

Group 1: Build-up and Joining Alloys

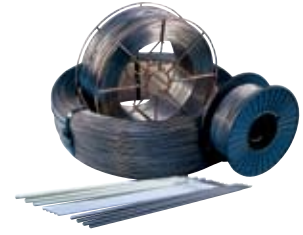
A. Build-up of Carbon Steels

Stoody® Build-up® LH Coated

A solid core electrode with a special low hydrogen coating to provide a high strength fusion bond on carbon and low alloy steels. As a base alloy for hard surfacing overlays, or for restoring parts to original dimensions, it provides a weld deposit with excellent compressive strength and ductility capable of absorbing heavy impact and/or compressive loads. Can be applied in multiple layers without cracking, spalling or mushrooming. It is machinable in the "as welded" condition with reasonable procedural care and can be forged at red heat. It is not recommended for manganese steel or cast iron and will work harden under high impact loads.

Welding Procedures/Characteristics: Can be applied AC or DC, either polarity (reverse preferred) in stringer or weave beads. Preheat and slow cool prior to machining; carbide tools are recommended. Strongly magnetic on carbon and low alloy steel. This electrode is an all-position electrode. **NOTE:** Should not be used for joining.

Applications: Tractor Rollers, Steel Shovel Pads, Tractor and Shovel Idlers, Gear Teeth, Sprockets and Shafts.



Typical Chemical Composition:

- **Alloy Content - 4.5%** (Chromium, Molybdenum, Manganese, Silicon, Carbon)
- **Iron Base**

Typical Mechanical Properties:

Hardness:

1 Layer (weave beads) - Med. Carbon Steel.....27 HRC
 2 Layers (weave beads) - Med. Carbon Steel.....29 HRC
 3 Layers (weave beads) - Med. Carbon Steel.....31 HRC

Tensile Strength.....118 KSI
 Yield Strength.....113 KSI
 Elongation.....6%

Part No.	Dimensions (Diameter x Length)	AMP (AC, DC±)	Box (lbs.)
11412900	5/32" (4.0 mm) x 14"	140-250	10
11413000	3/16" (4.8 mm) x 14"	180-310	10

B. Build-up and Joining of Manganese Steel

NICRO-MANG® Coated

NICRO-MANG® is an out of position extruded electrode with excellent impact strength. It work hardens under impact. Deposits can be flame cut. NICRO-MANG® has a high deposition rate. Designed for build-up, and joining of manganese steels. No limit to deposit thickness.

Welding Procedures/Characteristics: Can be applied AC or DC, either polarity (reverse preferred). Use straight polarity for fastest deposition. Minimum spatter loss. Produces a thin, non-popping slag that is easily removed. Weave beads 2 - 3x electrode diameter are preferred. Deposits are non-magnetic and machinability is poor. Interpass temperature should not exceed 500° F maximum. Not recommended for build-up of carbon steel.

Applications: Dipper and Tooth Build-up, Crusher Rolls, Dredge Pump Parts, Rolling Mill Couplers, Rolling Mill Spindles, Crusher Jaws, Impact Breaker Bars, Hammer Mill, Shovel Pads, Railroad Frogs (Manganese).

Typical Chemical Composition:

- **Alloy Content - 23%** (Manganese, Chromium, Nickel, Carbon, Silicon)
- **Iron Base**

Typical Mechanical Properties:

Hardness:

2 Layers.....200 BHN
 Workhardened.....500 BHN

Tensile Strength120 KSI
 Yield Strength.....70 KSI
 Elongation.....42%

Part No.	Dimensions (Diameter x Length)	AMP (AC, DC±)	Box (lbs.)
45150810	1/8" (3.2 mm) x 14"	100-160	10
45151010	5/32" (4.0 mm) x 14"	140-200	10
45151210	3/16" (4.8 mm) x 14"	170-225	10

C. Build-up and Joining of both Manganese Steel and Carbon Steels

Stoody® 2110 Coated

Stoody® 2110 is a solid core extruded electrode with alloys in the coating designed for build-up of austenitic manganese steel parts subject to high impact loading without limitations to deposit thickness. It is a modified high chromium-high manganese steel that combines toughness and wear resistance.

Welding Procedures/Characteristics: Can be applied AC or DC, reverse polarity. Weldability is excellent with low spatter. Build-up is superior to other electrodes of this type. Use stringer or weave beads. Deposits are dense, porosity-free, extremely tough and workhardens rapidly. Cannot be flame cut; machinable with carbide tools, non-magnetic. Not recommended for cast iron.

Applications: Shovel Pads, Roll Crushers, Hammers, Shovel Teeth, Grate Bars, Carbon, Steel Frogs, Switch Points, Manganese Rail, Components.

Typical Chemical Composition:

- **Alloy Content - 31%** (Manganese, Chromium, Nickel, Carbon, Silicon)
- **Iron Base**

Typical Mechanical Properties:

Hardness:

2 Layers - 1020 Steel200 BHN
 Workhardened.....48-53 HRC
 2 Layers - Mang. Steel.....210 BHN
 Workhardened.....50-55 HRC
 5 Layers - Mang. Steel.....220 BHN
 Workhardened.....50-55 HRC

Tensile Strength.....119 KSI
 Yield Strength.....76.4 KSI
 Elongation40%

Part No.	Dimensions (Diameter x Length)	AMP (AC, DC+)	Box (lbs.)
11431300	1/8" (3.2 mm) x 14"	100-130	10
10202800	5/32" (4.0 mm) x 14"	125-190	10
10202900	3/16" (4.8 mm) x 14"	150-260	10
10203000	1/4" (6.4 mm) x 18"	240-325	10

Coated Electrodes

VERSALLOY™ PLUS Coated

VERSALLOY™ PLUS is a modified austenitic stainless steel recommended for joining, rebuilding or cushion-overlaying on applications involving high strength, heat and corrosion resistance. It is frequently used to join metals in dissimilar applications involving stainless steels and low carbon steels.

Welding Procedures/Characteristics: Can be applied AC or DC, reverse polarity using a short to medium arc length. Apply in stringer or slight weave beads. Easy slag removal.

Applications: General purpose electrode used for joining stainless steels to other alloys; also a good cushioning layer for hardfacing.

Typical Chemical Composition:

- **Alloy Content - 40%** (Chromium, Nickel, Silicon, Manganese, Carbon)
- **Iron Base**

Typical Mechanical Properties:

Hardness:
As welded230 BHN
Workhardened340 BHN
Tensile Strength116 KS1

Part No.	Dimensions (Diameter x Length)	AMP (AC, DC+)	Box (lbs.)
11820700	5/32" (4.0 mm) x 14"	90-150	10

D. Build-up and Joining of Cast Irons

CASTWELD™ 55* (55% Nickel Type) Coated

CASTWELD™ 55 is for worn cast iron parts requiring build-up or joining. CASTWELD™ 55 has good strength and tolerance to the high phosphorus often found in cast irons. It is used as a general purpose rod especially when welding thick sections. CASTWELD™ 55 is also recommended for joining cast iron to dissimilar metals.

Welding Procedures/Characteristics: Must be applied with DC reverse polarity. When welding cast iron always clean the part, preheat and slow cool. Use stringer bead technique (limit weave width to 3 - 4x electrode diameter). It's preferable to run short (approx. 2") weld beads and to use a skip welding technique. Peen immediately after each weld. Short arc is recommended. Remove slag before restriking electrode on previous weld bead.

Applications: Joining or build-up on cast iron parts, i.e. Pump Housings, Engine Blocks, Assorted Castings.

*Nickel content percentage can vary slightly.

Typical Chemical Composition:

- **Nickel**
- **Iron**

Part No.	Dimensions (Diameter x Length)	AMP (AC, DC+)	Box (lbs.)
11369500	1/8" (3.2 mm) x 14"	70-110	10

CASTWELD™ 99* (99% Nickel Type) Coated

CASTWELD™ 99 makes a softer deposit than CASTWELD™ 55 and is preferred if machining of the deposit is required following welding of cast iron parts.

Welding Procedures/Characteristics: Must be applied with DC reverse polarity. When welding cast iron always clean the part, preheat and slow cool. Use stringer bead technique (limit weave width to 3 - 4x electrode diameter). It's preferable to run short (approx. 2") weld beads and to use a skip welding technique. Peen immediately after each weld. Short arc is recommended. Remove slag before restriking electrode on previous weld bead.

Applications: Repair of cast iron, particularly hairline cracks and casting defects.

*Nickel content percentage can vary slightly.

Typical Chemical Composition:

- **Nickel**
- **Iron**

Part No.	Dimensions (Diameter x Length)	AMP (AC, DC+)	Box (lbs.)
11375100	3/32" (2.4 mm) x 14"	40-80	5
11375200	1/8" (3.2 mm) x 14"	70-110	10

Group 2: Metal to Metal Wear

Low Alloy-Iron Based Stoody® 1105 Coated

Stoody® 1105 is a solid core electrode with an extruded coating containing the alloying elements. It provides good weldability and a high deposition rate. It bonds readily to carbon and low alloy steels. Deposit properties are the same as those of Stoody® 105 wire.

Welding Procedures/Characteristics: Can be applied in stringer or weave beads. Runs well on DC, either polarity; highest deposition rate with DC straight polarity. Limit layers to four. Forgeable at red heat. Machinable with carbide tools. Not recommended for manganese steels or cast iron. Deposit is magnetic on carbon and low alloy steels.

Applications: Tractor Rollers, Tractor Idlers, Arch Wheels, Shovel Rollers and Idlers Sprockets, Drive Tumblers, Churn Drills, Charging Car Wheels, Wobblers, Coupling Boxes.

Typical Chemical Composition:

- **Alloy Content - 5%** (Chromium, Manganese, Silicon, Molybdenum, Vanadium, Carbon)
- **Iron Base**

Typical Mechanical Properties:

Hardness:
(1/2" weave beads - air cooled)
2 Layers - 1045 steel.....38-42 HRC
For hot wear applications up to 600° F.

Part No.	Dimensions (Diameter x Length)	AMP (AC, DC±)	Box (lbs.)
11345100	1/8" (3.2 mm) x 14"	80-150	10
11173800	5/32" (4.0 mm) x 14"	140-210	10
11173900	3/16" (4.8 mm) x 14"	165-250	10

Group 3: Metal to Earth for Moderate to Severe Impact and Moderate to Severe Abrasion

Stoody® Self-Hardening Coated

Stoody® Self-Hardening is a solid core electrode with an extruded coating containing the alloying elements. It is magnetic on carbon or low alloy steels.

Welding Procedures/Characteristics: Can be applied AC or DC, reverse polarity. Out of position characteristics are limited. Limit weave beads to 3/4" or use stringers. Maximum of three layers if a crack free deposit is desired. Can be applied to plain or alloy steels; magnetic on carbon or low alloy steels. Can be forged at red heat; not readily machinable.

Applications: Churn Drills, Trailer Hitch, Machine Components, Bearings, Sliding Metal Parts.

Typical Chemical Composition:

- **Alloy Content - 12%** (Chromium, Manganese, Silicon, Carbon)
- **Iron Base**

Typical Mechanical Properties:

Hardness:
All Weld Metal.....52-58 HRC
2 Layers (weave beads) - Mild Steel.....52-56 HRC
Water-quenched from 1700° F56-59 HRC
Furnace-cooled from 1700° F.....19-22 HRC
2 Layers (weave beads) - 1045 Steel54-58 HRC
Water-quenched from 1700° F.....56-60 HRC
Furnace-cooled from 1700° F.....19-23 HRC

Part No.	Dimensions (Diameter x Length)	AMP (AC, DC+)	Box (lbs.)
11172400	1/8" (3.2 mm) x 14"	110-150	10
11172500	5/32" (4.0 mm) x 14"	150-200	10
11172600	3/16" (4.8 mm) x 14"	175-275	10

Stoody® 19 Coated

Stoody® 19 is a solid core electrode with an extruded coating containing the alloying elements. This electrode has excellent welder appeal. It bonds well with carbon or alloy steel including manganese.

Welding Procedures/Characteristics: Apply in weave beads using AC or DC, either polarity (reverse preferred). Limit to two layers. A severe water quench should be avoided. Easy slag removal with excellent out of position characteristics. Deposits are slightly magnetic on carbon and low alloy steels. Not machinable or forgeable. Deposits will develop cross checks.

Applications: Crusher Rolls, Dredge Pump Shells Impellers, Impact Breaker Bars, Scrapers.

Typical Chemical Composition:

- **Alloy Content - 26%** (Chromium, Carbon, Molybdenum, Manganese, Silicon)
- **Iron Base**

Typical Mechanical Properties:

Hardness:
2 Layers - Mang. Steel.....45-49 HRC
2 Layers - Med. Carbon51-55 HRC

Part No.	Dimensions (Diameter x Length)	AMP (AC, DC±)	Box (lbs.)
11360000	1/8" (3.2 mm) x 14"	90-130	10
11356700	5/32" (4.0 mm) x 14"	120-160	10
11356800	3/16" (4.8 mm) x 14"	140-220	10

Coated Electrodes

Stoody® 21 Coated

Stoody® 21 is a tubular electrode with a graphitic coating. It bonds well with cast iron, carbon or low alloy steel. It is slightly magnetic on carbon and low alloy steels, non magnetic on manganese. It has good impact and abrasion characteristics.

Welding Procedures/Characteristics: Can be applied AC or DC, either polarity (reverse preferred). Limit to two layers. A severe water quench should be avoided. No slag interference. Limited to download welding only. Deposits will cross check. Stringer beads recommended. Deposits are not machinable or forgeable.

Applications: Compactor, Buckets, Mill Hammers, Bucket Teeth, Dredge Pump.

Typical Chemical Composition:

- **Alloy Content - 23%** (Chromium, Carbon, Silicon, Manganese, Molybdenum)
- **Iron Base**

Typical Mechanical Properties:

Hardness:
2 Layers - Mang. Steel46-50 HRC
2 Layers - Med. Carbon52-56 HRC

For hot wear applications up to 800° F.

Part No.	Dimensions (Diameter x Length)	AMP (AC, DC±)	Box (lbs.)
11172700	1/8" (3.2 mm) x 14"	90-130	10
11172900	5/32" (4.0 mm) x 14"	120-160	10
11173000	3/16" (4.8 mm) x 14"	140-220	10
10205200	1/4" (6.4 mm) x 18"	175-300	50

Stoody® 31 Coated

Stoody® 31 is a tubular electrode containing the alloying elements and has an extruded coating. Welding characteristics are excellent. Deposits have a low coefficient of friction and provide good resistance to corrosion and heat. Can be applied to carbon alloy and manganese steels. It offers an outstanding balance of abrasion resistance and impact strength.

Welding Procedures/Characteristics: Can be applied AC or DC, either polarity (reverse preferred) using either stringer beads or weave beads. Weldability is excellent for out of position work with complete slag coverage that is virtually self-removing. Deposits are not machinable or forgeable.

Applications: Bucket Arms, Chain Links, Rolling Mill Guides, Pulleys, Scrapers, Buckets, Blades.

Typical Chemical Composition:

- **Alloy Content - 34%** (Chromium, Molybdenum, Carbon, Silicon, Manganese)
- **Iron Base**

Typical Mechanical Properties:

Hardness:
2 Layers - Mang. Steel.....47-49 HRC
2 Layers - Carbon Steel45-48 HRC

For hot wear applications up to 950° F.

Part No.	Dimensions (Diameter x Length)	AMP (AC, DC±)	Box (lbs.)
10206300	1/8" (3.2 mm) x 14"	100-120	10
10206400	5/32" (4.0 mm) x 14"	120-180	10
10206500	3/16" (4.8 mm) x 14"	170-240	10
10206600	1/4" (6.4 mm) x 18"	250-325	10

Stoody® 35 Coated

Stoody® 35 is a solid core electrode with a heavy extruded coating containing the alloy elements. Weldability is excellent with good out of position characteristics. Can be applied to carbon alloy and manganese steels.

Welding Procedures/Characteristics: Can be applied AC or DC, either polarity (reverse preferred). Use straight polarity to increase deposition rate. Can be applied in stringer or weave beads. A two layer deposit should be made to assure proper chemistry for best wear results. Deposits are not machinable or forgeable.

Applications: Teeth, Screws, Tile Mixer Paddles, Crushing Equipment.

Typical Chemical Composition:

- **Alloy Content - 38%** (Chromium, Carbon, Silicon, Manganese)
- **Iron Base**

Typical Mechanical Properties:

Hardness:
2 Layers - 1045 plate as welded53-57 HRC
2 Layers (weave beads) - Mang. Steel50-53 HRC
Deposits may workharden to58-60 HRC

For hot wear applications up to 950° F.

Part No.	Dimensions (Diameter x Length)	AMP (AC, DC±)	Box (lbs.)
11322900	1/8" (3.2 mm) x 14"	125-175	10
11318200	5/32" (4.0 mm) x 14"	175-250	10
11318300	3/16" (4.8 mm) x 14"	225-300	10
11318400	1/4" (6.4 mm) x 18"	275-350	10

CTS

CTS is a tubular electrode containing granular alloying elements. It has a dipped graphitic coating. Because of its high manganese content, deposits offer good resistance to impact as well as abrasion resistance. It is an excellent choice for hardfacing on cast iron.

Welding Procedures/Characteristics: Can be applied AC or DC, either polarity (reverse preferred) using either stringer beads or weave beads (wide beads preferred). Limit deposits to two layers. Recommended for downhand welding only. Can be applied to carbon, low alloy and austenitic manganese steels. Deposits are not machinable or forgeable.

Applications: Crushing Applications, Pug Mill Paddles, Sintering Mill Breakers/Bars, Cement Mill Die Rings, Railroad Tie Tamper Tips.

Typical Chemical Composition:

- **Alloy Content - 38%** (Chromium, Manganese, Carbon, Silicon, Molybdenum)
- **Iron Base**

Typical Mechanical Properties:

Hardness:
2 Layers (weave beads) - Med. Carbon.....57-61 HRC
2 Layers (weave beads) - Mang. Steel.....47-51 HRC

For hot wear applications up to 900° F.

Part No.	Dimensions (Diameter x Length)	AMP (AC, DC±)	Box Quantity
10207300	1/4" (6.4 mm) x 18"	275-350	60/box

Stoody® 2134 Coated

Stoody® 2134 is a tubular electrode containing granular alloying elements. The coating is graphitic. Exhibits excellent abrasion resistance in fine, sandy soils. Also, it is the best choice for high abrasion accompanied by high impact. It is a good choice for hardfacing on cast iron parts.

Welding Procedures/Characteristics: Can be applied AC or DC, either polarity (reverse preferred). For AC applications welding machines with minimum of 70 volts OCV recommended. Limit deposits to two layers. Welds extremely well at low amperages. Recommended for download welding only. Weldability is very good when proper procedures are followed. Easy slag removal. For use on carbon, low alloy, and manganese steels. Deposits are not machinable or forgeable.

Applications: Crusher Rolls, Pit Scrapper, Mill Hammers, Bucket Teeth, Impactor Bars (final pass).

Typical Chemical Composition:

- **Alloy Content - 36%** (Chromium, Carbon, Molybdenum, Manganese, Silicon)
- **Iron Base**

Typical Mechanical Properties:

Hardness:
2 Layers (weave beads) - 1045 Plate
as welded56-60 HRC
Line-cooled from 117507.....48-51 HRC
Water-quenched from 1750° F.....63-65 HRC
2 Layers (weave beads) - Mang. Steel.....45-50 HRC
Deposits may workharden 5 to 6 points

For hot wear applications up to 950° F.

Part No.	Dimensions (Diameter x Length)	AMP (AC, DC±)	Box (lbs.)
11276800	5/32" (4.0 mm) x 14"	100-155	10
11276700	3/16" (4.8 mm) x 14"	150-210	10
10208500	1/4" (6.4 mm) x 18"	180-300	60

Stoody® XHC Coated

XHC is a solid core electrode with an extruded graphitic coating containing the alloying elements. Deposits are highly resistant to both sliding and grinding abrasion. A very good choice for hardfacing on cast iron.

Welding Procedures/Characteristics: Can be AC or DC, either polarity (reverse preferred) using either stringer or weave beads (11" wide beads preferred). Limit deposits to two layers. Considerable cross checking is normal. Bonds well to manganese, carbon and alloy steels. In addition to its excellent weldability it has a very high deposition rate and good out of position characteristics. Deposits are not machinable or forgeable.

Applications: Grader Blades, Harrow Plows, Slurry Pipe.

Typical Chemical Composition:

- **Alloy Content - 35%** (Chromium, Carbon, Manganese, Silicon, Molybdenum)
- **Iron Base**

Typical Mechanical Properties:

Hardness:
1 Layer (weave beads)
Med. Carbon Steel60-66 HRC
1 Layers (weave beads) - Mang. Steel.....50-55 HRC

For hot wear applications up to 1000° F

Part No.	Dimensions (Diameter x Length)	AMP (AC, DC±)	Box (lbs.)
11383000	1/8" (3.2 mm) x 14"	100-150	10
11382700	5/32" (4.0 mm) x 14"	125-250	10
11382500	3/16" (4.8 mm) x 14"	150-300	10

Coated Electrodes and Bare Rods

Super 20 Coated

Super 20 is a solid core electrode with a heavy extruded coating containing the alloying elements. Its extremely good wear resistance is attributed to the addition of molybdenum, tungsten and chromium.

Welding Procedures/Characteristics: Can be applied DC reverse polarity. Weld with a short arc. Can be applied either as stringer or weave beads. Limit to one layer. Deposits will exhibit cross checking patterns normal for high alloys. At amperages above 150 (5/32" electrodes) Super 20 exhibits good out of position characteristics. Deposits are not machinable or forgeable.

Applications: Crusher Parts, Coke Pusher Shoes, Ash Fan Blade, Hot Slag Dipper Teeth, Spiral Conveyors, Pug Mill Paddles, Feed Mill Hammers, Sintering Plant Parts, Anhydrous Ammonia Plows.

Typical Chemical Composition:

- **Alloy Content - 39%** (Chromium, Molybdenum, Carbon, Tungsten, Silicon, Manganese)
- **Iron Base**

Typical Mechanical Properties:

Hardness:
1 Layer - Mang. Steel.....58-63 HRC
1 Layer - Carbon Steel60-65 HRC

For hot wear applications up to 1100° F.

Part No.	Dimensions (Diameter x Length)	AMP (AC, DC+)	Box (lbs.)
46520810	1/8" (3.2 mm) x 14"	70-160	10
46521010	5/32" (4.0 mm) x 14"	130-250	10

Group 4: Metal to Earth for Extreme Abrasion and Low Impact

AC-DC BOROD® Coated

BOROD® is similar to Tube Borium in all respects except particle mesh size, which is finer (40 down) to provide deposits resembling a fine grit sandpaper. Its deposit is heterogeneous consisting of tungsten carbide particles suspended in a tungsten steel matrix. BOROD® deposits generally provide slightly increased abrasion protection.

Welding Procedures/Characteristics: For AC-DC BOROD®, use minimum amperage to minimize dilution. Use AC or reverse polarity with DC current. Avoid multiple layers; use stringer beads. For hot wear application up to 900° F.

Applications: Log Grapplers, Concrete Pug Mill Paddles, Ash Plows, Ore Chutes, Sand Slinger Buckets.

Typical Chemical Composition:

- **Alloy Content - 60%** - Tungsten Carbide
- **Iron Base**

Part No.	Mesh	Dimensions (Diameter x Length)	AMP (AC, DC+)	Box (lbs.)
10234400	40-down	1/8" (3.2 mm) x 14"	80-100	10
10234600		5/32" (4.0 mm) x 14"	100-120	10
10234800		3/16" (4.8 mm) x 14"	120-150	10

Acetylene Tube Borium Bare

Bare Acetylene Tube Borium is manufactured by metering crushed tungsten carbide particles of controlled mesh size into steel tubes. Borium is available in a variety of particle sizes; fine mesh sizes increase wear resistance, coarse sizes improve cuffing efficiency. Borium deposits absorb more impact than the finer BOROD® overlays because more matrix is exposed.

Welding Procedures/Characteristics: For ATB, adjust excess acetylene flame 3x length of inner core. Use torch tip size larger than normally used to weld same diameter mild steel rod. Sweat deposits to parent metal with minimum dilution. Limit to one layer. Maximum working temperature is 900° F.

Applications: Plow Shares, Cane Knives, Teeth, Tool Drill Bits.

Typical Chemical Composition:

- **Alloy Content - 60%** - Tungsten Carbide
- **Iron Base**

Part No.	Mesh	Dimensions (Diameter x Length)	Box (lbs.)
10227100	30-40	1/8" (3.2 mm) x 14"	10
11429000	30-40	5/32" (4.0 mm) x 28"	10
10228100	20-30	3/16" (4.8 mm) x 14"	10

Tube Borium S & H

Tube Borium S & H were developed for special applications. Percentage of tungsten carbide has been reduced in these products, making them more impact resistant allowing the material to be used in multiple layer applications.

Welding Procedures/Characteristics: Designed for multiple layers. Adjust excess acetylene flame 3x length of inner core. Use torch tip size larger than normally used to weld same diameter mild steel rod. Sweat deposits to parent metal with minimum dilution. For hot wear applications up to 900° F.

Applications: Churn Drills, Cable Tools, Rotary Drill Bits.

Typical Chemical Composition:

- **Alloy Content:** Tungsten Carbide H (40%), S (35%)
- **Iron Base**

Part No.	Mesh	Dimensions (Diameter x Length)	Box (lbs.)
10229300	Special	5/32" (4.0 mm) x 18"	10
10229500	Mesh sizes	3/16" (4.8 mm) x 18"	10

VANCAR E Coated

VANCAR E deposits contain specially formulated vanadium tungsten carbide particles approximately equal to tungsten carbide in hardness but only half as heavy. VANCAR's advantage over tungsten carbide is that it can be applied in multiple layers and still retain its original hardness due to uniform distribution of the carbide particles. This provides wear rates that remain very uniform throughout the life of the deposit. VANCAR E is a fabricated electrode with a dipped coating.

Welding Procedures/Characteristics: For DC straight polarity application. Use lowest practical amperage that will assure a good bond to minimize dilution with the base metal. Use mid-range amperage for best possible coverage and best surface appearance. Can be applied up to three layers. For hot wear applications up to 900° F.

Applications: Farm Drill Points, Dry Cement Pump Screw, Drill Pipe Stabilizer Wings, Ammonia Injector Wings, Pug Mill Knives, Chisels.

Typical Chemical Composition:

- **Alloy Content - 37%** (Vanadium, Tungsten, Carbon, Silicon, Molybdenum, Manganese, Nickel)
- **Iron Base**

Part No.	Dimensions (Diameter x Length)	AMP (DC±)	Box (lbs.)
11327600	5/32" (4.0 mm) x 14"	80-130	10
11296500	3/16" (4.8 mm) x 14"	130-165	10

Group 5: Abrasion Accompanied by Corrosion and/or High Temperatures

STOODITE 6 Bare And Coated

The most generally used cobalt alloy, having excellent resistance to many forms of mechanical and chemical degradation over a wide temperature range. Particular attributes are its outstanding self-mated anti-galling properties, high temperature hardness, and a high resistance to cavitation erosion, which result in its wide use as a valve seat material. The alloy is ideally suited to a variety of hardfacing processes. Machinable with carbide tools. Bonds well with weldable alloy steels, including stainless. Certification to AWS-A5.13, Type RCoCr-A (Bare) and ECoCr-A (Coated); MIL R-17131, Type MIL-RCoCr-A-1 (Bare) and AMS 5788 must be requested at time of order.

Welding Procedures/Characteristics: Weld DC reverse polarity. Use minimum amperage; apply weave bead 3/4" to 1-1/2" wide. For check-free deposits, preheat and slow cool. In applying bare rod, use a larger torch tip than is generally used for same diameter mild steel. Use excess acetylene feather 3x length of inner cone. With the gas tungsten arc process, use 100% Argon. Generally a 2 layer deposit.

Applications: Sintering Machine Seat, Covers, Flapper Gates, Valves and Seats, Coke Pusher Shoes, Cooling Bed Rolls, Hot Trimming Dies, Forging Die Blocks, Chain Saw Guide Bars, Blow Valves, Pulp Digester, Plastic Extrusion Screws.

Typical Chemical Composition;

- **Alloy Content:** C 1.1, Cr 28, W 4
- **Cobalt Base**

Average Hardness, Rockwell C:

Tungsten Arc, Two Layer Deposit:.....40
Oxy Acetylene, One Layer Deposit:.....42
Shielded Metal Arc, Two Layer Deposit:.....39

Part No.	Bare Cast Rod	Covered Electrodes	AMP (DC±)	lbs./box
10243100	5/32" (4.0 mm)	5/32" (4.0 mm)	135-160	10

Stoodite 21 Bare and Coated

A low carbon, molybdenum strengthened cobalt-chromium alloy. Its excellent high temperature strength and stability are responsible for its use as a hot die material, while its inherent resistance to galling (under self-mated conditions), cavitation erosion, and corrosion have made it a popular fluid valve seat facing alloy.

Welding Procedures/Characteristics: Weld DC reverse polarity. Use minimum amperage; apply weave bead 3/4" to 1-1/2" wide. For check-free deposits, preheat and slow cool. In applying bare rod, use gas tungsten arc process with 100% Argon as the shielding gas. Can be machining. Bonds well with weldable alloy steels, including stainless.

Applications: Hot Forming Dies, Valves And Seats, Turbine Runners.

Typical Chemical Composition:

- **Alloy Content:** C 0.25, Cr 27, Mo 5, Ni 2.8
- **Cobalt Base**

Average Hardness, Rockwell C:

Tungsten Arc, Two Layer Deposit:.....24 (45 Workhardened)
Shielded Metal Arc, Two Layer Deposit:.....26 (45 Workhardened)

Part No.	Bare Cast Rod	Covered Electrodes	AMP (DC±)	lbs./box
812101205135	1/8" (3.2 mm)	1/8" (3.2 mm)	90-120	10
812101205156	5/32" (4.0 mm)	5/32" (4.0 mm)	135-160	10
812101205250	1/4" (6.4 mm)	1/4" (6.4 mm)	220-270	10

Semi-Automatic Wires

Group 1: Build-up and Joining Alloys

A. Build-up of Carbon Steels

Stoody® Build-Up

A low alloy fabricated wire that has excellent compressive strength and resistance to plastic deformation. This is an excellent alloy for use as an underbase for subsequent hardfacing. Several diameters are available for use both with and without shielding gases. This material has good machinability in the "as welded" condition using carbide tools. It is not recommended for manganese steel or cast iron and will workharden under impact.

Welding Procedures/Characteristics: Can be applied AC or DC, either polarity (reverse preferred) in either stringer or weave beads 1/2" to 3/4" wide. Can be applied out of position with proper welding techniques. Slag removal is very good. This wire is not recommended for joining applications. Vertical welding can be done by welding a horizontal shelve approximately 2" wide and then going up.

Applications: Hammers, Wheels Burns, Repairing Battered Rail, Steel Mill Wobblers And Pods, Carbon Steel Shovel Pads, Shafting, Rolls, Pump Parts.

Nominal Composition:

- **Alloy Content - 4%** (Manganese, Chromium, Silicon, Molybdenum, Carbon)
- **Iron Base**

Mechanical Properties Typical Rockwell Hardness:

Base Metal	Layers	HRC
0.10% C	2	24-28
0.40% C	2	30-35
0.80% C	2	38-42

Part No.	Wire Diameter	Shielding Gas	Wire Ext.	AMPS	Volts	Spool Size (lbs.)
11258300	1/16" (1.6 mm)	Open-arc or CO ₂	1/2"-3/4"	250-300	23-26	50 (polypak)
11183600	3/32" (2.4 mm)	Open-arc	1"-1-1/2"	150-500	26-29	60 (coil)

**B. Build-up and Joining of Manganese Steel
FOUNDRY CO-MANG-O**

FOUNDRY CO-MANG-O is a manganese steel wire. It is suitable for multi-layer buildup and has excellent work hardening characteristics. It is usable for austenitic manganese steel repair, buildup and joining.

Welding Procedures/Characteristics: DC reverse polarity recommended, using either stringer or weave beads 1/2" to 3/4" wide. Wire extension (arc length) is very important. If it becomes too long, excessive spatter results; if too short, "stubbing" will occur. Limit interpass temperature to 500° F maximum.

Applications: Rock Crushing and Mining, Dredge Pump Parts, Hammer Mill Hammers, Shovel Pads, Crusher Rolls, Jaws, Grizzly Bars, Screens, Grates, Impactor Bars, Manganese Railroad Frogs, Latch Pins.

Nominal Composition:

- **Alloy Content - 18%** (Carbon, Manganese, Molybdenum)
- **Iron Base**

Mechanical Properties Typical Rockwell Hardness:

Tensile Strength	128 KSI
Yield Strength	71 KSI
Elongation in 2".....	42%
Hardness:	
As Deposited	170-210 BHN
Workhardened to	350-450 BHN

Part No.	Wire Diameter	Shielding Gas	Wire Ext.	AMPS	Volts	Spool Size (lbs.)
11863600	1/16" (1.6 mm)	Open-arc	1/2"-1"	200-250	25-27	50
11847800	1/16" (1.6 mm)	Open-arc	1/2"-1"	200-250	25-27	33

C. Build-up and Joining of Both Carbon and Manganese Steels

Stoody® 110

Stoody® 110 is a modified high chromium high manganese steel widely used in the rebuilding of manganese steel parts subject to severe impact loading. This material offers excellent cavitation resistance; good toughness and wear resistance; is sometimes used as the final handfacing layer in extreme impact situations.

Welding Procedures/Characteristics: DC reverse polarity recommended, using either stringer or weave beads 1/2" to 3/4" wide. Deposits cannot be flame cut, are machinable with carbide tools, are non-magnetic and are not recommended for cast iron. The addition of CO₂ shielding gas with the 1/16" diameter wire reduces the amount of spatter and improves the weldability.

Applications: Drive Tumblers, Shovel Pads, Shovel Teeth, Turbine Cone, Wobbler Feeder, Manganese Frogs, Crusher Rolls.

Nominal Composition:

- **Alloy Content - 35%** (Chromium, Manganese, Nickel, Silicon, Carbon)
- **Iron Base**

Mechanical Properties Typical Rockwell Hardness:

Tensile Strength.....	119 KSI
Yield Strength	76.4 KSI
Elongation in 2".....	40%
Hardness:	
All Weld Metal	17 BHN
Workhardened to	55 BHN

Part No.	Wire Diameter	Shielding Gas	Wire Ext.	AMPS	Volts	Spool Size (lbs.)
11452600	.045" (1.2 mm)	98% Ar/2% O ₂ or 75% Ar/25% CO ₂	1/2"-3/4"	135-185	18-24	33
11345000	1/16" (1.6 mm)	Open-arc or CO ₂	1/2"-1"	150-210	22-26	50

Stoody® 120

Stoody® 120 is a high manganese wire recommended for applications involving severe wear and impact. Deposits are austenitic whether applied to manganese steel or carbon steel. This is an excellent alloy for the rebuilding of crusher rolls, hammers, impactor nuts, cone crusher nuts and railroad track components.

Welding Procedures/Characteristics: DC reverse polarity recommended, using either stringer or weave beads. Welding can be done out-of-position with the smaller diameter wires; vertical up requires a wide weave technique. Deposits are non-magnetic, machinable with carbide tools and can be flame cut. The addition of CO₂ shielding gas with the 1/16" diameter wire reduces the amount of spatter and improves the weldability.

Applications: Crusher Hammers Rolls, Impactor Bars and Rotors, Crusher Cone Nuts and Mantles, Track Components.

Nominal Composition:

- **Alloy Content - 25%** (Manganese, Chromium, Carbon, Silicon)
- **Iron Base**

Mechanical Properties Typical Rockwell Hardness:

Tensile Strength.....133 KSI
Yield Strength.....91.5 KSI
Elongation in 2 in29%
Hardness:
All Weld Metal.....18 BHN
Workhardened to.....55 BHN

Part No.	Wire Diameter	Shielding Gas	Wire Ext.	AMPS	Volts	Spool Size (lbs.)
11420400	1/16" (1.6 mm)	Open-arc or CO ₂	1/2"-1"	150-250	22-26	50 (polypak)

Group 2: Metal to Metal Wear (Low-Alloy Iron-Based)

Stoody® Super Build-Up

Stoody® Super Build-Up is used both as a build-up and hardfacing material because it has good compressive strength, hardness, and wear resistance. It is not intended to be used as an underbase for subsequent hardfacing. When a shielding gas is used, machinability is very good with carbide tools.

Welding Procedures/Characteristics: DC reverse polarity recommended, using either stringer or weave beads. Weldability is very good and can be applied out of position. The addition of CO₂ shielding gas with the 1/16" diameter wire reduces the amount of spatter and improves the weldability. Multiple layers can be applied without difficulty when proper preheat and interpass temperatures are maintained.

Applications: Gear Teeth, Sprockets, Steel Shovel Pads, Overlaying Carbon Steel Shafts.

Nominal Composition:

- **Alloy Content - 5%** (Chromium, Manganese, Molybdenum, Silicon, Carbon)
- **Iron Base**

Mechanical Properties Typical Rockwell Hardness:

Base Metals.....0.20% C
Layers.....2
HRC.....35-40

Part No.	Wire Diameter	Shielding Gas	Wire Ext.	AMPS	Volts	Spool Size (lbs.)
11426400	1/16" (1.6 mm)	Open-arc or CO ₂	1/2"-1"	140-260	23-26	50

Stoody® 105-G

Stoody® 105-G (GMAW) is a low alloy wire developed for the rebuilding of carbon and low alloy parts used in applications involving metal-to-metal wear. Requires carbide tools for machining. Good for hot wear application up to 600° F.

Welding Procedures/Characteristics: DC reverse polarity recommended, using either stringer or weave beads. Weldability is very good and can be applied out of position. The addition of CO₂ shielding gas with the 1/16" diameter wire reduces the amount of spatter and improves the weldability. Multiple layers can be applied without difficulty when proper preheat and interpass temperatures are maintained.

Applications: Tractor Rollers, Undercarriage parts, Shovel Idlers and Rollers, Shovel House Rolls (Hook Rolls), Top Carrier Rolls, Crane Wheels, Mine Car Wheels.

Nominal Composition:

- **Alloy Content - 7%** (Chromium, Molybdenum, Silicon, Manganese, Carbon)
- **Iron Base**

Mechanical Properties Typical Rockwell Hardness:

Base Metals.....0.20% C
Layers.....2
HRC.....41-46

Part No.	Wire Diameter	Shielding Gas	Wire Ext.	AMPS	Volts	Spool Size (lbs.)
11441100	1/16" (1.6 mm)	98% Ar/2% O ₂ , or 75% Ar/25% CO ₂	3/4" -1"	250-300	25-26	50

Semi-Automatic Wires

Stoody® 102

Stoody® 102 has an all weld metal composition and physical properties that are very similar to those of H-12 tool steel. Good for hot wear application up to 1000° F. Has very good compressive strength and abrasion resistance. Requires carbide tools for machining.

Welding Procedures/Characteristics: DC reverse polarity recommended, using either stringer or weave beads. Weldability is very good and can be applied out of position. The addition of CO₂ shielding gas with the 1/16" diameter wire reduces the amount of spatter and improves the weldability. Multiple layers can be applied without difficulty when proper preheat and interpass temperatures are maintained.

Applications: Cable Sheaves, Hot and Cold Shear Blades, Forging Dies, Drillpipe Hardbanding, Crane Wheels, Hot Work Extrusion Rolls.

Nominal Composition:

- **Alloy Content - 14%** (Chromium, Manganese, Molybdenum, Tungsten, Carbon, Vanadium)
- **Iron Base**

Mechanical Properties Typical Rockwell Hardness:

Base Metals.....0.20% C
Layers.....2
HRC.....48-53

Part No.	Wire Diameter	Shielding Gas	Wire Ext.	AMPS	Volts	Spool Size (lbs.)
11422300	.045" (1.2 mm)	98% Ar/2% O ₂ , or 75% Ar/25% CO ₂	1/2" - 3/4"	135-185	18-24	33

Group 3: Metal to Earth for Moderate to Severe Impact and Moderate to Severe Abrasion

Stoody® 965-G

Stoody® 965-G can be categorized as a general purpose hardfacing alloy that offers a good balance of impact and abrasion resistance. Analysis and properties are very similar to Stoody® self-hardening. Applications would include both metal-to-metal and metal-to-earth. Deposits are martensitic, forgeable, and are not readily machinable. Can be applied to carbon, low alloy and manganese steel.

Welding Procedures/Characteristics: DC reverse polarity recommended using either stringer or weave beads. Weldability is very good in flat and horizontal applications. The addition of CO₂ shielding gas with the 1/16" diameter wire reduces the amount of spatter and improves the weldability.

Applications: Tillage Tools, Drag Line Bucket Lips, Tamper Feet, Chisel Plows, Dredge Parts, Extruded Screws, Muller Tires.

Nominal Composition:

- **Alloy Content - 10%** (Carbon, Manganese, Molybdenum, Silicon)
- **Iron Base**

Mechanical Properties Typical Rockwell Hardness:

Base Metals.....0.20% C
Layers.....2
HRC.....56-60

Part No.	Wire Diameter	Shielding Gas	Wire Ext.	AMPS	Volts	Spool Size (lbs.)
11423000	.045" (1.2 mm)	98% Ar/2% O ₂ , or 75% Ar/25% CO ₂	1/2"-3/4"	150-200	25-29	10
11423100	.045" (1.2 mm)	98% Ar/2% O ₂ , or 75% Ar/25% CO ₂	1/2"-3/4"	150-200	25-29	33
11427000	1/16 (1.6 mm)	Open-arc or CO ₂	3/4" -1"	200-250	27-31	50
11427100	1/16 (1.6 mm)	Open-arc or CO ₂	3/4" -1"	200-250	27-31	33

Stoody® 965 AP-G

Stoody® 965 AP-G is a gas-shielded, flux cored, all position, general purpose hardfacing alloy which offers a good balance of impact and abrasion resistance. It can be used in both metal-to-metal and metal-to-earth applications. Deposits are forgeable but not readily machinable. Stoody 965 AP-G has a smooth semi-spray transfer and can be applied to carbon, low alloy, and manganese steels. It is magnetic on carbon and low alloy steels but not on manganese steels. Analysis and properties are similar to Stoody Self Hardening covered electrodes.

Welding Procedures/Characteristics: DC reverse polarity recommended using 75 Argon/25 CO₂ shielding gas, this wire has excellent out of position characteristics in the vertical, overhead and horizontal positions. It has a smooth semi-spray transfer and can be applied to carbon and low alloy steels.

Applications: Tillage Tools, Dredge Parts, Sliding Metal Parts, Tire Shredder Knives, Drag Line Bucket Lips, Extruder Screws, Tamper Feet, Churn Drills, Muller Tires.

Nominal Composition:

- **Alloy Content - 11%** (Carbon, Chromium, Manganese, Molybdenum, Silicon)
- **Iron Base**

Deposit Characteristics:

Abrasion Resistance.....Good
Impact Resistance.....Good
2 Layer Hardness.....57-62 HRC
Deposit Layers.....2 Normal, 3 Max.

Part No.	Wire Diameter	Shielding Gas	Wire Ext.	AMPS	Volts	Spool Size (lbs.)
11807800	.045" (1.2 mm)	75% Ar/25% CO ₂	1/2"-3/4"	200-250	27-31	33

Stoody® 117

Stoody® 117 gives a semi-austenitic matrix with uniformly dispersed chromium carbides that provides a deposit with very good impact, abrasion and antigalling properties. Frequently used as both a build-up and hardfacing alloy on manganese and low alloy materials.

Welding Procedures/Characteristics: DC reverse polarity recommended using stringer beads and fast travel. Light cross-checking pattern develops which allows this material to be applied in multiple layers without difficulty. Weldability is very good and deposits are not machinable.

Applications: Crusher Rolls, Hammers, Bell Type Gyrotory Cones, Bucket Lips, Mantles.

Nominal Composition:

- **Alloy Content - 17%** (Carbon, Chromium, Manganese, Copper, Molybdenum, Silicon)
- **Iron Base**

Mechanical Properties Typical Rockwell Hardness:

Hardness:
Nominal Hardness.....43-45 HRC
3 Layers on Mild Steel.....43-45 HRC
2 Layers on Mang. Steel.....38-40 HRC

Workhardens.....55-

Part No.	Wire Diameter	Shielding Gas	Wire Ext.	AMPS	Volts	Spool Size (lbs.)
11320600	7/16 (2.8 mm)	Open-arc	1" -1-1/2"	300-600	31-35	110 QP

Stoody® 121

Stoody® 121 gives a semi-austenitic matrix with uniformly dispersed chromium carbides and is recommended for applications where abrasion is severe and impact is only moderate. Provides excellent service on a wide variety of heavy equipment and earth engaging tools. Typically cross-checks when applied and is not machinable. Can be applied to carbon, low alloy and manganese steels

Welding Procedures/Characteristics: DC reverse polarity recommends using either stringer or weave beads. The addition of CO, shielding gas with the 1/16" diameter wire reduces the amount of spatter and improves the weldability. Limit deposits to 2 layers maximum in the downhand position only.

Applications: Scraper Sides, Scraper Cutters, Vibrator Ditcher Shank, Post Hole Augers, Pug Mill Paddles, Tamper Tools

Nominal Composition:

- **Alloy Content - 21%** (Chromium, Carbon, Manganese, Silicon)
- **Iron Base**

Mechanical Properties Typical Rockwell Hardness:

Base Metal	Layers	HRC
.20%	1	40-43
.20%	2	48-50
Mang. Steel	1	40-44
Mang. Steel	2	47-51

On Carbon Steel or Low Alloy Steel: Slightly Magnetic
On Mang. Steel: Non-Magnetic Not Forgeable or Machinable

Part No.	Wire Diameter	Shielding Gas	Wire Ext.	AMPS	Volts	Spool Size (lbs.)
11408300	1/16" (1.6 mm)	Open-arc or CO ₂	1/2" -1"	205-255	24-28	33
Stoody 121-G						
11423200	.045" (1.2 mm)	98% Ar/2% O ₂ , or 75% Ar/25% CO ₂	1/2"-3/4"	175-200	22-26	33

Stoody® 101HC

Stoody® 101HC is a high chromium-iron alloy recommended for applications subject to severe abrasion and moderate impact and heat. Develops very tight cross checking pattern and is frequently used for applications involving severe metal-to-earth abrasion. Generally limited to 2 layers. Deposits are not machinable or forgeable and can be used in hot wear applications up to 900° F.

Welding Procedures/Characteristics: DC reverse polarity recommended using either stringer or weave beads. Can be applied to carbon, low alloy, and manganese steels. The small diameter (.045" and 1/16") wires can be run out of position using relatively fast travel speeds and no oscillation. The addition of CO₂ shielding gas with the 1/16" diameter wire reduces the amount of spatter and improves its weldability for out of position work.

Applications: Scraper Sides, Cutters, Blades, Ripper Shanks and Teeth, Shovel Bucket Tooth Adapters, Clam Shell Bucket, Bucket Sides and Lips, Tillage Tools, Augers and Auger Flights, Conveyor Screws.

Nominal Composition:

- **Alloy Content - 26%** (Chromium, Carbon, Manganese, Silicon)
- **Iron Base**

Mechanical Properties Typical Rockwell Hardness:

Base Metal	Layers	HFIC
.20% C	1	55-58
.20% C	2	62-64

Hardness:
1 Pass on mild steel55-64 HRC
2 Passes on mild steel59-64 HRC

On Mild Steel: Slightly Magnetic
On Mang. Steel: Magnetic

Part No.	Wire Diameter	Shielding Gas	Wire Ext.	AMPS	Volts	Spool Size (lbs.)
11874600	.045" (1.2 mm)	98% Ar/2% O ₂ , or 75% Ar/25% CO ₂	1/2"-3/4"	150-200	22-26	50
11304700	1/16 (1.6 mm)	Open-arc or CO ₂	1/2" -1"	200-260	24-28	33
11436300	.045" (1.2 mm)	98% Ar/2% O ₂ , or 75% Ar/25% CO ₂	1/2"-3/4"	150-200	22-26	33
11440300	.045" (1.2 mm)	98% Ar/2% O ₂ , or 75% Ar/25% CO ₂	1/2"-3/4"	150-200	22-26	10
11304800	1/16 (1.6 mm)	Open-arc or CO ₂	1/2" -1"	200-260	24-28	50

Semi-Automatic Wires

Group 4: Metal to Earth for Extreme Abrasion and Low Impact

Stoody® 130

Stoody® 130 wire provides the ultimate wear resistance and the ability to cut earth formations because of the tungsten carbide particles contained in the wire.

Welding Procedures/Characteristics: To maximize the benefits of this open arc wire, the welding current should be kept to an absolute minimum. DC reverse (18-24 volts) polarity is recommended using stringer beads in a single layer; relief checks. Bonds readily to carbon and low alloy steels.

Applications: Scoop Lips and Teeth, Ripper, Muller Plows Augers, Pug Mill Knives, Chisel Plow, Ammonia Injectors, Auger Flights, Cultivator Chisels, Ditcher Teeth, Swing Hammers, Ensilage Knife, Raymond Mill Plows, Tillage Tools of All Types.

Nominal Composition:

- Alloy Content - 60% (Tungsten Carbide)
- Iron Base

Mechanical Properties Typical Rockwell Hardness:

Hardness of Borium
Particles9.9 on Moh's Scale

On carbon or low alloy steel: magnetic
Not recommended for Mang. steel.
Not forgeable or machinable.

Part No.	Wire Diameter	Shielding Gas	Wire Ext.	AMPS	Volts	Spool Size (lbs.)
11413200	1/16" (1.6 mm)	Open-arc	1/2"	90-120	18-24	33

Group 5: Abrasion Accompanied by Corrosion and/or High Temperatures (Cobalt and Nickel)

STOODITE 6

STOODITE 6 is the most widely used cobalt alloy having excellent resistance to many forms of mechanical and chemical degradation over a wide temperature range. Particular attributes are its outstanding self mated anti-galling properties, high temperature hardness and high resistance to cavitation erosion. Certification to AWS-A5.13, Type ECoCr-A (Coated), but with exceptions.

Welding Procedures/Characteristics: A gas metal arc wire (DC reverse polarity) requiring proper preheat, controlled interpass temperatures and cooling rates. Special power supplies (i.e. pulsed arc, etc.) are used to reduce penetration and base metal dilution. Crack free deposits up to 2 layers.

Applications: Flights of Extrusion Screws, Sinker Roll Bushings in Steel Mill, Soaking Pit Tong Bit, Shafts.

Nominal Composition:

- Alloy Content - 96% (Chromium, Tungsten, Iron, Carbon, Manganese, Silicon, Nickel, Molybdenum)
- Cobalt Base

Mechanical Properties Typical Rockwell Hardness:

1 Layer 27-33 HIFIC
2 Layers 36-39 HRC

Part No.	Wire Diameter	Shielding Gas	Wire Ext.	AMPS	Volts	Spool Size (lbs.)
810722182045	.045 (1.2 mm)	Argon or 98%/Ar/2% O ₂	1/2"-5/8"	180-200	25-27	25

Group 2: Metal to Metal Wear (Low-Alloy Iron-Based)

Stoody® 420

Stoody® 420 is a 420 stainless steel submerged arc wire with very good abrasion resistance and good impact resistance. Deposits polish in service to reduce friction and minimize wear of a mating part. It is readily machinable. Check-free deposits can be made up to 3/4" thick.

Applications: Brake Drums, Coiler Rolls, Rams, Pinch Rolls, Packing Glands.

Nominal Composition:

- Alloy Content - 14% (Carbon, Chromium, Manganese, Silicon)
- Iron Base

Part No.	Wire Diameter	Flux	Wire Ext.	AMPS	Volts	Spool Size (lbs.)
11407500	1/8" (3.2 mm)	Stoody® S	1"-1-1/2"	350-400	28-30	100