

# **800-341-5215**





# SELECTWEAR HARDFACING WIRES

Select-Arc Inc., a leading US manufacturer which set The Standard of Excellence in high-quality tubular joining wires, has developed over many years an extensive line of hardfacing products known as SelectWear.

SelectWear alloys are engineered to meet requirements for protecting against several types of wear phenomena, including:

- Metal to metal
- Metal to earth
- High Impact
- High Abrasion
- Elevated temperature
- Corrosion
- Combination of the above

SelectWear products can be used for restoring worn parts to original specifications and/or protecting new O.E.M. parts from wear. Select-Arc's SelectWear hardfacing line of products are designed to improve productivity by enhancing performance and reducing machinery downtime. SelectWear hardfacing wires are manufactured in our advanced technology production facility, backed by our

ISO 9001 certified quality system. Whatever type of wear challenges you have, we have the resources and products to support you. Let our team of highly experienced plant and field technical support specialists assist you with selecting the correct hardfacing alloy for your application. Our state of the art metallurgical and welding laboratories can assist you in developing your application and solving your wear challenges. Major industries using SelectWear hardfacing products:

- Agriculture
- Earth Moving Construction
- Oil and Gas
- Mining
- Steel Mills
- Power Generation
- Dredging
- Logging and Paper Mills
- Cement
- Recycling
- Rock Quarries
- Railroad



# REDUCE YOUR CARBON FOOTPRINT

Using Select-Arc's SelectWear hardfacing products, you can easily setup a wear prevention program to hardface your new O.E.M wear components before putting them into service, extending the life of the part; reducing valuable downtime and cost.

In today's economy, with cost increasing almost daily, it makes good economic sense to refurbish your worn metal components, especially when only 10% - 15% of the total components weight has been worn away and is considered no longer usable. With a SelectWear buildup and hardfacing program, and guidance from our plant and/or field technical support/application specialists, we can recommend SelectWear products to successfully refurbish your equipment. Typical refurbishment may only cost 50% or less of a new part cost. Refurbishing can also get you out of trouble by repairing an obsolete component that you can no longer purchase new. Either way, a well-planned SelectWear hardfacing program will put your components back into service, with increased wear resistance, reducing overall operating cost and protecting the environment by recycling.

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# QUICK REFERENCE GUIDE

- BUILDUP AND JOINING
- METAL TO METAL
- METAL TO EARTH

# **Process Key:**

# **BUILDUP AND JOINING**

TYPICAL USAGES	PRODUCTS	IMPACT RESISTANCE	ABRASION RESISTANCE	GENERAL INFORMATION	WELDING PROCESS	PAGE
General buildup of carbon steel and alloy steel machin- ery parts. Buffer layer before applying hardfacing.	SelectWear BU	Good	Low	Resistant to compressive loads	MCG, FCG, GV-FCG, FCO, SAW	14
Buffer / buildup layer for components under high com- pressive loads such as steel mill rolls.	Selectwear BU24 SelectWear BU30 SelectWear 8620	Good	Low	Resistant to compressive loads	SAW	14-15
Buildup of manganese steel such as crusher hammers and impact bars.	SelectWear Mn SelectWear FrogArc SelectWear GP SelectWear 19Mn	Excellent	Medium under work harden condition	Good resistance to metal to metal impact loads	FCG, FCO FCO FCO	16-17
Buildup of manganese steel, buildup of carbon steels. Joining of manganese steels, manganese to manganese and manganese to carbon steels.	SelectWear GP SelectWear 19Mn	Excellent	Medium under work harden condition	Good high tensile strength resistant to high loading metal to metal	FCO FCO	16-17

# **METAL TO METAL**

TYPICAL USAGES	PRODUCTS	IMPACT RESISTANCE	ABRASION RESISTANCE	GENERAL INFORMATION	WELDING PROCESS	PAGE
Designed for high carbon steel railroad, rail-end buildup. (Not for joining)	SelectWear Railend 932-O	Good	Low	Good resistance to metal to metal impact loads	FCO	21
Designed for high compressive loads, rolling, sliding wear, non-lubricated surfaces, such as undercarriage components on earth moving equipment.	SelectWear 42 SelectWear 43*	Good	Moderate	Good resistance to metal to metal impact loads	MCG, FCG, GV-FCG, FCO, SAW *SAW only	19
Designed for non-lubricated metal to metal surfaces such as dragline pins, steel mill rolls and metal shear blades in scrap yards.	SelectWear 52W	Good	Good	Good resistance to metal to metal impact loads	MCG, FCO, SAW	20
General Purpose Metal to Metal application	SelectWear 58	Good	Good	Good resistance to metal to metal wear	MCG, GVF- CG, FCO	26
Designed for non-lubricated metal to metal shear blades such as tire shredding knives.	SelectWear M7	Good	Good	Good resistance to metal to metal impact loads	MCG	20
Designed for non-lubricat- ed metal to metal, rolling, thermal-cycling such as steel mill rolls.	SelectWear 420 SelectWear 423 SelectWear 423N SelectWear 414N SelectWear 410NiMo	Good	Good	Good resistance to metal to metal impact loads and high temperature thermal fatigue cracking	SAW	21-23

# **METAL-TO-EARTH**

TYPICAL USAGES	PRODUCTS	IMPACT RESISTANCE	ABRASION RESISTANCE	GENERAL INFORMATION	WELDING PROCESS	PAGE
General purpose hard- facing designed for metered tungsten carbide applications.	Selectwear 57GW	Good	Good	Sightly reduced hardness to better support the tungsten car- bides particles	мсс	26
General purpose hard- facing for metal to metal and metal to earth appli- cations.	SelectWear 58	Good	Good	Good balance to impact and abrasion	MCG, GV- FCG, FCO	26
General purpose higher hardness hardfacing for metal to metal and metal to earth applications.	SelectWear 61	Good	Good	High hardness, all position non surface cross checking hard- facing	GV-FCG	31
General purpose higher hardness complex carbide hardfacing for metal to earth applications.	SelectWear 62	Good	Good	High hardness hardfacing Surface cross checking	MCG, MCO	31
Designed for surfaces subjected to impact and abrasion such as hammer crushers and handling rock.	SelectWear 44 SelectWear 50 SelectWear 600TIC	Good	Moderate	Good balance of impact and abrasion resistance	мсо	25, 34
Designed for surfaces subjected to scratching abrasion such as rock, ore, sand, coal, etc.	SelectWear 60HC	Low	Good	Lower impact resistance with higher abrasion resistance	мсо	27
For surfaces subjected to high stress abrasion such as in crushing applications like coal and cement crusher rolls and grinding rings.	Selectwear 60HCMo SelectWear ML100D SelectWear 60XHP SelectWear Multiplex-MCO	Low	High	Designed for multiple layer applications. Contact Select Arc's technical support group for more infor- mation	мсо	27, 28, 29, 33
Designed for one, two and three layer hardfaced plate applications to pro- duce high concentrations of chromium carbides on a mild steel base metal.	SelectWear WP60 SelectWear CLN60B	Low	Highest	Good high abra- sion resistance and low to moderate impact resistance	МСО	29, 30
Complex carbide alloys for one and two layer applications, highest wear resistance in the chromi- um carbide alloy family.	SelectWear 63 SelectWear 65 SelectWear Wearplex	Low	Highest	Good high abra- sion resistance and low to moderate impact resistance	МСО	32, 33

# SELECTWEAR PRODUCTS BY INDUSTRY AND APPLICATION

- AGRICULTURE
- EARTH MOVING CONSTRUCTION
- OIL AND GAS
- MINING
- STEEL MILLS
- POWER GENERATION
- DREDGING
- LOGGING / PAPER MILLS
- CEMENT
- RECYCLING
- ROCK QUARRIES
- RAILROAD

# **Process Key:**

MCG - Metal Core Gas ShieldedFCG - Flux Core Gas Shielded

MCO - Metal Core Open Arc (self shielded)

**FCO** - Flux Core Open Arc (self shielded)

**SAW** - Submerged Arc Welding

GV-FCG - All Position Flux Core Gas Shielded

# **AGRICULTURE**

APPLICATION	WEAR MODE	PRODUCT	AVAILABLE PROCESS
Swaana		SelectWear 58	MCG, FCG, GVFCG, FCO
Sweeps Chisel Points	Low to Moderate Impact and High Abrasion	SelectWear 60HC	MCO
		SelectWear 60CPMO	MCO
Ammonia Injectors		SelectWear 60XHP	MCO

# **EARTH MOVING CONSTRUCTION**

APPLICATION	WEAR MODE	PRODUCT	AVAILABLE PROCESS
Idler Rolls	Metal to Metal	SelectWear 42 SelectWear 43	MCG, FCG, GV-FCG, FCO SAW
Track Rolls Track Rails Sprockets	Metal to Metal	SelectWear BU SelectWear 42	MCG, FCG, GV-FCG, FCO SAW
Ripper Shanks	Moderate to High Impact and High Abrasion	SelectWear 600TIC SelectWear 60HC SelectWear 60HCMO SelectWear 60XHP	FCO MCG/MCO MCO MCO
Dozer Blades Buckets Bucket Teeth	Moderate to High Impact and High Abrasion	SelectWear 61 SelectWear 600TIC SelectWear 60HC SelectWear 60HCMO SelectWear 60XHP	GV-FCG FCO MCG, MCO MCO MCO

# **OIL AND GAS**

APPLICATION	WEAR MODE	PRODUCT	AVAILABLE PROCESS
Pipe ID Cladding	Slurry Abrasion,	Specially formulated chromium carbide alloys.	MCO
Elbow ID Cladding	Corrosion	Contact Select-Arc Inc. for more information.	MCO
Hardbanding	Abrasion	SelectWear 58 SelectWear 600TIC	MCG, FCG, GV-FCG, FCO FCO

# **MINING**

APPLICATION	WEAR MODE	PRODUCT	AVAILABLE PROCESS
		SelectWear 600TIC	FCO
Draglina Ruakata	High Stress Abrasion	SelectWear 60HCMO	MCO
Dragline Buckets	nigii Stress Abrasion	SelectWear ML100D	MCO
		SelectWear 60XHP	MCO
Boring Bits	High Abrasion	SelectWear NiBWC	MCG
		SelectWear 60HCMO	MCO
		SelectWear ML100D	MCO
Conveyor Pipes	High Abrasion	SelectWear 60XHP	MCO
		SelectWear WP60	MCO
		SelectWear WP60B	MCO
		SelectWear 60HC	MCG, MCO
		SelectWear 60HCMO	MCO
Augers	High Abrasion	SelectWear ML100D	MCO
		SelectWear 60XHP	MCO
		SelectWear Multiplex	MCO
		SelectWear 42	MCG, FCG, GV-FCG,
Cable Sheaves	Metal to Metal	SelectWear 52W	FCO, SAW
			MCG, FCO, SAW
Dragline Pins	Metal to Metal	SelectWear 52W	MCG, FCO, SAW
Hardfaced Plate	Abrasion and Impact	SelectWear WP60, WP60B, WearPlex, 63, 65	MCO

# **STEEL MILLS**

APPLICATION	WEAR MODE	PRODUCT	AVAILABLE PROCESS
Roll	Buildup/Buffer	SelectWear BU, BU-24, BU-30, 8620	SAW
Continuous Caster	Corrosion, Thermal Fatigue, Abrasion	SelectWear 420, 423, 423N, 414N, 410NiMo	SAW
Bell Seat	Metal to Metal	SelectWear 52W	SAW
Bell Burden Area	Abrasion	SelectWear ML100D SelectWear 60XHP	мсо

# **POWER GENERATION**

APPLICATION	WEAR MODE	PRODUCT	AVAILABLE PROCESS
Coal Crusher Rolls and Grinding Rings	High Abrasion	SelectWear ML100D SelectWear 60XHP SelectWear Multiplex SelectWear 60HCMO	МСО
Rotary Vein Wheel	High Abrasion	SelectWear 60XHP SelectWear 62 SelectWear NiBWC	MCO MCG, MCO MCG
Coal Transport Piping Mill Liner Plates	High Abrasion	SelectWear 60XHP SelectWear WP60 SelectWear WP60B SelectWear WearPlex	МСО
Clinker Grinders	Moderate Impact High Abrasion	SelectWear 600TIC SelectWear 60HCMO	FCO MCO

# **DREDGING**

APPLICATION	WEAR MODE	PRODUCT	AVAILABLE PROCESS
Pump Housings (manganese steel and carbon steel)	Abrasion and Impact	SelectWear 44	MCG, MCO
Rotary Cutter Head and Teeth	High Abrasion	SelectWear NiBWC	MCG

# **LOGGING / PAPER MILLS**

APPLICATION	WEAR MODE	PRODUCT	AVAILABLE PROCESS
Debarker	Moderate Impact Abrasion	SelectWear 50 SelectWear 61	MCO GV-FCG
Hog Teeth	Impact and Abrasion	Selectwear 60HC SelectWear 60HC Mo	MCO MCO

# **CEMENT**

APPLICATION	WEAR MODE	PRODUCT	AVAILABLE PROCESS
Vertical Mill Crusher Rolls and Grinding Rings	High Stress Abrasion	SelectWear 60HCMO SelectWear ML100D SelectWear 60XHP SelectWear Multiplex	MCO MCO MCO
High Pressure Clinker Crusher Rolls	High Stress Abrasion Under High Loading	SelectWear 600TIC	FCO
Crusher Hammers Jaw Crushers (Manganese Steel)	High Impact Abrasion	Buildup: SelectWear Mn, GP Hardfacing: SelectWear 50 SelectWear 600TIC	FCO MCO FCO
ID Fans	High Abrasion	SelectWear 60XHP SelectWear WearPlex SelectWear 63	MCO MCO
Chutes and Transport Piping	High Abrasion	SelectWear 60HC SelectWear WP60, WP60B SelectWear WearPlex	MCO MCO
Coal Crusher Mill	High Abrasion	SelectWear ML100D SelectWear 60XHP	MCO MCO

# **RECYCLING**

APPLICATION	WEAR MODE	PRODUCT	AVAILABLE PROCESS
Tire Shredding Blades	Metal to Metal Abrasion	SelectWear M7	MCG
Tub Grinder	High Impact Abrasion	SelectWear 58 SelectWear 50 SelectWear 600TIC	MCG, FCG, GV-FCG, FCO MCO FCO
Car Shredder Rotor Disc	High Impact	SelectWear GP	FCO
Shear Blades	High Stress Metal to Metal	SelectWear 52W SelectWear 58	MCG, FCO

# **ROCK QUARRIES**

APPLICATION	WEAR MODE	PRODUCT	AVAILABLE PROCESS
Two and Three Roll Crushers	Abrasion	Buildup: SelectWear GP Hardfacing: SelectWear 44, SelectWear 60HCMO	FCO FCO
Impact Rotors	Abrasion and Impact	SelectWear 60HC, 60HCMO	МСО
Impact Bars (Manganese)	High Impact Abrasion	Buildup: SelectWear GP Hardfacing: SelectWear 50, SelectWear 600TIC	FCO MCO FCO
Crusher Hammers (Manganese)	High Impact	Buildup: SelectWear Mn, GP Hardfacing: SelectWear 50 SelectWear 600TIC	FCO MCO FCO
Mantles	High Stress Abrasion	SelectWear 44, 60HCMO	мсо
Cons. Cyunhaya	High Change Abageign	Repair: SelectWear 19Mn	FCO
Cone Crushers	High Stress Abrasion	Hardface New or Repair: SelectWear 44, 60HCMO	MCO
Chutes	Abrasion	SelectWear 60HC, SelectWear ML100D	MCO

# **RAILROAD**

APPLICATION	WEAR MODE	PRODUCT	AVAILABLE PROCESS
High Carbon Steel Railends High Carbon Steel Frogs High Carbon Steel Switch Points	Metal to Metal High Loads	SelectWear 932	FCO
Austenitic Manganese Steel Frogs Austenitic Manganese Steel Components	Metal to Metal High Impact Loading	SelectWear FrogArc SelectWear 19MN	FCO

# BUILD-UP AND JOINING WIRES

- SELECTWEAR BU
- SELECTWEAR BU24-S
- SELECTWEAR BU30-S
- SELECTWEAR 8620-S
- SELECTWEAR MN
- SELECTWEAR GP
- SELECTWEAR FROGARC
- SELECTWEAR 19MN



# **SelectWear BU**

# **FEATURES:**

- A low alloy steel buildup wire
- · Good compressive strength
- · Good buffer for additional hardfacing layers
- · Use as final layer on low stress metal to metal applications

# **APPLICATION:**

- Worn carbon and low alloy steel components
- Shafts
- Gear teeth
- Steel hammers
- Mine car wheels
- Battered rail ends
- Steel mill rolls

### **DEPOSIT PROPERTIES:**

- · Chemistry: Fe-Mn-Cr
- Good compressive strength
- · Resists plastic deformation
- Moderate impact resistance hardness: 30-40 HRC
- Magnetic
- · Multiple deposit layers (with proper heat treatment)
- Surface does not cross check (cross crack)
- Good machinability

# SelectWear BU24-S

### **FEATURES:**

- A submerged arc low alloy wire for building up and or apply as a buffer layer
- Provides a tough underlayment upon which subsequent hard facing layers may be deposed, particularly in steel mill roll applications
- · Excellent compressive strength
- · Neutral flux is the recommended flux

### **APPLICATION:**

- · Build up of carbon and low alloy steels
- Steel mill rolls
- Shafts

# **DEPOSIT PROPERTIES:**

- Unlimited layers can be deposited with proper welding procedures
- Hardness (4-layer pad welded with neutral flux): 24-25 HRC (results are dependent on base metal chemistry and dilution levels)
- Machinable with carbide tools
- Good crack resistance

# **Deposit Chemistry wt%**

(4-layer pad welded with neutral flux)

C	Mn	Si	Cr	Ni	Mo	Fe
0.07	0.57	0.15	1.3	1.2	0.5	Balance

# **AVAILABLE FORMS:**

# SelectWear BU-MCG

A metal cored gas shielded wire

Diameter	Package	Part Number
0.045 in (1.2 mm)	33 lb (15 kg) Spool	1236233
1/16 in (1.6 mm)	33 lb (15 kg) Spool	1636233

# SelectWear BUGV-FCG

An all position gas shielded flux cored wire

Diameter	Package	Part Number
0.045 in (1.2 mm)	33 lb (15 kg) Spool	1241233
1/16 in (1.6 mm)	33 lb (15 kg) Spool	1641233

# SelectWear BU-FCO

A flux cored open-arc wire

Diameter	Package	Part Number
0.045 in (1.2 mm)	33 lb (15 kg) Spool	1225033
1/16 in (1.6 mm)	33 lb (15 kg) Spool	1625033

# SelectWear BU-S

A metal cored submerged arc wire (neutral flux) 18-20 HRC (results are dependent on base metal chemistry and dilution)

Diameter	Package	Part Number
3/32 in (2.4 mm)	60 lb (27.2 kg) Coil	2430560
3/32 in (2.4 mm)	500 lb (226.8 kg) Drum	2430571
1/8 in (3.2 mm)	60 lb (27.2 kg) Coil	3230560
1/8 in (3.2 mm)	500 lb (226.8 kg) Drum	3230571



# **AVAILABLE FORMS:**

### SelectWear BU24-S

A metal cored submerged arc wire (neutral flux)

Diameter	Package	Part Number
3/32 in (2.4 mm)	60 lb (27.2 kg) Coil	2459160
3/32 in (2.4 mm)	600 lb (272.2 kg) Drum	2459172
1/8 in (3.2 mm)	60 lb (27.2 kg) Coil	3259160
1/8 in (3.2 mm)	500 lb (226.8 kg) Drum	3259171



# SelectWear BU30-S

# **FEATURES:**

- SelectWear BU30-S is a submerged arc low alloy steel wire designed for buildup of carbon and low alloy steel
- Provides a tough underlayment upon which subsequent hardfacing layers may be deposed, particularly in steel mill roll applications
- Excellent compressive strength and can also be used in some low stress metal to metal abrasion situations
- · Neutral flux is the recommended flux

# **APPLICATION:**

- Steel mill rolls
- Shafts
- Wheels
- Drums

### **DEPOSIT PROPERTIES:**

- Unlimited layers can be deposited with proper welding procedures
- Hardness (3 layers welded with neutral flux): 26-33 HRC (results are dependent on base metal chemistry and dilution levels)
- Machinable with carbide tools
- Good crack resistance

# **Deposit Chemistry wt%**

### (Welded with neutral flux)

С	Mn	Si	Cr	Ni	Mo	Fe
0.11	1.2	0.8	1.1	1.6	0.3	Balance

# **Mechanical Properties**

(Welded with neutral flux)

SelectWear	PWHT	UTS (ksi/ MPa)	YS (ksi/ MPa)	Elongation %	СVN (ft∙lb • ƒ [J]) 70 °F (21 °C) / 0 °F (-18 °C)
BU30-S	1050 °F (565 °C) for 4 hours	120/827	104/717	20	90 (122) / 54 (73)

- UTS Ultimate Tensile Strength
- YS Yield Strength
- CVN Charpy V-notch (impact)
- J joules

# SelectWear 8620-S

### **FEATURES:**

- Deposits a low alloy steel designed for the buildup of carbon and low alloy steels, especially 8620
- Provides a tough underlayment upon which subsequent hard facing layers may be deposited, particularly in steel mill roll applications.
- Excellent compressive strength and can also be used in some low stress metal to metal abrasion situations
- Neutral flux is the recommended flux

# **APPLICATION:**

- Steel mill rolls
- Shafts
- Wheels
- Drums

### **DEPOSIT PROPERTIES:**

- Unlimited layers can be deposited with proper welding procedures
- Hardness (4-layer pad welded with neutral flux): 17-24 HRC (results are dependent on base metal chemistry and dilution levels)
- Good machinability
- Will not cross crack (cross check)

# **Deposit Chemistry wt%**

(4-layer pad welded with neutral flux)

С	Mn	Si	Cr	Ni	Mo	Fe
0.10	0.78	0.66	0.61	0.46	0.2	Balance

# **Mechanical Properties**

(Welded with neutral flux)

SelectWear	PWHT	UTS (ksi/ MPa)	YS (ksi/ MPa)	Elongation %	CVN [ft•lb • f [J]] -20 °F (-30 °C)
BU8620-S	As Welded	94.5	79	25.6	84.4
BU8620-S	1050 °F (565 °C) for 2 hours	94.2	78.6	25.5	83.0

- UTS Ultimate Tensile Strength
- YS Yield Strength
- CVN Charpy V-notch (impact)
- J joules

# **AVAILABLE FORMS:**

### SelectWear BU30-S

A metal cored submerged arc wire (neutral flux)

Diameter	Package	Part Number
3/32 in (2.4 mm)	60 lb (27.2 kg) Coil	2455260
3/32 in (2.4 mm)	500 lb (226.8 kg) Drum	2455271
1/8 in (3.2 mm)	60 lb (27.2 kg) Coil	3255260
1/8 in (3.2 mm)	500 lb (226.8 kg) Drum	3255271

# **AVAILABLE FORMS:**

### SelectWear 8620-S

A metal cored submerged arc wire (neutral flux)

Diameter	Package	Part Number
3/32 in (2.4 mm)	60 lb (27.2 kg) Coil	2460760
3/32 in (2.4 mm)	500 lb (226.8 kg) Drum	2460771
1/8 in (3.2 mm)	60 lb (27.2 kg) Coil	3260760
1/8 in (3.2 mm)	500 lb (226.8 kg) Drum	3260771



# **SelectWear MN**

# **FEATURES:**

- · Hadfield manganese steel build up wire
- · Very tough high strength deposits
- · Work hardens under heavy impact
- · Multiple layer buildup on austenitic manganese steels
- Joining of austenitic manganese steels
- · Available for gas shielded and open-arc welding processes

### **APPLICATION:**

- · Use on austenitic manganese steel-based metals
- Crusher rolls
- Crusher hammers
- Crusher jaws
- Bucket teeth
- Dredge components
- Shovel pads

### **DEPOSIT PROPERTIES:**

- · Hardness as deposited: 20 HRC
- Hardness work hardened: 40-50 HRC
- Deposit layers multiple
- No surface cross checks
- Non-machinable
- Non-magnetic
- Will not cross crack (cross check)
- Maximum interpass temperature is 500 °F (260 °C)

# **SelectWear GP**

# **FEATURES:**

- A premium grade high chromium, high manganese austenitic steel to rebuild and join high manganese parts
- Offers good toughness and wear resistance
- Used to buildup and join manganese steels
- Can also be used to join manganese steel to carbon steel

### **APPLICATION:**

- · Car shredder rotor disc
- Drive tumblers
- Shovel pads
- Shovel teeth
- Wobbler feeder
- Manganese frogs
- Manganese crusher rolls

# **DEPOSIT PROPERTIES:**

- Tensile Strength ksi (MPa): 130 (896)
- · Yield Strength ksi (MPa): 89 (613)
- Elongation: 26%
- Multiple deposit layers
- · Hardness (3 layers) as welded: 22 HRC
- Hardness (3 layers) work hardened: 45-52 HRC
- · Good cavitation resistance
- Machinable with carbide tools
- Will not cross crack (cross check)
- Maximum interpass temperature is 500 °F (260 °C)

# **AVAILABLE FORMS:**

# SelectWear MN-FCG

A flux cored gas shielded wire

Diameter	Package	Part Number
0.045 in (1.2 mm)	33 lb (15 kg) Spool	1224933
1/16 in (1.6 mm)	33 lb (15 kg) Spool	1624933

# SelectWear MN-FCO

A flux cored open-arc wire

Diameter	Package	Part Number
1/16 in (1.6 mm)	33 lb (15 kg) Spool	1636033
7/64 in (2.8 mm)	60 lb (27.2 kg) Coil	2836060
7/64 in (2.8 mm)	250 lb (113.4 kg) Drum	2836073

# **AVAILABLE FORMS:**

# SelectWear GP-FCO

An open-arc wire

Diameter	Package	Part Number
0.045 in (1.2 mm)	33 lb (15 kg) Spool	1220733
1/16 in (1.6 mm)	33 lb (15 kg) Spool	1620733
7/64 in (2.8 mm)	60 lb (27.2 kg) Coil	2820760
7/64 in (2.8 mm)	250 lb (113.4 kg) Drum	2820773



# SelectWear FrogArc

# **FEATURES:**

- Deposits a premium grade austenitic manganese steel with alloying designed to work harden quickly with good ductility and resistance to cracking
- Ideal for situations for high impact metal to metal or metal to earth wear
- Used to build up and repair manganese steel components
- Interpass temperature to be kept below 500 °F

# **APPLICATION:**

- Manganese railroad frogs
- Manganese castings

### **DEPOSIT PROPERTIES:**

- Unlimited layers can be deposited with proper procedure
- Hardness (3 layers) as welded: 16-22 HRC
- Hardness (3 layers) work hardened: 35-40 HRC
- Machinable with carbide tools
- Will not cross crack (cross check)
- Maximum interpass temperature is 500 °F (260 °C)

# **SelectWear 19MN**

# **FEATURES:**

- Deposits a tough high strength deposit
- Work hardens under heavy impact
- · Multiple layer buildup on austenitic manganese steels
- · Joining of austenitic manganese steels
- Deposits are austenitic on both manganese steel and carbon steel

# **APPLICATION:**

- Designed for use on austenitic manganese steel-based components:
  - Crusher rolls
  - Crusher hammers
  - Crusher jaws
  - Bucket teeth
  - · Dredge components
  - Shovel pads
- Railroad components

### **DEPOSIT PROPERTIES:**

- · Hardness as deposited: 15-20 HRC
- Hardness work hardened: 45-55 HRC
- · Deposit layers multiple
- No surface cross checks
- Non-machinable
- Non-magnetic
- Maximum interpass temperature is 500 °F (260 °C)



# **AVAILABLE FORMS:**

### SelectWear FrogArc-FCO

A flux cored open-arc wire

Diameter	Package	Part Number
5/64 in (2.0mm)	33 lb (15 kg) Spool	2056333

# **AVAILABLE FORMS:**

### SelectWear 19MN-FCO

A flux cored open-arc wire

Diameter	Package	Part Number
0.045 in (1.2 mm)	33 lb (15 kg) Spool	1256833
1/16 in (1.6 mm)	33 lb (15 kg) Spool	1656833
5/64 in (2.0mm)	33 lb (15 kg) Spool	2056833

# METAL TO METAL WEAR

- SELECTWEAR 42
- SELECTWEAR 43
- SELECTWEAR 52W
- SELECTWEAR M7
- SELECTWEAR 932
- SELECTWEAR 410NIMO
- SELECTWEAR 420
- SELECTWEAR 423
- SELECTWEAR 423N
- SELECTWEAR 414N



# SelectWear 42

### **FEATURES:**

- · Designed to resist rolling and sliding in metal to metal wear applications.
- Can be deposited in multiple layers with proper weld procedures.
- Deposits a low alloy, martensitic steel designed for low to medium stress metal to metal wear applications.

### **APPLICATION:**

- Earthmoving idlers rolls
- Mine car wheels
- Arc wheels
- Charging car wheels

# **DEPOSIT PROPERTIES:**

- · Good abrasion resistance
- Good impact resistance
- Good compressive strength
- Three layer hardness: 42-47 HRC
- Crack free
- Magnetic
- Machinable with carbide tools

# SelectWear 43-S

# **FEATURES:**

- A submerged arc wire
- Designed to resist rolling and sliding in metal to metal wear applications.
- · Can be deposited in multiple layers with proper weld procedures.
- · ARCFLUX BF-8.7 is the recommended flux

### **APPLICATION:**

- · Earthmoving idlers rolls
- Mine car wheels
- Arc wheels
- Charging car wheels

### **DEPOSIT PROPERTIES:**

- · Good abrasion resistance
- Good impact resistance
- · Good compressive strength
- Hardness: 40-45 HRC
- Crack free
- Magnetic
- Deposit layers: 4
- Machinable with carbide tools

# SelectWear 42-MCG

A metal cored gas shielded wire

Diameter	Package	Part Number
0.045 in (1.2 mm)	33 lb (15 kg) Spool	1235433
1/16 in (1.6 mm)	33 lb (15 kg) Spool	1635433
1/16 in (1.6 mm)	250 lb (113.4 kg) Drum	1635482

# **AVAILABLE FORMS:**

# SelectWear 42GV-FCG

A flux cored gas shielded all position wire

Diameter	Package	Part Number
0.045 in (1.2 mm)	33 lb (15 kg) Spool	1243233

# SelectWear 42-S

A metal cored submerged arc wire (neutral flux)

Diameter	Package	Part Number
1/8 in (3.2 mm)	60 lb (27.2 kg) Coil	3236160
1/8 in (3.2 mm)	500 lb (226.8 kg) Drum	3236171

# **AVAILABLE FORMS:**

# SelectWear 43-S

A metal cored submerged arc wire (neutral flux)

Diameter	Package	Part Number
1/8 in (3.2 mm)	60 lb (27.2 kg) Coil	3226360
1/8 in (3.2 mm)	600 lb (272.2 kg) Drum	3226372



# SelectWear 52W

# **FEATURES:**

- Similar properties to H-12
- Good hot wear properties to 1100 °F (593 °C)
- · Good for metal to metal wear
- · Multiple layers possible with proper procedures

# **APPLICATION:**

- Steel mill edger rolls
- · Pinch rolls
- Work rolls
- Leveler rolls
- · Blast furnace bell seat areas
- · Forging dies
- Dragline and bucket pins
- Shear blades

### **DEPOSIT PROPERTIES:**

- · Good abrasion resistance
- Moderate impact resistance
- Good compressive strength
- Hardness (3 layers): 49-54 HRC
- Magnetic
- No surface cross check (cross crack)
- · Machinable using carbide tools
- Hot wear applications up to 1100 °F

# **SelectWear M7**

# **FEATURES:**

- · High molybdenum, high speed tool steel alloy
- · Good balance between abrasion and impact resistance

# **APPLICATION:**

- · Hot and cold dies
- Blanking dies
- Piercing dies
- Shear blades
- Tire shredders
- Cutting and shaving knives

# **DEPOSIT PROPERTIES:**

- · Chemistry: C, Mn, Si, Cr, Mo, W (levels similar to AISI M7)
- Good abrasion resistance
- Good impact resistance
- · Hardness (2 layer): 60-65 HRC
- Not machinable (grind only)
- · Does not cross check (cross crack) with proper preheat

# AVAILABLE FORMS:

# SelectWear 52W-MCG

A metal cored gas shielded wire

Diameter	Package	Part Number
0.045 in (1.2 mm)	33 lb (15 kg) Spool	1231633
1/16 in (1.6 mm)	33 lb (15 kg) Spool	1631633

# SelectWear 52W-S

A metal cored submerged arc wire

Diameter	Package	Part Number		
1/8 in (3.2 mm)	60 lb (27.2 kg) Coil	3239960		
1/8 in (3.2 mm)	500 lb (226.8 kg) Drum	3239971		



# **AVAILABLE FORMS:**

# SelectWear M7-MCG

A metal cored gas shielded wire

Diameter	Package	Part Number	
0.045 in (1.2 mm)	33 lb (15 kg) Spool	1240433	
1/16 in (1.6 mm)	33 lb (15 kg) Spool	1640433	



# SelectWear 932

# **FEATURES:**

- Self-shielding open-arc flux cored wire suitable for in situ welding
- Designed for the repair of high carbon steel railroad tracks and high carbon steel railroad switch frogs
- It has excellent tensile strength to maintain required rail dimension

# **APPLICATION:**

- · Carbon steel railroad frogs
- · Carbon steel railroad rail ends
- Carbon steel railroad crossings
- · Carbon steel rail wheel burns

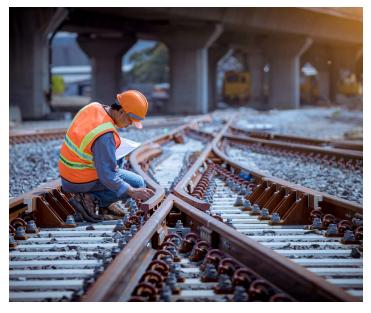
# **DEPOSIT PROPERTIES:**

- · Moderate abrasion resistance
- Excellent impact resistance
- Hardness (3 layers) 35-41 HRC
- Multiple deposit layers with proper procedures
- · Machinable with carbide tools

# **Preheat and Post Weld Heat Treat Temperatures**

Rail Type	Preheat	PWHT *
Standard High Carbon	700 °F (371 °C)	1000 °F (538 °C)
Alloy Rail	1000 °F (538 °C)	1200 °F (649 °C)

<sup>\*</sup> Immediately after the welding is completed, the weld areas should be post weld heat treated to the recommended temperature, and then slow cooled.



# **AVAILABLE FORMS:**

# SelectWear 932 -FCO

A flux cored open-arc wire

Diameter	Package	Part Number		
5/64 in (2.0mm)	33 lb (15 kg) Spool	2056233		

# SelectWear 410NIMO

### **FEATURES:**

- A low carbon martensitic stainless steel
- Resistance to thermal fatigue (Fire Cracking)
- · Good corrosion resistance.
- · Improved hot hardness
- Good wear resistance
- · Uniform tempering response

### **APPLICATION:**

- · Continuous caster rolls
- Table rolls

# **DEPOSIT PROPERTIES:**

- Thermal Fatigue Resistance Good
- · Abrasion Resistance Good
- · Compressive Strength Good
- As-welded hardness (3 layers welded with neutral flux): 36-39 HRC
- · Machinability with carbide tools Fair

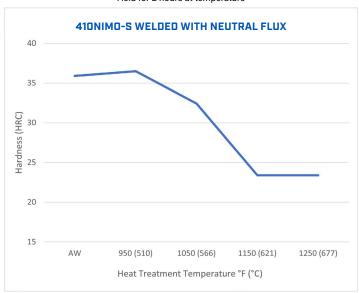
# **Deposit Chemistry wt%**

(4-layer pad welded with neutral flux)

С	Mn	Si	Cr	Ni	Mo	Fe	
0.06	0.7	0.3	12.5	2.0	1.0	Bal.	

# Heat Treatment Data

Held for 2 hours at temperature



### **AVAILABLE FORMS:**

# SelectWear 410NIMO-S

A metal cored submerged arc wire (neutral flux )

Diameter	Package	Part Number
3/32 in	60 lb Coil	2434660
3/32 in	500 lb Drum	2434671
1/8 in	60 lb Coil	3234660
1/8 in	500 lb Drum	3234671
5/32 in	60 lb Coil	4034660
5/32 in	500 lb Drum	4034671

Standard packaging for small diameter hardfacing wires 0.045 in (1.2 mm) and 1/16 in (1.6 mm) is 33 lb (15 kg) spools; larger drum packages for robotic operations are available upon request. Standard packages for large diameter wire 3/32 in (2.4mm), 7/64 in (2.8mm) and 1/8 in (3.2 mm) are 60 lb (27.2 kg) coils and 500 lb (226.8 kg) drums. Additional diameters and packaging options are available upon request, but may require a minimum order quantity and be subject to production lead times at the time of order. Please contact customer service for details.



# SelectWear 420

### **FEATURES:**

- A martensitic stainless steel
- · Resistant to fire cracking
- Good wear resistance

# **APPLICATION:**

Continuous caster rolls

# **DEPOSIT PROPERTIES:**

- · Good thermal fatigue resistance
- · Good abrasion resistance
- · Compressive strength
- As-welded hardness (4 layers welded with neutral flux): 43-48 HRC
- · Fair machinability with carbide tools

# **Deposit Chemistry wt%**

[4-layer pad welded with neutral flux]

С	Mn	Si	Cr	Fe
0.17	.8	1.2	12.1	Balance

# SelectWear 423

### **FEATURES:**

- A stabilized martensitic stainless steel with nickel and molybdenum additions
- · Improved resistance to thermal fatigue
- Improved corrosion resistance
- Resists thermal cracking
- Good hot hardness
- Good wear resistance
- Uniform tempering response

# **APPLICATION:**

- Continuous caster rolls
- Table rolls

# **DEPOSIT PROPERTIES:**

- · Excellent thermal fatigue resistance
- Very good abrasion resistance
- Good compressive strength
- As-welded hardness (3 layers welded with neutral flux): 42-46 HRC
- · Fair machinability with carbide tools

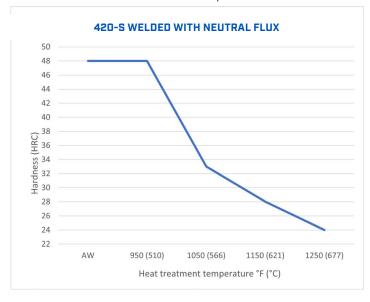
# **Deposit Chemistry wt%**

(3-layer pad welded with neutral flux)

С	Mn	Si	Cr	Ni	Мо	V	Nb	Fe	
0.12	1.9	0.7	12.5	2.2	1.0	0.2	0.2	Bal.	_

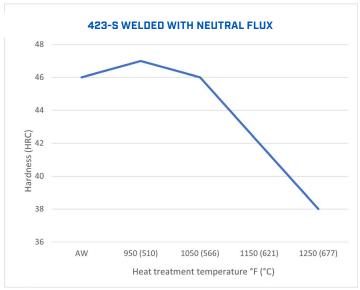
# Heat Treatment Data

Held for 2 hours at temperature



# Heat Treatment Data

Held for 2 hours at temperature



# **AVAILABLE FORMS:**

### SelectWear 420-S

A metal cored submerged arc wire (neutral flux)

Diameter	Package	Part Number	
1/8 in (3.2 mm)	60 lb (27.2 kg) Coil	3212760	
1/8 in (3.2 mm)	500 lb (226.8 kg) Drum	3212771	

# **AVAILABLE FORMS:**

### SelectWear 423-S

A metal cored submerged arc wire (neutral flux)

Diameter	Package	Part Number
3/32 in (2.4 mm)	60 lb (27.2 kg) Coil	2430760
3/32 in (2.4 mm)	500 lb (226.8 kg) Drum	2430771
1/8 in (3.2 mm)	60 lb (27.2 kg) Coil	3230760
1/8 in (3.2 mm)	500 lb (226.8 kg) Drum	3230771



# SelectWear 423N

### **FEATURES:**

- A stabilized 423 martensitic stainless steel with the addition of nitrogen
- Best resistance to thermal fatigue
- · Best corrosion resistance
- Best resistance to thermal cracking
- Good hot hardness
- Good wear resistance
- Uniform Tempering response

### **APPLICATION:**

- · Continuous caster rolls
- Table rolls

# **DEPOSIT PROPERTIES:**

- Excellent thermal fatigue resistance
- · Very good abrasion resistance
- · Good compressive strength
- As-welded hardness (4 layers welded with neutral flux): 40-42 HRC
- · Machinable with carbide tools

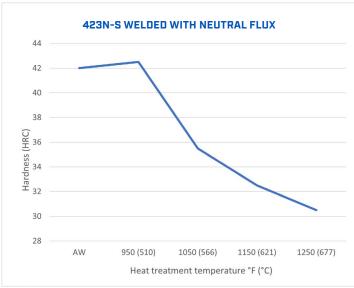
# **Deposit Chemistry wt%**

(4-layer pad welded with neutral flux)

С	Mn	Si	Cr	Ni	Mo	N	Fe
0.11	1.1	0.7	11.8	2.9	.9	0.06	Bal.

# Heat Treatment Data

Held for 2 hours at temperature



# **AVAILABLE FORMS:**

### SelectWear 423N-S

A metal cored submerged arc wire (neutral flux)

Diameter	Package	Part Number
3/32 in (2.4 mm)	60 lb (27.2 kg) Coil	2446160
3/32 in (2.4 mm)	600 lb (272.2 kg) Drum	2446172
1/8 in (3.2 mm)	60 lb (27.2 kg) Coil	3246160
1/8 in (3.2 mm)	600 lb (272.2 kg) Drum	3246172

# **SelectWear 414N**

### **FEATURES:**

- SelectWear 414N is a martensitic stainless steel with the addition of nitrogen
- Good resistance to thermal shock resistance
- Good corrosion resistance
- Good erosion resistance
- Good abrasion resistance

### **APPLICATION:**

- · Continuous Caster Rolls
- Table Rolls

# **DEPOSIT PROPERTIES:**

- · Resist Thermal Fatigue
- Resist Corrosion/Erosion
- Resist Wear
- Resist Galling
- As welded hardness 40-45 HRC

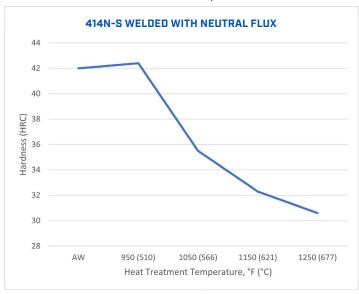
# **Deposit Chemistry wt%**

(4-layer pad welded with neutral flux)

C	Mn	Si	Cr	Ni	Мо	٧	N	Fe
0.07	1.4	0.7	13.4	3.1	1.0	0.19	0.07	Bal.

### **Heat Treatment Data**

Held for 2 hours at temperature



# **AVAILABLE FORMS:**

# SelectWear 414N-S

A metal cored submerged arc wire (neutral flux)

Diameter	Package	Part Number
3/32 in (2.4 mm)	60 lb (27.2 kg) Coil	2460260
3/32 in (2.4 mm)	500 lb (226.8 kg) Drum	2460271
1/8 in (3.2 mm)	60 lb (27.2 kg) Coil	3260260
1/8 in (3.2 mm)	500 lb (226.8 kg) Drum	3260271
5/32 in (4.mm)	60 lb (27.2 kg) Coil	4060260
5/32 in (4.mm)	500 lb (226.8 kg) Drum	4060271

# METAL TO EARTH WEAR

- SELECTWEAR 44
- SELECTWEAR 50
- SELECTWEAR 57GW
- SELECTWEAR 58
- SELECTWEAR 60HB
- SELECTWEAR 60HC
- SELECTWEAR 60HCMO
- SELECTWEAR ML1000
- SELECTWEAR 60XHP
- SELECTWEAR WP60
- SELECTWEAR WP60B
- SELECTWEAR CLN60B
- SELECTWEAR 61
- SELECTWEAR 62
- SELECTWEAR 63
- SELECTWEAR 65
- SELECTWEAR MULTIPLEX
- SELECTWEAR WEARPLEX
- SELECTWEAR 600TIC
- SELECTWEAR ZUCAR



# SelectWear 44

# **FEATURES:**

- · An open-arc, metal cored wire
- Deposit consists of uniformly dispersed chromium carbides in a semiaustenitic matrix
- Good balance of impact and abrasion
- Develops a light crosscheck pattern allowing the material to be applied in multiple layers without difficulty
- · It is typically used on carbon, low alloy, and manganese steels
- Very good weldability

### **APPLICATION:**

- Crusher rolls
- Cones
- Hammers
- Gyratory mantles
- Bucket lips
- Carbon steel and manganese steel dredge pump shells

# **DEPOSIT PROPERTIES:**

- Good abrasion resistance
- Good impact resistance
- Hardness (3 layers) on carbon steel: 42-46 HRC
- Non-machinable

# SelectWear 50

# **FEATURES:**

- A metal cored open-arc wire
- Deposit consists of uniformly distributed chromium carbides in a semi-austenitic matrix
- Good resistance to both moderate wear and impact

# **APPLICATION:**

- Scraper sides and cutters
- · Pug mill paddles
- · Vibratory ditcher shanks
- Augers
- Tamper tool
- Rock crushing hammers
- Manganese Impactor bars
- Dredge components

# **DEPOSIT PROPERTIES:**

- Good Abrasion Resistance
- Moderate Impact Resistance
- Recommended to be applied with a maximum of 3 layers
- Hardness (3 layers): HRC 49-54
- Non-machinable
- Deposits will cross check (cross crack)

# **AVAILABLE FORMS:**

# SelectWear 44-MCO

A metal cored open-arc wire

Diameter	Package	Part Number
0.045 in (1.2 mm)	33 lb (15 kg) Spool	1225133
1/16 in (1.6 mm)	33 lb (15 kg) Spool	1625133
7/64 in (2.8 mm)	125 lb (56.7 kg) Drum	2825190-1

# **AVAILABLE FORMS:**

# SelectWear 50-MC0

Diameter	Package	Part Number	
0.045 in (1.2 mm)	33 lb (15 kg) Spool	1220633	
1/16 in (1.6 mm)	33 lb (15 kg) Spool	1620633	
1/16 in (1.6 mm)	60 lb (27.2 kg) Coil	1620660	
7/64 in (2.8 mm)	60 lb (27.2 kg) Coil	2820660	



# SelectWear 57GW

# **FEATURES:**

- SelectWear 57GW is a metal cored gas shielded wire that deposits an iron based, martensitic alloy, developed for a matrix system where tungsten carbide particles are dropped into the molten weld pool
- The SelectWear 57GW-MCG deposit exhibit a higher ductility than our standard SelectWear 58 improving tungsten carbide particle retention and making them less likely to be pulled out during service of higher impact

### APPLICATION:

- Matrix system for dropped carbide application such as:
  - Debarking knives
  - Agricultural tillage
  - Chisel plows
  - · Dredge components
  - · Earthmoving bucket lips
  - Extruder screws
  - Recycling shredder knives and hammers

# **DEPOSIT PROPERTIES:**

- · Can be deposited in multiple layers
- Hardness (3 layers): 54-58 HRC
- Non-machinable
- No surface cross checking

# **SelectWear 58**

### **FEATURES:**

- General purpose iron based martensitic hardfacing alloy for:
  - Metal to metal wear
  - Metal to earth wear
- · Good balance between impact resistance and abrasion resistance
- Available in metal cored gas shielded, flux cored all position gas shielded and flux cored open-arc self-shielding

### **APPLICATION:**

- Debarking knives
- Agricultural tillage
- Chisel plows
- Dredge components
- Earthmoving bucket lips
- Extruder screws
- · Repairing worn areas on AR plate

# **DEPOSIT PROPERTIES:**

- · Good abrasion resistance
- · Good impact resistance
- Hardness on carbon steel: 56-60 HRC
- Deposit layers: 2
- · Magnetic on low alloy and carbon steel
- · Non-magnetic on manganese steel
- No surface cross checking
- Non-machinable

# **AVAILABLE FORMS:**

# SelectWear 57GW-MCG

A metal cored gas shielded wire

Diameter	Package	Part Number
0.045 in (1.2 mm)	33 lb (15 kg) Spool	1232133
1/16 in (91.6 mm)	33 lb (15 kg) Spool	1632133

# **AVAILABLE FORMS:**

# SelectWear 58-MCG

A metal cored gas shielded wire

Diameter	Package	Part Number
0.035" (0.9mm)	33 lb (15 kg) Spool	0918733
0.045 in (1.2 mm)	33 lb (15 kg) Spool	1218733
1/16 in (1.6 mm)	33 lb (15 kg) Spool	1618733

# SelectWear 58GV-FCG

A flux cored gas shielded all position wire

Diameter	Package	Part Number
0.045 in (1.2 mm)	33 lb (15 kg) Spool	1229533
1/16 in (1.6 mm)	33 lb (15 kg) Spool	1629533

# SelectWear 58-FCO

A flux cored open-arc wire

Diameter	Package	Part Number
0.045 in (1.2 mm)	33 lb (15 kg) Spool	125333
1/16 in (1.6 mm)	33 lb (15 kg) Spool	165333



# **SelectWear 60HB**

# **FEATURES:**

- A non-chromium bearing hardfacing wire which results in a deposit that has wear resistance and hardness equal to or greater than conventional chromium carbide deposits
- Specially formulated to eliminate chromium in the wire and still
  provide outstanding wear resistance as there is no chromium in the
  wire, the emission of hexavalent chromium during welding is reduced
  or completely eliminated (depending on the chromium content of the
  base metal or pre-existing weld deposit)

# **APPLICATION:**

- Agriculture
- Quarrying
- Mining

### **DEPOSIT PROPERTIES:**

- · Excellent abrasion resistance
- · Low to moderate impact resistance
- Maximum of 2 layers is recommended
- Hardness: 62-66 HRC
- Will not cross check
- Non-machinable: grinding only
- Slightly magnetic on stainless steel
- · Magnetic on carbon steel
- Magnetic on manganese steel

# SelectWear 60HC

# **FEATURES:**

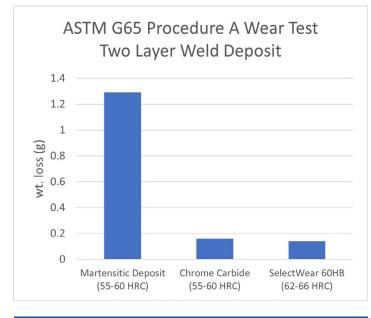
- Produces a high density of primary chromium carbides
- Weld deposits produces a fine self-stress relieving cross check pattern
- · Recommended for high abrasion and moderate impact applications
- Hot wear to 1100 °F (593 °C)

### **APPLICATION:**

- Tillage tools
- Ripper shanks
- · Large bucket lips and teeth
- · Augers and auger flights
- Crusher cage pins
- Wear plates and ID of pipes

# **DEPOSIT PROPERTIES:**

- Good abrasion resistance
- Moderate impact resistance
- Hardness (2 layers): HRC 58-64
- · Surface cross checks (cross cracks)
- Non-machinable





# **AVAILABLE FORMS:**

### SelectWear 60HB-MC0

A metal cored open-arc wire

Diameter	Package	Part Number
0.045 in (1.2 mm)	33 lb (15 kg) Spool	1239133
1/16 in (1.6 mm)	33 lb (15 kg) Spool	1639133
7/64 in (2.8 mm)	60 lb (27.2 kg) Coil	2839160

# **AVAILABLE FORMS:**

### SelectWear 60HC-MC0

Diameter	Package	Part Number
0.045 in (1.2 mm)	33 lb (15 kg) Spool	1218433
1/16 in (1.6 mm)	33 lb (15 kg) Spool	1618433



# SelectWear 60HCM0

### **FEATURES:**

- SelectWear 60HCMO produces a High Density of Primary Chromium Carbides in a austenitic matrix.
- Weld deposits produces a fine self-stress relieving cross check pattern
- Recommended for high abrasion and moderate impact applications
- Typically recommended for two layer applications, but with special automated weld procedures it can be applied in multiple layers on coal and cement grinding rolls and grinding rings. (Contact Select-Arc's technical support group for more information)
- Hot Wear to 1100° (593 °C)

# **APPLICATION:**

- · Crusher rolls & grinding rings
- Ripper shanks
- · Large bucket lips and teeth
- Augers and auger flights
- · Crusher cage pins
- Sugar mill rolls
- Wear plates and ID of pipes

### **DEPOSIT PROPERTIES:**

- Good abrasion resistance
- Moderate impact resistance
- Hardness (2 layers): HRC 58-62
- Surface cross checks (cross cracks)
- Non-machinable

# SelectWear ML100D

# **FEATURES:**

- SelectWear ML100D is a higher alloyed wire than 60HCMO which produces a higher density of primary chromium carbides in a austenitic matrix.
- Weld deposits produces a fine self-stress relieving cross check pattern
- Recommended for high abrasion and moderate impact applications
- Typically recommended for two layer applications, but with automated weld procedures it can be applied multiple layers on coal and cement grinding rolls and grinding rings. (Contact Select-Arc's technical support group for more information)
- Hot Wear to 1100° (593 °C)

### **APPLICATION:**

- · Crusher rolls & grinding rings
- Ripper shanks
- · Large bucket lips and teeth
- Augers and auger flights
- · Crusher cage pins
- Sugar mill rolls
- · Wear plates and ID of pipes

### **DEPOSIT PROPERTIES:**

- Good abrasion resistance
- Moderate impact resistance
- Hardness (2 layers): HRC 57-62
- Surface cross checks (cross cracks)
- Non-machinable

# **AVAILABLE FORMS:**

# SelectWear 60HCMo-MCO

A metal cored self shielded open-arc wire

Diameter	Package	Part Number
7/64 in (2.8 mm)	60 lb (27.2 kg) Coil	2857360
7/64 in (2.8 mm)	500 lb (226.8 kg) Drum	2857371

# **AVAILABLE FORMS:**

# SelectWear ML100D-MC0

A metal cored self shielded open-arc wire

Diameter	Package	Part Number	
7/64 in (2.8 mm)	60 lb (27.2 kg) Coil	2857260	
7/64 in (2.8 mm)	500 lb (226.8 kg) Drum	2857271	
1/8 in (3.2 mm)	60 lb (27.2 kg) Coil	3257260	
1/8 in (3.2 mm)	500 lb (226.8 kg) Drum	3257271	



# SelectWear 60XHP

# **FEATURES:**

- SelectWear 60XHP is a metal cored open-arc wire
- Designed to produce a high concentration of uniformly distributed small primary chromium carbides in an austenitic matrix
- Optimized formulation results in superior weldability for a broad range of single and multiple layer applications.
- The high concentration of small primary carbides greatly improves wear resistance and toughness over conventional chromium carbide alloys

### **APPLICATION:**

- ID pipe & elbow cladding
- Wear plates
- Multiple layer build up on coal and cement pulverizing rolls and grinding rings
- Sugar mill rolls
- Farm implements

# **DEPOSIT PROPERTIES:**

- Hardness: 60-65 HRC
- Moderate impact resistance
- Surface will cross check (cross crack)
- Non-machinable
- · Non-magnetic on carbon steel
- Slightly magnetic on manganese steel

# SelectWear WP60

# **FEATURES:**

- A metal cored open-arc wire that produce a high density of chromium carbides in an iron matrix
- Designed for single and double layer hardface plate applications
- · Generates carbides in the first layer
- Exhibits superior wear resistance in both single and double layer

### **APPLICATION:**

- Wear plates
- Clad pipe ID

### **DEPOSIT PROPERTIES:**

- Chemistry: Fe-Cr-C
- Maximum of 3 layers is recommended
- Hardness (2 layers): HRC 58-62
- Non-machinable
- Deposits will cross check (cross crack)

# **AVAILABLE FORMS:**

# SelectWear 60XHP-MC0

A metal cored open-arc wire

Diameter	Package	Part Number
0.045 in (1.2 mm)	33 lb (15 kg) Spool	1248333
1/16 in (1.6 mm)	33 lb (15 kg) Spool	1648333
7/64 in (2.8 mm)	60 lb (27.2 kg) Coil	2848360
7/64 in (2.8 mm)	500 lb (226.8 kg) Drum	2848371

# **AVAILABLE FORMS:**

# SelectWear WP60-MC0

Diameter	Package	Part Number	
7/64 in (2.8 mm)	500 lb (226.8 kg) Drum	2844571	
1/8 in (3.2 mm)	500 lb (226.8 kg) Drum	3244571	



# SelectWear WP60B

# **FEATURES:**

- A metal cored open-arc wire that produces a high density of chromium carbides in an iron matrix.
- Boron enhancement improves matrix hardness and increased wear resistance
- Design for single and double layer hardface plate applications
- Generates Higher carbide concentration in the first layer than standard WP60
- Exhibits superior wear resistance in both single and double layer
- · Can be applied weave beads or stringer bead

# **APPLICATION:**

- Wear plates
- · Clad pipe ID

### **DEPOSIT PROPERTIES:**

- · Chemistry: Fe-Cr-C-B
- Maximum of 3 layers is recommended
- Hardness (2 layers): HRC 59-63
- Non-machinable
- Deposits will cross check (cross crack)

# SelectWear CLN60B

# **FEATURES:**

- A metal cored open-arc wire that produces a high density of chromium carbides in an iron matrix, with the addition of Boron to improve matrix hardness and increase wear resistance
- Design for single and double layer hardface plate applications.
- · Generates carbides in the first layer
- · Exhibits superior wear resistance in both single and double layer

### **APPLICATION:**

- Wear plates
- Clad pipe ID

# **DEPOSIT PROPERTIES:**

- · Chemistry: Fe-Cr-C-B
- Maximum of 3 layers is recommended
- Hardness (2 layers): HRC 59-63
- Non-machinable
- · Deposits will cross check (cross crack)

# **AVAILABLE FORMS:**

# SelectWear WP60B-MC0

A metal cored open-arc wire

Diameter	Package	Part Number
7/64 in (2.8 mm)	500 lb (226.8 kg) Drum	2844671
1/8 in (3.2 mm)	500 lb (226.8 kg) Drum	3244671

# **AVAILABLE FORMS:**

# SelectWear CLN60B-MC0

Diameter	Package	Part Number	
7/64 in (2.8 mm)	500 lb (226.8 kg) Drum	2858271	
1/8 in (3.2 mm)	500 lb (226.8 kg) Drum	3258271	



# **SelectWear 61**

### **FEATURES:**

- A gas shielded all position flux cored wire designed for general purpose hardfacing
- Offers exceptionally high hardness (HRC 57-62) without cross check cracking
- Good balance between impact resistance and abrasion resistance
- Excellent choice for components that are required to maintain a sharp edge.
- Good for metal to metal and metal to earth applications

# **APPLICATION:**

- Farm tillage tools
- Dredge parts
- · Sliding metal to metal parts
- Drag line bucket lip
- Extruder screws
- Tamper feet
- Churn drill
- Shredder knives

### **DEPOSIT PROPERTIES:**

- · Good abrasion resistance
- Good impact resistance
- Hardness (2 layers): HRC 57-62
- Maximum of 3 layers is recommended, 2 is standard
- · Magnetic on low alloy and carbon steel
- Surface does not cross check (cross crack)
- Machinability grind only

# SelectWear 62

# **FEATURES:**

- SelectWear 62 is a complex carbide metal cored wire, containing chromium and multiple secondary carbides
- Offers high hardness (HRC 62-66)
- Good abrasion resistance and moderate impact resistance
- Good metal to earth applications

### **APPLICATION:**

- · Farm tillage tools
- Dredge parts
- Bucket lip.
- Extruder screws
- Tamper feet
- Fan blades

# **DEPOSIT PROPERTIES:**

- · Chemistry: Fe-Cr-Mo-V-B-C
- · Good abrasion resistance
- Moderate impact resistance
- Hardness (2 layer): HRC 62-66
- Deposit layers: 2
- Non-machinable
- Deposits will cross check (cross crack)

# **AVAILABLE FORMS:**

# SelectWear 61GV-FCG

An all position gas shielded flux cored wire

Diameter	Package	Part Number
0.045 in (1.2 mm)	33 lb (15 kg) Spool	1258033
1/16 in (1.6 mm)	33 lb (15 kg) Spool	1658033

# **AVAILABLE FORMS:**

# SelectWear 62-MCO

Diameter	Package	Part Number
0.045 in (1.2 mm)	33 lb (15 kg) Spool	1225933
1/16 in (1.6 mm)	33 lb (15 kg) Spool	1625933



# **SelectWear 63**

### **FEATURES:**

- · A metal cored open-arc wire
- Deposits are primary chromium carbides and secondary columbium carbides in an austenitic matrix
- Wear life can be increased by as much as 33% over standard chromium carbide alloys
- Will retain hardness and wear resistance up to 1100 °F
- Available in MCO (self-shielded metal cored)

### **APPLICATION:**

- Coal and steel exhaust fan blades, crushers, coke pusher shoes, wear plates, hoppers, shoots, and screens.
- Cement screws, cement dryers, hot cement cones, cement furnace parts, mixer blades, presses
- Mining wear plates, excavator bucket teeth, conveyor screws, slurry pipes

# **DEPOSIT PROPERTIES:**

- Excellent abrasion resistance
- Low impact resistance
- Hardness (2 layers): HRC 60-63
- Surface will cross check (cross crack)
- Non-machinable: grind only

# SelectWear 65

### **FEATURES:**

- Metal cored open-arc wire
- Deposits are a high density of primary chromium carbides with multiple secondary carbides of columbium (niobium), molybdenum vanadium and tungsten
- Excellent abrasion resistance
- · Low impact resistance
- Specially designed for one and two layer deposits exposed to high temperature up to 1400 °F (760 °C)

# **APPLICATION:**

- Coal and steel exhaust fan blades, crushers, coke pusher shoes, wear plates, hoppers, shoots and screens.
- Cement screws, cement dryers, hot cement cones, cement furnace parts, mixer blades, presses
- Mining wear plates, excavator bucket teeth, conveyor screws, slurry pipes

### **DEPOSIT PROPERTIES:**

- · Excellent abrasion resistance
- Low impact resistance
- Hardness (2 layer): HRC 59-65
- · Surface will cross check (cross crack)

# **AVAILABLE FORMS:**

# SelectWear 63-MCO

A metal cored open-arc wire

Diameter	Package	Part Number
1/16 in (1.6 mm)	33 lb (15 kg) Spool	1619433
7/64 in (2.8 mm)	60 lb (27.2 kg) Coil	2819460
7/64 in (2.8 mm)	500 lb (226.8 kg) Drum	2819471
1/8 in (3.2 mm)	500 lb (226.8 kg) Drum	3219471

# **AVAILABLE FORMS:**

# SelectWear 65-MCO

Diameter	Package	Part Number
1/16 in (1.6 mm)	33 lb (15 kg) Spool	1628533
7/64 in (2.8 mm)	60 lb (27.2 kg) Coil	2828560
7/64 in (2.8 mm)	500 lb (226.8 kg) Drum	2828571



# **SelectWear MultiPlex**

### **FEATURES:**

- SelectWear MultiPlex is a complex chromium carbide, metal cored open-arc wire.
- Designed to produce a high concentration of uniformly distributed small primary chromium carbides, and secondary niobium/vanadium carbides in an austenitic matrix.
- Optimized formulation results in superior weldability for a broad range of single and multiple layer applications.
- The high concentration of small primary carbides greatly improves wear resistance and toughness over conventional chromium carbide alloys.

# **APPLICATION:**

- Multiple layer build up on coal and cement pulverizing rolls and grinding rings
- · ID pipe and elbow cladding
- Wear plates
- Sugar mill rolls
- Farm implements

# **DEPOSIT PROPERTIES:**

- Hardness: 60-65 HRC
- Moderate impact resistance
- Surface will cross check (cross crack)
- Non-machinable
- Magnetic on carbon steel
- · Slightly magnetic on manganese steel

# **SelectWear WearPlex**

### **FEATURES:**

- A complex chromium carbide metal cored open-arc wire
- Designed to produce a higher concentration of uniformly distributed small primary chromium carbides, and secondary Niobium, and Vanadium carbides in an austenitic matrix
- An enhanced version of our SelectWear MultiPlex-MCO resulting in superior weldability and increased carbide generation in single layer applications greatly improving wear resistance
- Suitable for one, two and three layer hardfacing on plate and ID pipe applications
- The high concentration of small primary carbides greatly improves wear resistance and toughness over conventional chromium carbide alloys

### **APPLICATION:**

- . ID pipe and elbow cladding
- Wear plates

# **DEPOSIT PROPERTIES:**

- Hardness: 60-65 HRC
- Moderate impact resistance
- Surface will cross check (cross crack)
- Non-machinable
- · Magnetic on carbon steel
- · Slightly magnetic on manganese steel

# **AVAILABLE FORMS:**

# SelectWear MultiPlex-MCO

A metal cored open-arc wire

Diameter	Package	Part Number
7/64 in (2.8 mm)	60 lb (27.2 kg) Coil	2858160
7/64 in (2.8 mm)	500 lb (226.8 kg) Drum	2858171
1/8 in (3.2 mm)	500 lb (226.8 kg) Drum	3258171

# **AVAILABLE FORMS:**

# SelectWear WearPlex-MCO

Diameter	Package	Part Number
7/64 in (2.8 mm)	60 lb (27.2 kg) Coil	2860560
7/64 in (2.8 mm)	500 lb (226.8 kg) Drum	2860571
1/8 in (3.2 mm)	500 lb (226.8 kg) Drum	3260571



# SelectWear 600TIC

# **FEATURES:**

- Deposits a high-volume fraction of complex titanium carbides in an austenitic/martensitic matrix.
- High abrasion resistance with excellent impact resistance under high pressure loads.
- Good weldability and slag release.

# **APPLICATION:**

- · High pressure cement clinker rolls
- Bucket lips
- Muller tires
- Hammer crushers
- Tillage tools
- · Chisel plows
- Tamper feet
- Hard banding
- · Sugar mill hammers and knives

# **DEPOSIT PROPERTIES:**

- · Very good abrasion resistance
- · High impact resistance
- Typical hardness and wear resistance listed below

Note: SelectWear 600TIC is a unique alloy in that the first layer applied has a more martensitic matrix structure and as the second and third layers are deposited the matrix structure transforms to a more austenitic matrix. As you can see on the ASTM G65 chart below, the lower matrix hardness has little effect on the wear resistance due to the increase in additional carbides being formed with each additional layer being applied.

Number of Layers	Hardness HRC	ASTM G65 Method A Weight Loss in Grams
1	57	0.173
2	38	0.124
3	40	0.092

# **AVAILABLE FORMS:**

# SelectWear SelectWear 600TIC-FC0

A flux cored open-arc wire

Diameter	Package	Part Number
0.045 in (1.2 mm)	33 lb (15 kg) Spool	1253433
1/16 in (1.6 mm)	33 lb (15 kg) Spool	1653433
3/32 in (2.4 mm)	60 lb (27.2 kg) Coil	2453460

# SelectWear ZUCAR

# **FEATURES:**

- A metal cored open-arc wire specially formulated for "Tear Drop (Picote) and Roll Arcing (Chapisco)" roughing of the surface on sugar mill press rolls. The rough surface aids in pulling the sugar cane through the press rolls
- Special additives added to the wire help maintain continuous arcing in wet condition

### **APPLICATION:**

· Sugar cane press rolls

### **DEPOSIT PROPERTIES:**

Hardness: 50-56 HRC



# **AVAILABLE FORMS:**

# SelectWear ZUCAR-MCO

Diameter	Package	Part Number
3/32 in (2.4 mm)	60 lb (27.2 kg) Coil	2422260

# HARDFACING PRODUCT COMPARISON CHART

# **BUILDUP AND JOINING**

SELECTWEAR	STOODY	LINCOLN	WELDING ALLOYS	HOBART/ MCKAY	RANKIN	BOHLER/UTP
BU	Build-Up	Lincore BU	T-O	Build Up	Ranomatic BU	SK-300-G/O / BU-O
BU24-S	Thermaclad 104	-	-	877	-	-
BU30-S	-	_	_	_	-	_
MN	Dynamang	Lincore M	NM14	218-0	Ranomang 1	SK-797-G/218-O/ 14MN
FrogArc	-	_	_	_	_	_
GP	Stoody 110	Lincore 15CrMn	AP-O	AP-O	Ranomang-3	SK-AP-G/O
19MN	Stoody 120	Lincore Frog- Mang	-	219-O	-	-

# **METAL TO METAL WEAR**

SELECTWEAR	STOODY	LINCOLN	WELDING ALLOYS	HOBART/ MCKAY	RANKIN	BOHLER/UTP
932-0	Railend 932	-	_	M-932	-	_
42	105/105B	Lincore 40-S	R	242-S	_	SK-242
43-S	Thermaclad 42	Lincore 42-S	P-S	242-S	_	_
52W	Thermaclad 102	Lincore 102W/102HC	WLC	258	HWT-12-G	SK-D11-G
M7	M7	Lincore M7	_	-	_	_
410NiMo-S	Thermaclad 440	Lincore 410NiMo	865	A2JL	-	_
420	Thermaclad 420	Lincore 420	420	A250	_	SK-420-SA
423-S	Thermaclad 423	Lincore 423L	414MM	865 Mod	_	_
423N-S	Thermaclad 423N	Lincore 423N	414N	_	_	_
414N-S	-	-	414N	-	_	-

# **METAL TO EARTH WEAR**

SELECTWEAR	STOODY	LINCOLN	WELDING ALLOYS	HOBART/ MCKAY	RANKIN	BOHLER/UTP
44	117	_	DP-O	244	Ranomatic BX-2	_
50	121	Lincore 50	MC-O	240	Ranomatic-O	SK-795
Zucar	_	_	_	_	_	_
57GW	_	-	-	_	_	_
58	965	Lincore 55	L	FabTuf 960	Ranomatic 969/ DD	SK-258-G/O / 500-G
58GV	965-AP-G	-	-	Vertiwear 600	-	-
600TIC	600-O	_	TIC-O	258TIC	_	SK-258-TIC
60HB	968/970	-	BN	-	-	SK-A68-G
60HC	101HC	Lincore 60G, 60-O	-	_	Ranomatic 101	SK-162-O
60НСМО	100HC	-	НС	255	_	-
ML100D	100HD	Lincore 65	НСР	-	R-100D	SK-162WP-O
60XHP	CP2000	-	-	-	R-100	-
WP60	101HD	Lincore Ultra K	Produces Similar Alloys	-	-	-
WP60B	101HWP	-	Produces Similar Alloys	-	_	-
61	_	-	-	-	_	-
62	964	-	HARDFACE BNC	-	Ranomatic D	
63	Super 20 / 143	_	CN-O	A43	_	SK-A43-O
65	145	-	CNV-O	A45	Ranomatic 23	SK-A45-O
MultiPlex	CP2001	-	-	_	-	_
WearPlex	-	-	-	-	-	-
NiBWC	160FC	-	NICARBW	_	_	_

# **PACKAGING OPTIONS**









33 lb (15 kg) Spool

60 lb (27.2 kg) Coil

250 lb (113.4 kg) Drum

Package Size  Ib (kg)	Net Weight Per Pallet    b (kg)	Pallet Dimensions in (cm)	
22 (15)	1,584 (718)	26 x 40 (66 x 101.6)	
33 (15)	2,376 (1,078)	40 x 40 (101.6 x 101.6)	
60 (27.2)	1,920 (871)	36 x 36 (91.44 x 91.44)	
250 (113.4)	1000 (454)	44 x 44 (117.76 x 117.76)	
500 (226.8)	2000 (907)	49 x 49 (124.46 x 124.46)	

# **NOTES**

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# SelectWear

HARDFACING PRODUCTS

# BUILD-UP AND JOINING

- SELECTWEAR BU
- SELECTWEAR BU24-S
- SELECTWEAR BU30-S
- SELECTWEAR 8620
- SELECTWEAR MN
- SELECTWEAR GP
- SELECTWEAR FROGARC
- SELECTWEAR 19MN

# **METAL TO METAL**

- SELECTWEAR 42
- SELECTWEAR 43
- SELECTWEAR 52W
- SELECTWEAR M7
- SELECTWEAR 932
- SELECTWEAR 410NIMO
- SELECTWEAR 420
- SELECTWEAR 423
- SELECTWEAR 423N
- SELECTWEAR 414N

# **METAL TO EARTH**

- SELECTWEAR 44
- SELECTWEAR 50
- SELECTWEAR 57GW
- SELECTWEAR 58
- SELECTWEAR 60HB
- SELECTWEAR 60HC
- SELECTWEAR 60HCMO
- SELECTWEAR ML100D
- SELECTWEAR 60XHP
- SELECTWEAR WP60
- SELECTWEAR WP60B
- SELECTWEAR CLN60B
- SELECTWEAR 61
- SELECTWEAR 62
- SELECTWEAR 63
- SELECTWEAR 65
- SELECTWEAR MULTIPLEX
- SELECTWEAR WEARPLEX
- SELECTWEAR 600TIC
- SELECTWEAR ZUCAR

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