



BMI optimizes the performance of industrial plants by supplying parts, solutions and services for all types of industries.

Welding & Hardfacing Consumables

Flux-cored wires
Flexible cords
Electrodes
Powders

BMI Group

28 Rue de la Mairie Le Puiset-Doré
49600 Montrevault-sur-Evre



+33 (0)2 41 75 69 00



contact@marybmi.com



BMI Group

Machine and equipment
manufacturers for the brick
and tile industry

Wear-resistant
materials expertise

Reverse engineering,
Retrofit, Overhaul, Rebuild



80

Men &
Women

5

Service
centers

70

Years of
experience



We design, manufacture, install and maintain **sustainable solutions** to optimize the wear life of your plants.

With a team of 80 people, we help industrial customers limit wear, reduce maintenance costs and improve equipment reliability.

A company specializing in the supply of **complete lines** for raw material preparation and processing.

PELERIN
Pièces Services Machines

SERVICES AND CERTIFIED PREMIUM QUALITY

Because we control every step in-house
Engineering, cutting, machining, hardfacing, bending, fabrication & quality control

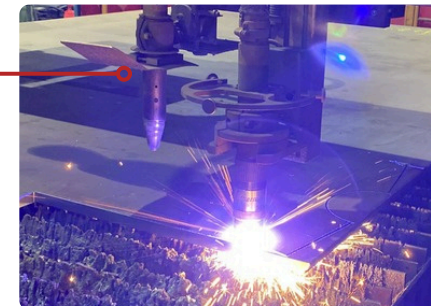
We offer our customers **unmatched responsiveness** and **seamless quality follow-up**.



Engineering office

+ Cutting shop

Laser cutting
Plasma cutting
Oxy-fuel cutting
Ironworker



+ Machining shop

CNC turning
CNC milling
EDM
Radial drilling
Screw machining



+ Fabrication shop

Press brake
Plate rolls
Boilermakers/welders
Robotic welding



Hot forging



Heat treatment

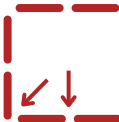
Flux-cored hardfacing wires

FCW63®

Classification	Composition (%)	
EN 14700 T Fe15	C	4.8
Hardness 1 st layer ~58 HRC	Mn	1.2
	Si	0.6
	Cr	29
2 nd layer 60-63 HRC		

Ø (mm)	Current (A)	Voltage (V)	Stick out (mm)
1.6	150-250	25-32	20-30
2.4	200-300	28-32	20-30
2.8	280-380	28-32	20-30

Welding positions:



Features:
Deposit of chromium cast iron enriched with chromium carbides in an austenitic matrix, ideal for hardfacing parts exposed to severe abrasion with moderate impact.

Applications:
Typical uses: hardfaced plates, mineral grinding and conveying components, dredge pumps, mixers, screen plates

Abrasion
★★★★☆

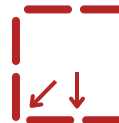
Impact
★★★☆☆

FCW63B®

Classification	Composition (%)	
EN 14700 T Fe15	C	5
Hardness 1 st layer ~60 HRC	Mn	1.5
	Si	1.5
	Cr	27
2 nd layer 63-65 HRC	B	0.4

Ø (mm)	Current (A)	Voltage (V)	Stick out (mm)
1.2	140-250	22-32	20-30
1.6	150-350	24-35	20-30
2.4	250-450	26-35	25-40
2.8	250-450	28-35	25-40

Welding positions:



Features:
Deposit of high-alloy chromium cast iron enriched with hard primary carbides in a tough austenitic matrix, providing excellent abrasion resistance and moderate impact resistance.

Applications:
Typical uses: hardfaced plates, mineral grinding and conveying components, dredge pumps, mixers, screen plates

Abrasion
★★★★☆

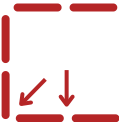
Impact
★★★☆☆

FCW65-450®

Classification	Composition (%)	
EN 14700 T Fe15	C	4.6
Hardness 1 st layer ~58 HRC	Mn	0.2
	Si	1.7
	Cr	22.8
2 nd layer 60-64 HRC	Nb	5.9

Ø (mm)	Current (A)	Voltage (V)	Stick out (mm)
1.6	150-250	25-32	25-50
2.4	200-300	28-32	25-50
2.8	280-380	28-32	25-50

Welding positions:



Features:
Robust extra-hard hardfacing for parts exposed to extremely severe abrasion with moderate impact, effective up to 450°C.

Applications:
Custom-engineered high-performance composite parts: hardfaced plates, grinding components, mineral conveying, dredge pumps, mixers, screen plates, chutes, troughs, screw conveyors, knives, blades, hoppers, tanks.

Abrasion
★★★★★

Impact
★★★★☆

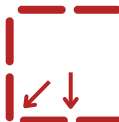
Temperature
450°C

FCW67-650®

Classification	Composition (%)	
EN 14700 T Fe15	C	6
Hardness 1 st layer ~58 HRC	Mn	0.4
	Si	1
	Cr	21
2 nd layer 60-63 HRC	Mo	6
	Nb	6.7
	W	1.7
	V	0.7

Ø (mm)	Current (A)	Voltage (V)	Stick out (mm)
1.6	150-250	25-32	25-50
2.4	200-300	28-32	25-50
2.8	280-380	28-32	25-50

Welding positions:



Features:
Deposit of chromium cast iron for hardfacing parts subjected to severe abrasion with moderate impact, effective up to 650°C.

Applications:
Typical uses: hardfaced plates, grinding components, mineral conveying, dredge pumps, mixers, screen plates, chutes, troughs, screw conveyors, knives, blades, hoppers, tanks.

Abrasion
★★★★★

Impact
★★★★☆

Temperature
650°C

Flux-cored hardfacing wires

FCW600HB®

Classification	Composition (%)	
EN 14700 T Fe2	C	0.5
Hardness	Mn	1.2
1 st layer ~550 HB	Si	0.7
Multi-layer	Cr	6
~ 600HB	Mo	0.4

Features:

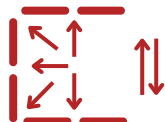
Martensitic weld metal reinforced with hard carbides, providing an excellent compromise between abrasion resistance, friction wear resistance and impact resistance, effective up to 450°C.

Applications:

Fabrication of high-performance composite parts: shear shredders, blade shredders, grinding and conveying components for the mineral industry, mixers, dredge pumps.

Ø (mm)	Current (A)	Voltage (V)	Stick out (mm)
1.2	110-300	17-30	12-25
1.6	130-350	17-32	12-25

Welding position:



Abrasion



Impact



Friction



Temperature

450°C

FCW600TIC®

Classification	Composition (%)	
EN 14700 T Fe8	C	1.8
Hardness	Mn	1.2
1 st layer 55-56 HRC	Si	0.8
2 nd layer 57 HRC	Cr	6.5
	Mo	0.8
	Ti	5
	V	0.2

Welding positions:



Features:

Robust extra-hard hardfacing for parts exposed to gouging abrasion, erosion and heavy impact.

Applications:

Alloy suited to the mineral industries: crushing hammers and rolls, excavators, disintegrators, clod breakers, gravel processing, road construction.

Abrasion



Impact



FCW650HB®

Classification	Composition (%)	
EN 14700 T Fe7	C	0.5
Hardness	Mn	1.3
1 st layer ~57 HRC	Si	1.3
Multi-layer	Cr	5.6
~ 62 HRC	Mo	1.3

Features:

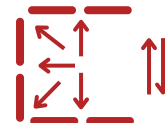
Martensitic weld metal enriched with hard carbides, ensuring an excellent compromise between abrasion, friction wear and impact, with performance maintained up to 500°C.

Applications:

Digger bucket teeth, bucket lips, bulldozer blades, crusher jaws, grader blades, chutes, pump casings, screw conveyors, wear plates, gear teeth, crusher hammers, drill bits, ploughshares, dies, punches, etc.

Ø (mm)	Current (A)	Voltage (V)	Stick out (mm)
1.2	110-300	17-30	20 ± 5
1.6	130-350	17-32	20 ± 5

Welding position:



Abrasion



Impact



Friction



Temperature

500°C

FCW60WC

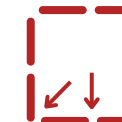
Classification	NiCrBSi matrix ~ 500-600 HV Tungsten carbide ~ 2300 HV Hardness 45-55 HRC
EN 14700 T Ni20	

Composite deposit containing tungsten carbide particles in a nickel-boron-silicon matrix

WC content: 40 to 60% depending on ø

Ø (mm)	Current (A)	Voltage (V)	Stick out (mm)
1.6	120-180	24-35	15-30
2.4	220-280	26-35	15-30
2.8	240-300	28-35	15-30

Welding positions:



Features:

Compromise between ductility and wear resistance, ideally balanced thanks to a deposit based on tungsten carbides in a hard, tough matrix, offering excellent wetting.

Applications:

Parts subject to abrasion in the mining, steel and civil engineering sectors: drilling augers, crushers, clay industry parts, earthmoving equipment, rubber mixers

Abrasion



Impact



Corrosion



Temperature

600°C

Flux-cored hardfacing wires

FCW70NANO®

Classification

EN 14700
T ZFe8

Hardness

~ 66-70 HRC

Composition (%)

C	1.1
Mn	0.6
Si	0.7
Cr	21.5
Mo	4.1
Nb	3.6
W	6.7
Fe	+
B	Bal.

Ø
(mm)

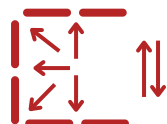
Current
(A)

Voltage
(V)

Stick out
(mm)

1.2	100-300	21-35	25-50
1.6	150-350	24-35	25-50
2.4	250-450	26-35	25-50
2.8	250-450	28-35	25-50

Welding
position:



Abrasion
★★★★★

Impact
★★★★★

Temperature
750°C

Features:

Alloy of chromium, tungsten, niobium, molybdenum and boron offering extreme abrasion resistance under heavy stress and moderate impact, suitable for temperatures up to 750°C.

Applications:

Grinding mills, excavator buckets, extrusion screws, shredders, hammers, fan blades, sintering furnaces

FCW TUF-Mn-O®

Classification

EN 14700 T Fe9

Composition (%)

C	0.4
Mn	14
Si	0.6
Cr	14.5
Fe	Bal.

Hardness

As-deposited
20 – 25 HRC

After work hardening

45 – 55 HRC

Ø
(mm)

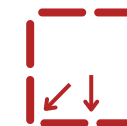
Current
(A)

Voltage
(V)

Stick out
(mm)

1.6	150-350	24-35	25-50
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Welding
positions:



Features:

Deposit of a highly work-hardening austenitic stainless alloy, offering excellent resistance to impact and heavy loads.

Applications:

Equipment for crushing and grinding, railway track components (frogs, switches), hydraulic press pistons, demolition hammers and tools, dredging and abrasive-material pumps, any component requiring an impact- and wear-resistant surface

Abrasion

★★★★☆

Impact

★★★★★

Friction

★★★☆☆

Filler metal selection

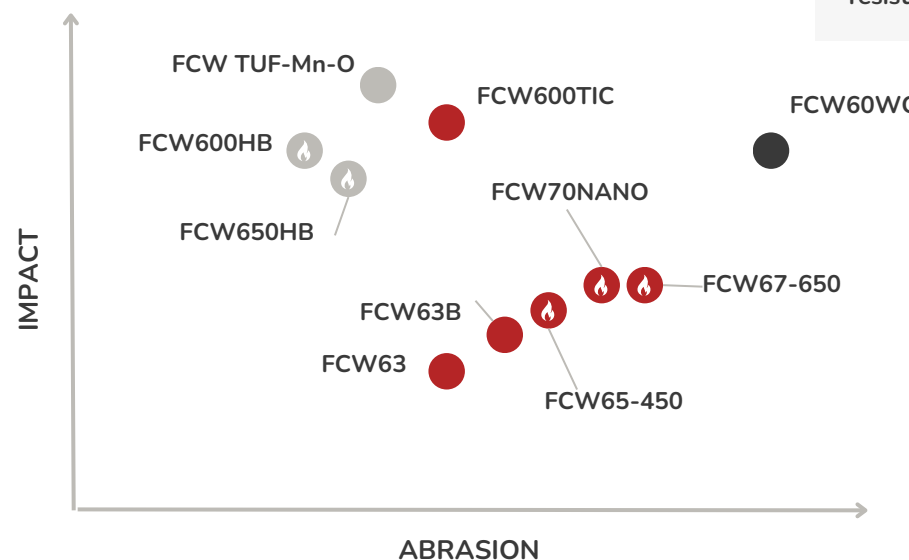
Temperature
resistance



Corrosion
resistance



Friction
resistance

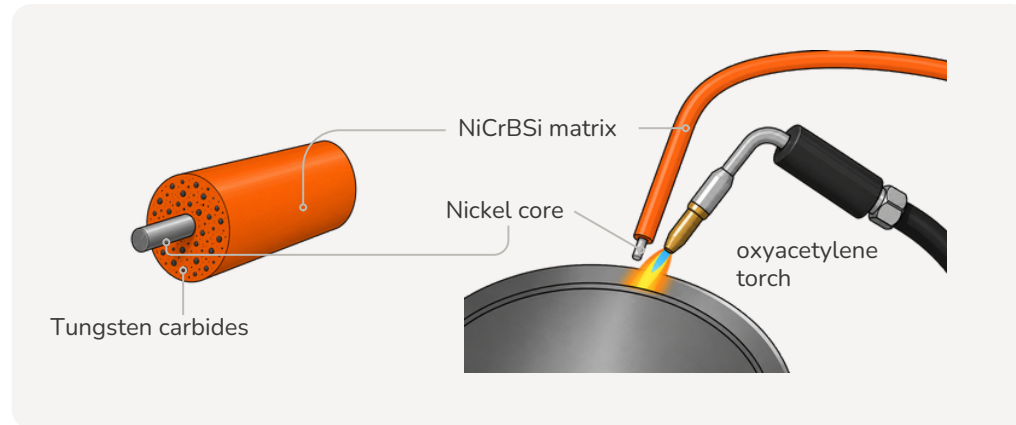


	Abrasion resistance	Impact resistance	Temperature resistance	Other Characteristics
Chromium cast iron	FCW63	★★★★☆	★★★☆☆	300°C
	FCW63B	★★★★★	★★★★☆	300°C
	FCW65-450	★★★★★	★★★★☆	450°C
	FCW67-650	★★★★★	★★★★☆	650°C
Tool steels	FCW600HB	★★★☆☆	★★★★★	450°C Friction
	FCW650HB	★★★☆☆	★★★★★	500°C Friction
	FCW600TIC	★★★★☆	★★★★★	250°C
High performance	FCW70NANO	★★★★★	★★★★☆	750°C
	FCW TUF-Mn-O	★★★★☆	★★★★★	250°C Friction
	FCW60WC	★★★★★	★★★★★	600°C Corrosion

FLEXCARB™: Flexible cords

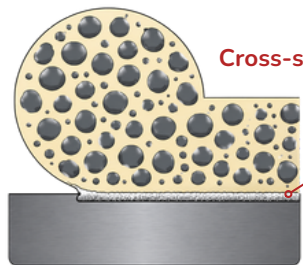
FlexCarb® cords **protect, repair and extend the service life** of equipment subjected to heavy abrasion.

They also provide excellent **corrosion and oxidation resistance**, while reducing maintenance costs and production downtime.



Advantages

- Easy torch application
- Multi-layer deposits possible
- Excellent adhesion
- Localized repair without replacing the entire part
- Clean, even deposit, no cracking



Cross-section of the deposit

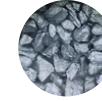
Dilution zone

Truly minimal mixing between the base metal and the deposit.
Deposit properties are therefore preserved.

The range

FR82

Crushed carbides (FTC)
54-61% carbides
≈2300 HV



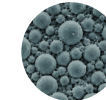
Main grain sizes

8205 - 0.15 to 0.45 mm
8208 - 0.45 to 0.80 mm
8212 - 0.80 to 1.20 mm
8220 - 1.20 to 2.20 mm

Proven legacy technology
Versatile solution

FR92

Spherical carbides (SFTC)
53-58% carbides
≈3100 HV



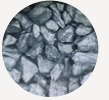
Main grain sizes

9205 - 0.25 to 0.42 mm
9208 - 0.42 to 0.84 mm

Best abrasion resistance
Best impact resistance

FR82 NXT

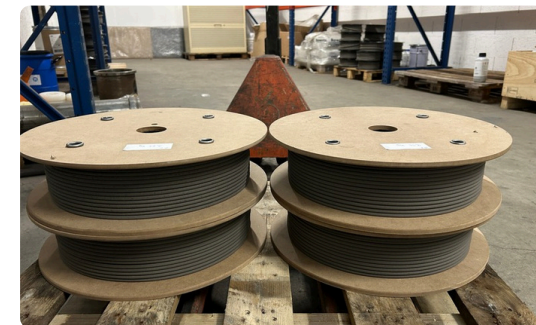
Crushed sintered carbides
42-52% carbides
≈1500-1800 HV



Main grain sizes

8207 - 0.25 to 0.70 mm

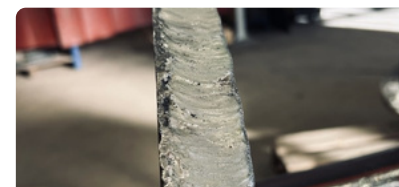
Cost-effective next-generation solution
Good performance / cost balance



Applications



Screws, augers, paddles, mixers, blenders, conveyors, hoppers, chutes, wear liners, crushers, scrapers, rotors, buckets, teeth, knives, propellers...



Electrodes



SE63®

Classification

EN 14700
E Fe14

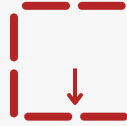
Ø X L
(mm)

3.2 x 350

Current
110 A

Voltage
= + | ~ 50 V

Welding
positions:



Hardness
1st layer

~ 58 HRC

Features:

Specially designed to offer exceptional resistance to mineral abrasion, combined with good resistance to moderate impact.

Applications:

rebuilding and hardfacing of augers, mixer paddles, abrasive-material pump casings, bucket teeth, mineral crushing plants, concrete pumps, ore crushers, ploughshares, clod breakers, brick press screws, wear plates...

SE68®

Classification

EN 14700
E Fe14

Ø X L
(mm)

3.2 x 350

4 x 350

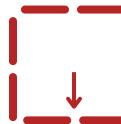
Current
(A)

130-150

160-190

Voltage
= +, - | ~ 40 V

Welding
positions:



Hardness
~ 64 HRC

Features:

Specially intended for hardfacing parts subjected to extreme abrasion, moderate impact and temperature. Service temperature can reach 550°C

Applications:

Applicable to steelworks equipment, crusher parts, augers, dredge buckets and, in general, any part also subjected to extreme abrasion.

SE29-9®

Classification

ISO 3581-A :
E 29 9 R 3 2

Hardness
~ 240 HB

Composition (%)

C	0.1
Mn	0.6
Si	1
Cr	29
Ni	10
S	0.05
P	0.05

Properties

Rm (Mpa)	700-850
Rp0.2% (Mpa)	>500
A%	>20

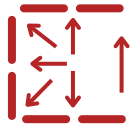
Ø X L
(mm)

3.2 x 350

Current
110 A

Voltage
= + | ~ 50 V

Welding
position:



Features:

Coated electrode specially developed for joining stainless steels of similar composition, ferritic stainless steels, and for dissimilar joints between stainless steels and unalloyed or low-alloy steels

Applications:

Typical use: repair and maintenance work on difficult-to-weld steels.

SE-T 64

Classification

EN 14700 : T
Fe15 60 GCZ

Hardness
2nd layer
~ 58-64 HRC

Composition (%)

C	4.4-6
Cr	38-42
Mn	0.2-0.6
P	< 0.03
S	< 0.03
Fe	Bal.

Ø X L
(mm)

6 x 450

8 x 450

12 x 450

Current
(A)

85-135

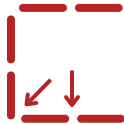
130-190

200-430

VS coated electrode

- + Productivity
- + Deposition rate
- + Low dilution
- + Less slag
- + Fewer passes
- + Low heat input

Welding
position:



Features:

SE-T 64 is a **tubular electrode** designed for hardfacing applications subject to **very severe abrasion or erosion**, with moderate to high impact.

The weld deposit consists of **hard primary chromium carbides** uniformly distributed in an austenitic matrix, uniformly distributed in an austenitic matrix.

Applications:

Various parts such as screws and conveyors, crushers, pumps, wear plates, equipment for quarries, mining, earthmoving, agriculture and the clay products industry.

Powders

BMI offers a range of powders suited to the main **hardfacing processes**, from flame spray-and-fuse to PTA hardfacing.

Depending on requirements, formulations are available with or without **tungsten carbides**, with different hardness levels, carbide contents and particle sizes.



Range	Process	Features
Ni-FUSE	Flame spray-and-fuse	Wear and corrosion protection, with a wide choice of hardness levels.
Ni-FUSE WC	Flame spray-and-fuse	Enhanced protection against abrasion and erosion thanks to tungsten carbides.
Ni-FUSE NXT	Flame spray-and-fuse	Enhanced protection against abrasion and erosion, with an excellent balance between wear resistance and cost control.
Ni-PTA	PTA hardfacing	Wear and corrosion protection, with different hardness levels
Ni-PTA WC	PTA hardfacing	Enhanced protection against abrasion and erosion thanks to tungsten carbides.

Matrix hardness: 18 to 60 HRC
Carbide content: 20 to 60 % depending on grade
Different matrix and carbide particle sizes
Packaging: pails of 5 kg

+ *Our laboratory and materials experts can also develop and test formulations tailored to your wear conditions.*

Ni-Fuse Spray™
Our flame spray-and-fuse application solution

Compatible with the ranges:
Ni-Fuse
Ni-Fuse WC
Ni-Fuse NXT

Torches, lances, accessories and components available.

