

"QUALITY PRODUCTS DO THE JOB RIGHT"

THE LEADER IN MAINTENANCE AND REPAIR WELDING TECHNOLOGY

STEEL ALLOYS

SA 111 **S T**

Premium all-purpose electrode for welding low carbon and mild steels. Superior deposit appearance with self-releasing slag. Outstanding all position characteristics.

Diameters: (in) 1/16 5/64 3/32 1/8 5/32 3/16
(mm) 1.6 2.0 2.5 3.25 4.0 5.0
Current: AC or DC **S T**
Tensile Strength: up to 80,000 psi

SA 113 **S**

Superior all position, all-purpose maintenance electrode for easy operation on rusty, dirty and scaly steels. Ideal for use on painted or galvanized surfaces or where fit up is poor.

Diameters: (in) 3/32 1/8 5/32
(mm) 2.5 3.25 4.0
Current: AC or DC **S**
Tensile Strength: up to 88,000 psi

REARC 18 **S T**

Micro-dense coated electrode for welding of medium carbon, low alloy and cast steels where ductility, impact strength and crack resistance are important. Unprecedented re-strike performance with outstanding all position welding characteristics.

Diameters: (in) 3/32 1/8 5/32 3/16 1/4
(mm) 2.5 3.25 4.0 5.0 6.0
Current: AC or DC **S T**
Tensile Strength: up to 95,000 psi
Yield Strength: up to 79,000 psi
Impacts: Charpy V Notch 174 ft. lbs. @ -4°F 97 ft. lbs. @ -49°F
Certified by CWB to CSA Standard W48.1
Conforms to AWS A5.1 E7018-1

SA 333 **S T**

Micro-dense coated electrodes for carbon, low alloy and cast steels. Specifically designed for use on "tramp" and "problem" steels high in sulfur, phosphorous and other elements added to improve machinability of the steel. Outstanding all position operation.

Diameters: (in) 3/32 1/8 5/32 3/16
(mm) 2.5 3.25 4.0 5.0
Current: AC or DC **S T**
Tensile Strength: up to 89,000 psi
Elongation: up to 35%

SA 334 **S F G**

Micro-dense coated electrode for joining and build-up of high strength quench and tempered steels such as T1, Jalloy, HY 80, HY 90, and HY 100.

Diameters: (in) 3/32 1/8 5/32 3/16
(mm) 2.5 3.25 4.0 5.0
Current: AC or DC **S F G**
Tensile Strength: up to 120,000 psi
Elongation: up to 26%

STAINLESS STEEL ALLOYS

SUPER STAINLESS GROUP **S T F G**

*HABCO E308L-16; *HABCO E309L-16;
*HABCO E316L-16; HABCO E317L-16

*Approved by CWB to CSA W48.

Conforms to AWS Specification A5.4-69.

Chemically balanced MICRO-DENSE coated electrodes that have superior welding characteristics. They are designed with a special spray type arc transfer that results in less heat input because of the closer arc gap that can be maintained while welding. This makes them easier to use in all positions. The arc stabilizer used in the coating make them outstanding when used on AC, particularly with limited duty cycle, low open circuit voltage AC machines. The special coating insures dense, porosity free deposits. They not only retard moisture pick-up, but will automatically readjust the moisture content to a safe level once they are brought back to a drier atmosphere without the need of rebaking.

ST 570 **S T** (FORMERLY ST936)

Low carbon electrode for molybdenum-bearing stainless steels. The low carbon content prevents the formation of carbides and thus prevents intergranular corrosion.

Diameters: (in) 5/64 3/32 1/8 5/32 3/16
(mm) 2.0 2.5 3.25 4.0 5.0
Current: AC or DC **S T**
Tensile Strength: up to 105,000 psi

ST 576 **S T** (FORMERLY ST976)

A universal type alloy for use in cryogenic as well as high heat applications. For dissimilar combinations of steel, stainless steel or nickel base alloys.

Diameters: (in) 3/32 1/8 5/32
(mm) 2.5 3.25 4.0
Current: AC or DC **S T**
Tensile Strength: up to 85,000 psi

ST 580 **S T** (FORMERLY ST980)

Universal stainless steel type electrode to join wide range of stainless, when the specific analysis is unknown. The deposits of this electrode have high resistance to elevated temperatures and corrosion.

Diameters: (in) 3/32 1/8 5/32
(mm) 2.5 3.25 4.0
Current: AC or DC **S T**
Tensile Strength: up to 100,000 psi

HIGH ALLOYS

SX 554 **S T G**

Ultra high strength electrode with high corrosion, crack and heat resistance. It can be easily welded in all positions. Habco SX 554 is for the maintenance welder who does not know the type of steel he is welding, or must weld dissimilar steels. Can be used for the removal of broken studs.

Diameters: (in) 1/16 5/64 3/32 1/8 5/32 3/16
(mm) 1.6 2.0 2.5 3.25 4.0 5.0
Current: AC or DC **S T G**
Elongation: up to 35% • Tensile Strength: up to 126,000 psi

SX 555 PLUS **S T G**

Ideal for welding tool steels, dies and fixtures. Also for Vanadium-moly steels, spring steels, nickel clad steels, pressure vessels, and turbine frames. Excellent choice for rebuilding shafts and blades used in the chemical, construction and mining industries. Welder's choice for joining stainless steels of unknown analysis. Can be used for the removal of broken studs.

Diameters: (in) 3/32 1/8 5/32
(mm) 2.5 3.25 4.0
Current: AC or DC **S T G**
Tensile Strength: up to 130,000 psi • Elongation: 35% • Work Hardens: up to 250,000 psi

BA 285 **S**

High strength brazing alloy for joining all ferrous and non-ferrous metals (except white metals). For joining dissimilar steels such as high nickel and copper-nickel alloys, tool steels and cast iron. Used for extending or repairing broken drill bits and attaching carbides to steel shanks.

Diameters: (in) 1/16 3/32 1/8
(mm) 1.6 2.5 3.25
Tensile Strength: up to 113,000 psi • Working Temperature: 1400°F - 1650°F

CAST IRON ALLOYS

GI 885 **S**

Economical nickel-free electrode for difficult to weld cast irons. Operates well in all position. Deposits are non-machinable.

Diameters: (in) 3/32 1/8 5/32 3/16
(mm) 2.5 3.25 4.0 5.0
Current: AC or DC **S**
Tensile Strength: up to 60,000 psi

CX 886S **S T F G**

Provides high strength, crack resistance and porosity free welds and difficult to weld cast irons. Ideal for old, oil-soaked dirty base metal.

Diameters: (in) 3/32 1/8 5/32
(mm) 2.5 3.25 4.0
Current: AC or DC **S T F G**
Tensile Strength: up to 75,000 psi • Brinell Hardness: 210

CX 887S **S T F G**

Premium high nickel electrode for all types of cast iron with maximum machinability. Unique non-conductive coating allows for smooth low temperature welding without the fear of side arc. Can be used for joining dissimilar metals such as monel, copper, stainless, nickel and steel or combinations of these.

Diameters: (in) 3/32 1/8 5/32
(mm) 2.5 3.25 4.0
Current: AC or DC **S T F G**
Tensile Strength: up to 50,000 psi • Brinell Hardness: 160

CX 888 **S**

Truly universal high strength cast iron electrode specially developed for maintenance and repair of all commonly known grades of cast iron. Special core wire features a high current carrying capacity, and the flux coating is designed to transfer impurities into the slag. Excellent out-of-position and deposits are easily machined. For fabrication and repair of all gray and alloyed cast irons. Commonly used to weld ductile iron, "ni-resist" and "meehantite" to themselves or to steel.

Diameters: (in) 3/32 1/8 5/32
(mm) 2.5 3.25 4.0
Current: AC or DC **S**
Tensile Strength: up to 80,000 psi • Brinell Hardness: 200

METAL WORKING

MX 221 **S**

High speed cutting electrode for all ferrous and non-ferrous metals, (except magnesium).

Diameters: (in) 1/8 5/32
(mm) 3.25 4.0
Current: AC or DC **S**

MX 222 **S**

Extremely efficient gouging and chamfering electrode with the ability to operate with all types of welding machines on all types of metal. For use on steel, stainless steel, cast iron, aluminum, copper and nickel alloys.

Diameters: (in) 3/32 1/8 5/32
(mm) 2.5 3.25 4.0
Current: AC or DC **S**

SILVER ALLOYS

AG 300 / AG 305 / AG 315 **S**

Silver Alloy group of solders in the 0%, 5% and 15% Ag. All alloys provide excellent flow and wetting characteristics.

Diameters: (in) 1/16 3/32 1/8
(mm) 1.6 2.5 3.25

AG 330 **S**

Flux cored silver soldering alloy for low temperature applications. Available in AC (Acid Core) for penetration and in RC (Rosin Core) for electrical applications.

Diameters: (in) 1/16 1/8
(mm) 1.6 3.25
Tensile Strength: up to 15,000 psi • Liquidus: 430°F

AG 710 **S**

Premium silver brazing alloys free of cadmium with a high silver content. Special flux coating produces unprecedented wetting action. Joints exhibit high strength and good electrical conductivity. For joining stainless steel materials commonly used in the food and dairy industries. Excellent for assembly and repair of laboratory apparatus, tubing, instruments and general maintenance and repair. Also available in bare wire (coil or stick).

Diameters: (in) 1/16 3/32
(mm) 1.6 2.5
Tensile Strength: up to 75,000 psi • Working Temperature: 1160°F (627°C)

ALUMINUM ALLOYS

AX 444 **S T G**

Premium universal aluminum electrode with a specially formulated coating for moisture resistance. Can be used as a low temperature-brazing alloy for high strength joining of wrought and cast aluminum alloys.

Diameters: (in) 3/32 1/8 5/32
(mm) 2.5 3.25 4.0
Current: DC **S T G**
Tensile Strength: 34,000 psi

AL 445 **S**

Unique self-containing flux torch alloy for the repair and build-up of aluminum. Ideal for farm irrigation pipes.

Diameters: (in) 1/8
(mm) 3.25
Tensile Strength: up to 34,000 psi
Torch Alloy: Liquidus: -1070°F

AL 446 **S**

Low temperature solder for aluminum and dissimilar metals. Can be used with Torch, Iron, Furnace or induction and will wet out on anodized surfaces.

Diameters: (in) 1/16 3/32 1/8
(mm) 1.6 2.5 3.25
Tensile Strength: 22,000 psi
Liquidus: 450°F
(Also AL446 KIT)

AL 447 **S**

Low melting point and a thin flowing characteristic. It is easy to use for seals and cracks, and works well on zinc base die castings. Provides good colour match.

Diameters: (in) 1/8
(mm) 3.25
Tensile Strength: 7,000 psi • Working Temperature: 320°F
Flame Recommendation: Carburizing Flame
FLUX: Habco FX 840

COPPER ALLOYS

CA 660 **S T G**

Phosphor Bronze electrodes with a smooth stable arc that deposit dense porosity free welds in all positions with a minimum of spatter. Used for joining and cladding bronze, brass, steel, cast steel, and cast iron.

Diameters: (in) 3/32 1/8 5/32
(mm) 2.5 3.25 4.0
Current: AC or DC **S T G**
Tensile Strength: up to 60,000 psi

CA 661 **S T G**

DC version of the CA 660 with the addition of nickel to improve resistance to frictional wear.

CA 666 **S T G**

Premium universal bronze electrode for joining and surfacing of high manganese steel, nickel and iron containing aluminum bronzes, tin (phosphor bronze), brass, copper and steel. Use for ship propeller, thrust bearings, turbines, valves, stirrer blades, suction rolls and hydraulic equipment parts. Ideal for use to join dissimilar metals.

Diameters: (in) 3/32 1/8 5/32
(mm) 2.5 3.25 4.0
Current: DC **S T G**
Tensile Strength: up to 100,000 psi

BA 280 **S**

Universal low fuming bronze brazing alloy. The flux coating enhances the wettability and fluidity of the alloy while promoting cleansing action and preventing oxidation. For repair and assembly work on steel, cast iron or wherever bronze can be used.

Diameters: (in) 1/16 3/32 1/8 5/32 3/16 1/4
(mm) 1.6 2.5 3.25 4.0 5.0 6.0
Tensile Strength: up to 75,000 psi
Working Temperature: 1400°F - 1600°F

TOOL STEELS

TX 964 AH **S T G**

Premium alloyed electrode for the repairing alterations of air hardening tool steels such as punches, trimmers, coining & forming dies. 55-60 RC.

TX 964 HS **S T F G**

Premium alloyed electrode for the repair of high speed steels used in the tool and die industry. Hard, heat resistant alloy for wear area on any supporting steel. as welded 58-62, heat treated 63-65.

TX 964 HW **S T F G**

Versatile premium alloy for tools and tool steels such as H-14, H-13, D2, D3 57-59 RC.

FOR JOINING TOOL STEELS AND DISSIMILAR STEELS SEE SX555PLUS.

AUTHORIZED REPRESENTATIVE

BUILD-UP AND HARDSURFACING

FROGSPEC **S F G**

Build-up and joining electrode for manganese steels. High resistance to impact and abrasion. Railroad approved for the repair and build-up of manganese track components, frogs and crossing diamonds.

Diameters: (in) 1/8 5/32 3/16 1/4
(mm) 3.25 4.0 5.0 6.0
Current: AC or DC **S F G**
Tensile Strength: up to 116,000 psi
Hardness as Welded: 200 BHN
Work Hardens to: 470 BHN

FROGSEAL **S F G**

For repairing, joining and surfacing components subject to high impact. Railroad approved for the repair of manganese track components, sealing cracks and surfacing damaged manganese frogs and crossing diamonds. Use as a cushion layer or "butter pass" prior to applying Frogspec.

Diameters: (in) 1/8 5/32 3/16
(mm) 3.25 4.0 5.0
Current: AC or DC **S F G**
Tensile Strength: up to 110,000 psi
Elongation: 40%
Hardness as Welded: 160 BHN
Work Hardens to: 450 BHN

RAILSPEC **S F G**

Micro dense coated electrode for build-up of carbon steels. Deposits are tough, medium hard and easily machinable. Railroad approved for build-up on carbon steel frogs, crossing diamonds, rail ends, switch points and engine burns.

Diameters: (in) 1/8 5/32 3/16 1/4
(mm) 3.25 4.0 5.0 6.0
Current: AC or DC **S F G**
Metal Recovery: 120%
Hardness: 310 - 400 BHN

HF 960 **S F G**

Multi-layer hard surfacing electrode for high abrasion coupled with medium to heavy impact. For build-up and surfacing of new and worn machine parts of steel, cast steel, manganese steel and cast iron.

Diameters: (in) 1/8 5/32 3/16 1/4
(mm) 3.25 4.0 5.0 6.0
Current: AC or DC **S F G**
Hardness: 55-60 RC

HF 962 **S F G**

High deposition hard surfacing electrode for high abrasion and medium impact resistance. Surfacing on manganese, carbon and alloy steels as well on cast iron.

Diameters: (in) 3/32 1/8 5/32 3/16
(mm) 2.5 3.25 4.0 5.0
Current: AC or DC **S F G**
Hardness: 58-62 RC
Metal Recovery: 140%

HF 963 **S F G**

Premium hardfacing electrode for severe abrasion providing good compressive strength and superior weldability. High chromium content provides excellent resistance to low stress abrasion.

Diameters: (in) 1/8 5/32 3/16
(mm) 3.25 4.0 5.0
Current: AC or DC **S F G**
Hardness: 60-62 RC

HF 965 **S F G**

Unique wearfacing alloy producing multi-carbide deposits with a very high deposition rate. Deposits are highly resistant to abrasion and erosion even at elevated temperatures up to 1600°F.

Diameters: (in) 1/8 5/32 3/16
(mm) 3.25 4.0 5.0
Current: AC or DC **S F G**
Hardness: up to 65 RC
Metal Recovery: up to 240%

MT 993 **S**

Tubular spray fusion transfer deposits feature minimum dilution with the base metal. Unique design enables electrode to be used with all welding machines at low amperages.

Diameters: (in) 1/4 3/8 1/2
(mm) 6.0 9.0 12.0
Current: AC or DC **S** • Hardness: 59 - 62 RC

BUILD-UP & HARDSURFACING WIRES

FROGSPEC **-O F G**

Open arc wire for the repair and build-up of manganese components. Use on crusher rolls, mantles, liners and other parts subjected to heavy impact. Railroad approved for the repair and build-up of manganese track components, frogs and crossing diamonds.

Diameters: (in) .045 1/16 5/64 3/32 7/64
(mm) 1.2 1.6 2.0 2.5 2.8
Current: DC **-O F G**
Hardness as welded: 18 RC • Work Hardens to: 55 RC

RAILSPEC **-O F G**

Open arc self-shielding wire for build-up on carbon and low alloy steels. Build-up on tractor pads, idlers and rollers, surfacing of structural or cast steel machine components subject to wear. Railroad approved for build-up on carbon steel frogs, crossing diamonds, rail ends, switch points and engine burns.

Diameters: (in) .045 1/16 5/64 3/32 7/64
(mm) 1.2 1.6 2.0 2.5 2.8
Current: DC **-O F G**
Hardness: 310 - 400 BHN

HF 960-0 **F G**

Open arc self-shielding wire for high abrasion coupled with medium to heavy impact resistance. Surfacing of new and worn machine parts of steel, cast steel, manganese and cast iron.

Diameters: (in) .045 1/16 5/64 3/32 7/64
(mm) 1.2 1.6 2.0 2.5 2.8
Current: DC **-O F G** • Hardness: 55 - 60 RC

HF 962-0 **F G**

Open arc self-shielding wire for high abrasion and medium impact. Surfacing on manganese, cast iron, carbon and alloy steels. Use on parts subjected to severe abrasion and impact at either normal or elevated temperatures.

Diameters: (in) .045 1/16 5/64 3/32 7/64
(mm) 1.2 1.6 2.0 2.5 2.8
Current: DC **-O F G** • Hardness: 58 - 62 RC

FOR SPECIFIC APPLICATIONS OTHER HABCO HARDSURFACING ELECTRODES AND WIRES AVAILABLE. ASK YOUR REPRESENTATIVE.

S Stick Electrode **T** TIG Electrode **F** Flux Cored Open Arc **G** Gas Shielded Wire **S** Brazing & Soldering **+** Reverse Polarity **-** Straight Polarity



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