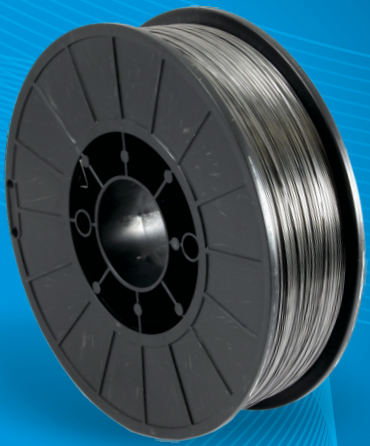
ESSEN WELDING WIRES



- Flux Cored Wire
- Solid Wires (MIG)

FLUX CORED MILD AND MEDIUM ALLOY STEELS

ESSEN® FC 71

1. AWS 5.20 ER71T-1

Description:	Rutile flux cored all positional wire with very stable & soft arc, produces excellent weld beads. Easy detachable slag, negligible spatter loss.
Application:	Suitable for Welding of mild and medium strength carbon steel. Fabrication of ships, bridges, steel structures.
Chemical Composition:	C: 0.08%, Si: 0.4%, Mn: 1.4%
Mechanical Properties:	UTS: 590 MPa, YS: 510 MPa, Elongation: 22%
Polarity:	DC+ (Wire)
Size:	1.2mm, 1.6mm
Packing:	12.5Kg/ 15Kg per spool.

FLUX CORED MILD AND MEDIUM ALLOY STEELS

ESSEN® FC 75

2. AWS 5.20 ER71T-5

Description:	Rutile flux cored all positional wire with very stable & soft arc, produces excellent weld beads. Easy detachable slag, negligible spatter loss.
Application:	Suitable for Welding of boiler quality steel, medium and thick sections of carbon-manganese steel used for pressure vessels.
Chemical Composition:	C: 0.08%, Si: 0.6%, Mn: 1.5%
Mechanical Properties:	UTS: 550 MPa, YS: 480 MPa, Elongation: **23%**
Polarity:	DC+ (Wire)
Size:	1.2mm, 1.6mm
Packing:	12.5Kg/ 15Kg per spool.

FLUX CORED STAINLESS STEEL

ESSEN® FC 308L

1. AWS 5.22 ER308L T1-1

Description:	Stainless steel flux cored wire operates with very stable, spatter free arc, produces excellent beads surface with easy slag detachability. Lower intergranular corrosion due to lower carbon content.
Application:	Suitable for Welding of 18% Cr & 9% Ni Steels. Welding of 304L, 308L structural steels.
Chemical Composition:	C: 0.04%, Cr: 19.5%, Ni: 9.5%, Mn: 1.65%
Mechanical Properties:	UTS: 520 MPa, YS: 420 MPa, Elongation: 38%
Polarity:	DC+ (Wire)
Size:	1.2mm, 1.6mm
Packing:	12.5Kg/ 15Kg per spool.

FLUX CORED STAINLESS STEEL

ESSEN® FC 309L

2. AWS 5.22 ER309L T1-1

Description:	Stainless steel flux cored wire operates with very stable, spatter free arc, produces excellent beads surface with easy slag detachability. Lower intergranular corrosion due to lower carbon content.
Application:	Suitable for Welding of 25% Cr & 12% Ni Steels. Welding of 309 type structural steels, unknown steels.
Chemical Composition:	C: 0.04%, Cr: 23.5%, Ni: 12.5%, Mn: 1.60%
Mechanical Properties:	UTS: 550 MPa, YS: 460 MPa, Elongation: 30%
Polarity:	DC+ (Wire)
Size:	1.2mm, 1.6mm
Packing:	12.5Kg/ 15Kg per spool.

FLUX CORED STAINLESS STEEL

ESSEN® FC 316L

3. AWS 5.22 ER316L T1-1

Description:	Stainless steel flux cored wire operates with very stable, spatter free arc, produces excellent beads surface with easy slag detachability. Lower intergranular corrosion due to lower carbon content.
Application:	Suitable for Welding of 19% Cr & 12% Ni, 2.5% Mo Steels. Welding of 316 type structural steels.
Chemical Composition:	C: 0.04%, Cr: 19%, Ni: 12.5%, Mo: 2.5%
Mechanical Properties:	UTS: 550 MPa, YS: 460 MPa, Elongation: 30%
Polarity:	DC+ (Wire)
Size:	1.2mm, 1.6mm
Packing:	12.5Kg/ 15Kg per spool.

FLUX CORED HARD FACING

ESSEN® HFC 650

Description:	Rutile based flux cored wire gives with very stable, spatter free arc, produces excellent slagless bead surface. Wire is designed to gives excellent resistance to abrasion against sand silica, fibre.
Application:	Shovel bucket teeth , hammers, crusher jaws, TRPF rollers.
Chemical Composition:	C: 1.5%, Cr: 10%, Mn: 0.6%, Mo: 0.06%, V:1.5%
Mechanical Properties:	Hardness: 55-60HRc
Polarity:	DC+ (Wire)
Size:	1.6mm
Packing:	15Kg per spool.

SOLID WIRES - MILD AND MEDIUM STEEL

ESSEN® MIG 706

AWS 5.18 ER70S-6

Description:	Copper coated, manganese silicon wire gives excellent spatter free weld surface. Very little slag, reduces post weld cleaning efforts. For use with CO2 gas shield.
Application:	Suitable for Welding of mild and medium strength carbon steel. Fabrication of ships, bridges, steel structures.
Chemical Composition:	C: 0.08%, Si: 0.85%, Mn: 1.8%
Mechanical Properties:	UTS: 550 MPa, YS: 470 MPa, Elongation: 26%
Polarity:	DC+ (Wire)
Size:	1.2mm
Packing:	12.5Kg/ 15Kg per spool.

SOLID WIRES - STAINLESS STEEL SOLID WIRES

ESSEN® MIG 308L

1. AWS 5.9 ER308L

Description:	Deposits 18%Cr, 10%Ni metal with controlled carbon percentage. Oxidation resistance upto 800°C.
Application:	Suitable for Welding 304L, 308L stainless steel type.
Chemical Composition:	C: 0.04%, Cr: 18%, Ni: 10%
Mechanical Properties:	UTS: 590 MPa, YS: 400 MPa, Elongation: 40%
Polarity:	DC+ (Wire)
Size:	1.2mm, 1.6mm
Packing:	12.5Kg/ 15Kg per spool.

SOLID WIRES - STAINLESS STEEL SOLID WIRES

ESSEN® MIG 309L

2. AWS 5.9 ER309L

Description:	Deposits 23%Cr, 13%Ni metal with controlled carbon percentage. Better arc stability and smooth flow of weld metal.
Application:	Suitable for Welding 309L stainless steel type, carbon steel to unknown steel.
Chemical Composition:	C: 0.04%, Cr: 23%, Ni: 13%
Mechanical Properties:	UTS: 650 MPa, YS: 450 MPa, Elongation: 35%
Polarity:	DC+ (Wire)
Size:	1.2mm, 1.6mm
Packing:	12.5Kg/ 15Kg per spool.

SOLID WIRES - ALUMINIUM SOLID WIRES

ESSEN® ALUMIG 4043

1. AWS 5.10 ER4043

Description:	Contains 5% Silicon. Excellent resistance to hot cracking.
Application:	For welding of Al-Si and Al-Mg-Si material.
Chemical Composition:	Si: 5.0%, Mn:0.01%, Al: Bal, Zn: 0.01%, Fe: 0.2%
Mechanical Properties:	UTS: 140 MPa, YS: 55 MPa, Elongation: 10%
Polarity:	DC+ (Wire)
Size:	1.2mm
Packing:	15Kg per spool.

ESSEN® ALUMIG 4047

2. AWS 5.10 ER4047

Description:	Contains 12% Silicon. Excellent resistance to hot cracking.
Application:	For welding of Al-Si and Al-Mg-Si material.
Chemical Composition:	Si: 12.0%, Mn:0.01%, Al: Bal, Zn: 0.01%, Fe: 0.2%
Mechanical Properties:	UTS: 170 MPa, YS: 80 MPa, Elongation: 6%
Polarity:	DC+ (Wire)
Size:	1.2mm
Packing:	15Kg per spool.

SOLID WIRES - COPPER AND COPPER BASED ALLOYS (MIG & TIG)

Sr. No.	Grade	Product Code
Copper- (Low Alloyed)		
1.	ERCu	**ESSEN** Cu-01
Copper-Zinc (Brass)		
1.	RBCuZn-A	**ESSEN** Cu-12
2	RBCuZn-B	**ESSEN** Cu-17
3.	RBCuZn-C	**ESSEN** Cu-19
4.	RBCuZn-D	**ESSEN** Cu-21
Copper Nickel		
1.	ERCuNi	**ESSEN** Cu-23
Copper-Silicon (Silicon Bronze)		
1.	ERCuSi-A	**ESSEN** Cu-31
Copper-Tin		
1.	ERCuSn-A	**ESSEN** Cu-41
Copper-Aluminium (Aluminium Bronze)		
1.	ERCuAl-A1	**ESSEN** Cu-51
2.	ERCuAl-A2	**ESSEN** Cu-52
3.	ERCuAl-A3	**ESSEN** Cu-53
4.	ERCuAlNi	**ESSEN** Cu-55
Copper-Manganese		
1.	ERCuMnNiAl	**ESSEN** Cu-56

ROLLER ARCING FLUX CORED WIRE FOR SUGAR MILL.

ESSEN® 80 / SUPER TUB

AC / DC +

SPECIAL PRODUCT

Properties:	For surface roughening of Sugar Mill Rolls, Increases surface area of the roller and therefore crushing efficiency, reduces POL % from baggasse, improves Roller life. Self shielded hard surfacing wire, most suited for semi and fully automatic surfacing method of the Sugar Mills Rolls. High chromium deposition in austenitic matrix gives very good resistance to serve and grinding abrasion against sugar cane fibre.
Mechanical Properties:	Hardness :55 - 58 HRc, Tensile Strength : 770 Mpa, Elongation : 36%

Typical Chemical Properties:

Elements	C	Cr	Mn	Si	S	P	Fe
Weld Metal composition	2.0% to 3.5%	13.0% to 15%	1.30% to 1.50%	.90% max	.03% max	.03% max	Bal

RECOMMENDED AMPERAGE	
Wire Dia in MM	**Current**
2.4	200-370 Amps
2.8	300-350 Amps

PACKING	
2.4	20
2.8	20

NICKEL BASE HARD FACING POWDERS

AC / DC +

- Abrasion Resistance.
- Corrosion Resistance.
- Wear Resistance.
- Impact Resistance
- Heat Resistance

Sr. No	ESSEN POWDER	HARDNESS Hrc	ALLOY COMPOSITION	APPLICATION
1.	**ESSEN** P43	38-43	C:0.4% B:1.6% Si:3.3% Cr:7.7% Ni:Bal	Nickel-based hardfacing powder, has good resistant to corrosion & impact. Deposits are machinable
2.	**ESSEN** P53	47-52	C:0.6% B:2.3% Si:3.1% Cr:11.3% Ni:Bal	Nickel-based hardfacing powder, contains high chromium borides &carbides. It exhibits good corrosion & abrasionresistance. Deposits are non-machinable
3.	**ESSEN** P63	57-62	C:0.7% B:3.1% Si:4.8% Cr:16% Ni:Bal	High nickel-chromium-boron alloygives excellent abrasion & corrosion resistance. Deposits are non-machinable