.9	max	max	max		690	590		50-100	
GRIDUCT - 4	E9018 B3	0.05-	0.4-	0.25	0.03	0.03	Mo=0.9-1.25, Cr=2.0-2.5	620	550	18-24	27±2°C	Radiographic quality welding of fine grained and creep resistant steel, Cr-Mo alloy steels
		0.12	0.9	0.6	max	max		740	620		40-90	
GRIDUCT - 5	E7018 G	0.04-	0.9-	0.2-	0.03	0.03	Ni=0.4-0.85	480	440	24-30	-50°C	For impact at sub-zero (up to -50°C) temperature for welding heavy sections and stressed joints etc.
		0.09	1.5	0.55	max	max		580	550		40-100J	
GRIDUCT - 6	E8018 G	0.045	1.0-	0.2	0.025	0.03	Ni=0.5-1.0 Cu=0.2-0.4	550	460	22-28	-20°C	For impact at sub-zero (up to -30°C) temperature high tensile fine grained steels
		0.09	1.7	0.5	max	max		650	560		70-150J	
GRIDUCT - 8	E11018 G	0.045	1.3-	0.5	0.03	0.03	Ni=2.0-2.5, Mo=0.3-0.5, Cr=0.15-0.25	700	630	19-25	0°C	High tensile, fine grained steels, HSLA, Q & T steels, HY-80, etc.
		0.095	1.8	max	max	max		840	740		30-90	
GRIDUCT - 8M	E11018 M	0.10	1.3-	0.2-	0.02	0.03	Ni=1.25-2.5, Mo=0.25-0.5 Cr=0.25-0.4 V=0.05 max	760	680	20 min	-51°C	Penstock, high tensile steels, used for heavy steel fabrication. ASTM A517 Grade F
		max	1.8	0.6	max	max		min	760		27J	

Product Name	Classification AWS/SFA	Chemical Properties of Weld Metal (%) Range						Mechanical Properties of Weld Metal Range				APPLICATIONS
		C	Mn	Si	S	P	OTHERS	UTS /M Pa	YS /M Pa	EL% (L=4d)	IMP- ACT/J	
High Tensile Low Alloy Steel Electrodes												
GRIDUCT - 9	E9018 G	0.08 max	1.0- 1.65	0.2- 0.6	0.03 max	0.03 max	Ni=1.0-1.8 Mo=0.2-0.5	630 690	550 590	17-22	-50°C 40-95J	High tensile low alloy steels, quenched and tempered steels
GRIDUCT - 66W	E7016	0.04- 0.1	0.6- 1.2	0.20 0.55	0.03 max	0.03 max	Ni=0.3 max Mo=0.3 max Cr=0.2 max V=0.08 max	480 580	430 500	22-30	-30°C 50-120J	For welding / joining carbon steels to C-Mn steels
GRIDUCT - 78C2L	E7018 C2L	0.05 max	1.25 max	0.50 max	0.03 max	0.03 max	Ni=3.0-3.75	480 min	390 min	25 min	-100°C 40-100J	Construction of cryogenic plant and associated pipe work, e.g. petrochemical industry
GRIDUCT - 88C1	E8018 C1	0.12 max	1.25 max	0.80 max	0.03 max	0.03 max	Ni=2.0-2.75	550 min	460 min	24-30	-60°C 35-80J	Fabrication of storage tanks, process plant and associated pipework eg. petrochemical industry
GRIDUCT - 88C2	E8018 C2	0.08 max	0.50- 1.0	0.20- 0.50	0.020 max	0.025 max	Ni=3.0-3.75	560 650	470 560	19-26	-80°C 35-80	Offshore fabrication, fabrication of storage tanks, process plant and associated pipework and petrochemicals industries
GRIDUCT - 88C3	E8018 C3	0.12 max	0.8- 1.25	0.20- 0.50	0.020 max	0.025 max	Cr=0.15 max, Mo=0.35 max Ni=0.8-1.10, V=0.05 max	550 650	470 550	24-30	-50°C 50-120	Welding of higher strength steel structure where post-weld heat- treatment is impracticable, offshore construction, pressure vessels, pipelines etc.
GRIDUCT - 88D3	E8018 D3	0.05- 0.12	1.0- 1.80	0.20- 0.70	0.015 max	0.020 max	Ni=0.90 max, Mo=0.40-0.65	560 670	460 560	20-28	-51°C 30-70	For welding low alloy steel AISI 4130, 4140 for the repair and fabrication of manganese molybdenum casting. Pressure vessels, forgings, castings
GRIDUCT - 88W2	E8018-W2	0.04- 0.12	0.70- 1.3	0.35- 0.8	0.03 max	0.03 max	Cr=0.45-0.70, Cu=0.3-0.75 Ni=0.4-0.8, V=0.05 max	550 700	460 590	19-26	-18°C 27 min	For welding weathering steels type Cor-Ten A, Cor-Ten B or equivalent steels
GRIDUCT - 98G	E9018G	0.09 max	1.0- 1.5	0.20- 0.45	0.02 max	0.025 max	Cu=0.10 max, Mo=0.3-0.50 Ni=0.8-1.45	620 780	550 640	18-24	-40°C 27 min	For welding high tensile steels for pressure vessels and other applications where high strength is maintained after extended PWHT cycles such as normalizing and stress relieving
GRIDUCT - 98M	E9018M	0.10 max	0.60- 1.25	0.20- 0.80	0.03 max	0.03 max	Cr=0.15 max, Mo=0.20-0.35 Ni=1.40-1.80, V=0.05 max	620 min	540 min	24 min	-51°C 27 min	For welding high tensile steels used for pressure vessels and other applications

Product Name	Classification AWS/SFA	Typical Chemical Composition of deposited Weld Metal (%)							APPLICATIONS
		C	Mn	S	P	Ni	Fe	Cu	
Cast Iron, Non Ferrous & Others									
GRICAST - CN	ENi-Cu-B	1.0	-----	0.03	0.03	66	3	30	Monel based cast iron welding-machinable
GRICAST - NF	ENi-Fe-C1	0.50	0.75	0.03	0.03	53	45	0.5	Ferro-nickel cast iron welding-machinable
GRICAST - N	ENi-C1	1.0	-----	0.03	0.03	98	1.5	0.50	Pure nickel deposit cast iron welding
GRICAST - LH	E St	-----	-----	-----	-----	-----	-----	-----	Non-machinable welding of cast iron
GRINI	ENi-Cu-7	0.08	4.0 max	0.015	0.02	62-69	2.50 max Ti= 1.0max	28	Welding NiCu alloys such as monel
GRICU - 2	ECu-SnA	-----	-----	0.03	0.2-0.35	Sn 5 to 7%	-----	93	For welding tin, bronze and copper
GRICON CUT				CUTTING ELECTRODE					For cutting and piecing
GRICON GOUGE				GOUGING ELECTRODE					For gouging

Product Name	Classification AWS/SFA	Chemical Properties of Weld Metal (%) Range										APPLICATIONS
		C	Mn	Si	S	P	Cr	Ni	Mo	Cu	Others	
Tig Filler Wires												
GETIG 70S-G	ER 70S - G	----- 0.1	1.3 1.7	0.4 0.75	----- 0.03	----- 0.03	-----	-----	-----	----- 0.5	-----	For general purpose Tig Welding
GETIG 70-S2	ER 70S - 2	----- 0.07	0.9 1.4	0.4 0.70	----- 0.02	----- 0.025	-----	-----	-----	----- 0.5	Zr-0.02-0.12, Al-0.05-0.15 Ti-0.05-0.15	For welding structural pressure vessels and boilers involving micro alloyed structural steels Impact at -30°C
GETIG 70-S2 (SPL)	ER 70S - 2	----- 0.07	0.9 1.4	0.4 0.70	----- 0.015	----- 0.020	-----	-----	-----	----- 0.5	Zr-0.02-0.12, Al-0.05-0.15 Ti-0.05-0.15	For welding structural steel pressure vessels -35 joules at (-45°C) Meets NACE requirement
GETIG 80S-B2	ER 80S-B2	0.07 0.12	0.4 0.7	0.4 0.7	----- 0.025	----- 0.025	1.2 1.5	----- 0.20	0.4 0.65	----- 0.35	-----	For welding of creep resisting steel
GETIG 80S-B6	ER 80S - B6	----- 0.1	0.4 0.7	----- 0.75	----- 0.025	----- 0.025	4.5 6	----- 0.6	0.45 0.65	----- 0.35	-----	For welding 5% Cr / 0.5% Mo steel
GETIG 80S-B8	ER 80 S - B8	----- 0.1	0.4 0.7	----- 0.5	----- 0.025	----- 0.025	8 10.5	----- 0.5	0.8 1.2	----- 0.35	-----	For welding 9% Cr / 1.0% Mo steel
GETIG 90S-B3	ER 90 S- B3	0.07 0.12	0.07 0.12	0.4 0.7	----- 0.025	----- 0.025	2.3 2.7	----- 0.2	0.9 1.2	----- 0.35	-----	For welding 2.4% Cr / 1.0% Mo steel
GETIG 308L	ER 308L	----- 0.03	----- 1-2.5	----- 0.3 0.65	----- 0.02	----- 0.03	19.5 22	9.0 11	----- 0.75	----- 0.75	-----	For welding ASTM A304/A304L steel, 321 & 347 stainless steel

Product Name	Classification AWS/SFA	Typical Chemical Composition of deposited weld metal (%)							Mechanical Properties of Weld Metal Range			APPLICATIONS
		C	Mn	Si	Cr	Ni	Mo	Cu	UTS/ Mpa	EL% (L=4d)	IMPACT/ J	
Stainless Steel Electrodes												
GRINOX - 134LN	E410NiMo-15	0.038	0.9	0.4	12.4	4	0.55	N=0.12-0.25	HARDNESS 380-420 BHN	N. A.	0°C 47J min	For rebuilding of continuous casting rolls, slab caster rolls, straightening and leveling rolls, crane wheels, gear wheels, bearing and shaft housing
GRINOX - 175	E630 -16	0.10 max	1.0 max	0.8 max	14.0-16.5	3.5-4.5	N A.	1.5-2.5	1034	10	N. A.	Pump shafts, impellers, hydraulic equipments, oil and gas industries, petrochemical plants, marine and nuclear engineering
GRINOX - 134L	E410NiMo-16	0.06 max	1.0 max	0.90 max	11.0-12.5	4.0-5.0	0.4-0.7	0.75 max	760-940	15-20	0°C 50-80J	For welding hydraulic turbines, valve bodies, pump bowls, compressor cones
GRINOX - 2553	E2553-16	0.025-0.06	0.5-1.5	1.0 max	24.0-27.0	6.5-8.5	2.9-3.9	N=0.12-0.25 Cu=1.5-2.5	760-860	20-25	0°C 45-80J	For welding of super duplex stainless steel pumps and valve, corrosion / wear resisting parts and process equipment for use in offshore oil and gas industries, pulps & paper mill
GRIBINOX - 320	E320 - 15	0.07 max	1.0-2.50	0.3 max	19.0-21.0	32.0-36.0	2.0-3.0	Cu=3.0-4.0 Nb=8XC% 1.0 max	550-650	30-40	N. A.	Tanks, Process Piping, Heat exchangers, Agitators and Rotors. Cast Pumps for use in the chemical processing, metal cleaning and pickling industries

Note : Also available in Gribinox (E-XXX-15) & Gritinox (E-XXX-17)

Product Name	Classification AWS/SFA	Chemical Properties of Weld Metal (%) Range						Mechanical Properties of Weld Metal Range				APPLICATIONS
		C	Mn	Si	S	P	OTHERS	UTS /M Pa	YS /M Pa	EL% (L= 4d)	IMP- ACT/J	
High Tensile Low Alloy Steel Electrodes												
GRIDUCT - 98D1	E9018-D1	0.04- 0.10	1.25- 1.75	0.25- 0.60	0.025 max	0.025 max	Ni=0.90 max, Mo=0.25-0.45	630 780	550 670	16-25	-51°C 30-70J	Fabrication of higher strength steels for offshore oil well head process pipe work and fittings. Repair of medium strength low alloy steel castings
GRIDUCT - 108D2	E10018D2	0.05- 0.15	1.60- 2.00	0.20- 0.8	0.030 max	0.030 max	Ni=0.90 max, Mo=0.25-0.45	690 min	620 min	16 min	-51°C 30-80	For welding low alloy steel AISI 4130, 4140 for repair and fabrication of
GRIDUCT - 138G	E12018G	0.05- 0.10	1.20- 1.80	0.30- 0.60	0.025	0.025	Cr=0.70, Mo=0.60 Ni=2.0-2.60, V=0.05 max	830 min	740 min	14 min	-27°C±2 70-140J	For welding Q & T high tensile type HY 130 and equivalent normalised + tempered fine grain structural steels with yield stress up to 900 Mpa
GRIDUCT - 5350	E12015G	0.070- 0.15	1.30- 1.85	0.20- 0.60	0.03 max	0.03 max	Cr=2.1-3.3, Mo=1.2-1.65 Ni=1.8-2.50	940 1120	800 900	16-20	-27°C±2 30-60J	Surfacing / rebuilding hot forging dies, repairing hot working tools, surfacing hammer dies etc. For reclamation and surfacing of hot forging dies
GRIDUCT - B2L	E7018-B2L	0.050 max	0.5- 0.9	0.2- 0.8	0.03 max	0.03 max	Cr=1.0-1.5, Mo=0.4-0.65	530 650	390 500	19-26	-27°C±2 55-100J	For welding Cr-Mo alloy steels, boilers, pressure vessels, oil refineries
GRIDUCT - B3L	E8018-B3L	0.050 max	0.5- 0.9	0.2- 0.55	0.003 max	0.03 max	Cr=2.0-2.5 Mo=0.9-1.20	570 650	460 580	17-25	0°C 30-90J	For welding Cr-Mo alloy steel, coal liquification plants, pressure vessels, oil refineries
GRIDUCT - B6	E8018-B6	0.05- 0.10	0.5- 1.0	0.20- 0.50	0.03 max	0.03 max	Cr=4.0-6.0 Mo=0.45-0.65 Ni=0.40 max	580 690	460 590	19.24	-0°C 70-120J	For welding creep resistant steel in chemical and petrochemical plants
GRIDUCT - B8	E8018-B8	0.05- 0.10	0.50- 1.00	0.25- 0.65	0.030 max	0.030 max	Cr=8.0-10.0, Mo=0.9-1.20 Ni=0.40 max	550 670	460 560	19-25	27±2°C 30-80J	For elevated temperature service upto 600°C



Product Name	Classification AWS/SFA	Typical Chemical Composition of deposited Weld Metal (%)						Mechanical Properties of Weld Metal Range	APPLICATIONS
		C	Mn	Si	S	P	OTHERS	Hardness	
For Hardfacing									
GRIDUR - 250	N. A.	0.10 max	0.50- 1.3	0.35 0.80	0.03 max	0.03 max	Cr=0.40-0.75 Mo=1.0-1.5 Ni=0.4-0.8	HARDNESS 225-275 BHN	Impact and abrasion resistant hardfacing of machine parts made out of mild steel, structural steels and case steel. Rails, couplings, rollers, pulleys, wheel rims, conveyor screws, axles, shafts, hammers etc.
GRIDUR - 350	N. A.	0.15- 0.30	0.40- 0.80	0.18 0.40	0.03 max	0.03 max	Cr=2.0-3.0	HARDNESS 330-425 BHN	Abrasion and impact resistant hardfacing of steel, structural steels and cast steel. Steel mill parts, couplings, rollers, conveyors
GRIDUR - 600 R	N. A.	0.5- 0.8	0.5- 1.5	1.0 max	0.03 max	0.03 max	Cr=7.0-9.0 Mo=0.5 max V=0.5 max	HARDNESS 550-600 BHN	Abrasion-proof hardfacing machine parts subjected to impact friction rolling, air-hardenable
GRIDUR - 555	N. A.	2.10- 2.90	0.80- 1.20	2.2- 3.60	0.03 max	0.03 max	Cr=2.90-4.0	HARDNESS ON 3-LAYER DEPOSIT : 576-610 BHN	Oil expeller worms, concrete mixer blades, scrapper blades, screw conveyors, cement die rings, Muller tyres, ploughshares, dippers, excavator teeth, etc
GRIDUR TLK	EFe5-B	0.50- 0.90	0.30- 0.60	0.25- 0.70	0.03 max	0.03 max	Cr=3-5, Mo=7-9.5 V=0.8-1.30 W-1.0-2.50	HARDNESS AS WELDED 570-610 BHN	Cutting and piercing tools, dies and drills, punches and knives, ingot tongs blanking dies, hear blades, milling tools, rolling mill guides etc.
GRIDUR - M	N. A.	1.2 1.4	12.0- 14.0	0.35 0.50	0.03 max	0.03 max	N. A.	HARDNESS AS WELDED 170-220 BHN HARDNESS AFTER COLD WORKING:400-500 BHN	Abrasion-proof hardfacing of different parts made out of mild steel, structural steels, austenitic manganese, hard steel and cast steel which are loaded by impact friction and rolling
GRIDUR - 35	N. A.	4.35	1.0	1.0	0.03 max	0.03 max	Cr=33-37	HARDNESS 2 LAYRES 570-610 BHN	Suitable for hardfacing wear parts subject to mineral abrasion such as conveyor screws, mixer blades, concrete pump parts, slurry pumps, crusher parts, excavator bucket edges, coal planes subject to corrosion at elevated temperatures
GEECON - 650 LH	N. A.	0.45- 0.65	0.4 1.2	0.7 1.6	0.03 max	0.03 max	Cr=7-9 Mo=0.4-0.7	HARDNESS 580-630 BHN	High hardness resistant to extra abrasion, impact resistant



Product Name	Classification AWS/SFA	Typical Chemical Composition of deposited weld metal (%)							Mechanical Properties of Weld Metal Range			APPLICATIONS
		C	Mn	Si	Cr	Ni	Mo	Cu	UTS/ Mpa	EL% (L=4d)	IMPACT/ J	
Stainless Steel Electrodes												
GRINOX - 4	E308-16	0.08 max	0.50- 2.5	0.30- 1.00	18.0- 21.0	9.0- 11.0	0.75 max	0.50 max	550-650	35min	0°C 70-100	For welding 18% Cr, 10%Ni steel including 301, 302, 303, cast steel Cf3, Gf8
GRINOX - 4L	E308L - 16	0.04 max	0.5- 2.5	0.35- 1.00	18.0- 21.0	9.0- 11.0	0.75 max	0.50 max	550-650	35min	0°C 70-100	Extra low carbon 18% Cr / 10% Ni stainless steel
GRINOX - 9	E-309 -16	0.09 max	0.5- 2.5	0.30- 1.00	22-25 14.0	12.0- 14.0	0.75 max	0.50 max	550 min	30 min	0°C 70-100	For welding 23% Cr / 13% Ni stainless steel and welding of dissimilar metals
GRINOX - 9L	E309L - 16	0.04 max	0.5- 2.5	0.30- 1.00	22-25 14.0	12.0- 14.0	0.75 max	0.50 max	520-660	30 min	0°C 70-100	Extra low carbon 23% Cr / 13% Ni stainless steel and welding of dissimilar metals
GRINOX - 10	E310 - 16	0.08- 0.16	1.0- 2.5	0.75 max	25-28 22.50	20.0- 22.50	0.75 max	0.50 max	550-660	30 min	0°C 70-100	25% Cr / 20% Ni stainless steel
GRINOX - 16	E316 - 16	0.08 max	0.5- 2.5	0.30- 0.90	17.0- 20.0	11.0- 14.0	2.0- 3.0	0.50 max	520 min	30 min	0°C 70-100	For welding 18% Cr,12% Ni, 2.5% Mo steel including CF3M, CF8M, pulp & paper mill equipments, paint & dye industries etc.
GRINOX - 16L	E316L - 16	0.04 max	0.50- 2.50	0.30- 0.90	17.0- 20.0	11.0- 14.0	2.0- 3.0	0.50 max	490 min	30 min	0°C 70-100	Extra low carbon 18% Cr 12% Ni 2.5% Mo stainless steel
GRINOX - 9Mo	E309Mo -16	0.08 max	0.5- 2.5	0.9 max	22.0- 25.0	12.0- 14.0	2.0- 3.0	0.50 max	550-660	30 min	0°C 70-100	For welding 23% Cr, 13% Ni, 2.5% Mo steel, difficult-to-weld steel
GRINOX - 9MoL	E39MoL -16	0.04 max	0.5- 2.5	0.30- 0.70	22.0- 25.0	12.0- 14.0	2.0- 3.0	0.50 max	520-660	30 min	0°C 70-100	For welding 23% Cr, 13% Ni,2.5% Mo steel, difficult-to-weld steel welding of dissimilar metals
GRINOX - 9Cb	E309Cb -16	0.10 max	0.5- 2.5	0.9 max	22.0- 25.0	12.0- 14.0	Cb= 0.7- 1.0	0.50 max	550-640	30 min	0°C 70-100	For joining stainless steel types AISI 304, 304L etc.
GRINOX - 12	E312 -16	0.15 max	0.5- 2.5	0.40- 0.90	28.0- 32.0	8.0- 10.5	0.75 max	0.50 max	600-850	30 min	0°C 70-100	High carbon hardenable tool, die and spring steels, 13% Mn steels, free cutting steels, high temperature steels, dissimilar joints between stainless and high carbon steels, surfacing metal-to- metal
GRINOX - 18	E318 -16	0.08 max	1.0- 2.5	0.9 max	17.0- 20.0	11.0- 14.0	2.0- 3.0	Cb= 6XC 1.0max	550-640	30 min	0°C 60-100J	For welding 18% Cr, 9% Ni, 3% Mo steel, difficult-to-weld steel
GRINOX - 47	E347 -16	0.08 max	0.70- 2.50	0.90 max	18.0- 21.0	9.0- 11.0	Cb= 8XC 1.0max	0.50 max	520-640	30 min	0°C 70-120J	For welding stainless steel types 321, 347 and 304
GRINOX - 41N	E410 - 16	0.08 max	0.35- 0.80	0.25- 0.55	11- 13.5	0.60 max	0.50 max	0.50 max	520-690	20 min	HARDNESS 325-380 BHN	Cast valve bodies, turbine parts, burner nozzles, run-out rolls in steel mills, hydro cracker reaction vessels, furnace parts suitable for surfacing mild and low alloy steels
GRINOX - 43N	E430 - 15	0.1 max	0.25- 0.90	0.25- 0.65	15-18	0.60 max	0.60 max	0.3 max	460-640	20 min	HARDNESS 200-280 BHN	Surfacing valves, suitable for welding Cr-Si-Al steels (Sicranals) with upto 18% Cr used for furnace parts, petrochemical and steam generating industries
GRIOY - 7N	E307 - 15	0.12 max	4.50- 6.50	0.30- 0.70	18- 21.50	8.5- 10.50	0.50 max	0.50 max	590	30 min	N. A.	18% Cr / 8% Ni / 5% Mn austenitic stainless steel
GRINOX - 16-8-2	E16-8-2-16	0.04- 0.08	0.5- 2.50	0.30- 0.60	14.5- 16.5	7.5- 9.5	1.0- 2.0	0.50 max	550- 680	30 min	N. A.	Catalytic crackers, cyclone transfer lines, furnace parts, thick wall steam piping