Welding Consumables

Product Catalog

blume®

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Introduction

About Xycore

At Xycore Inc., we do more than simply supply materials - we become your steadfast partner on your journey toward welding excellence. Our dedication extends to individuals experienced in welding, fabricators, and manufacturers alike. We are committed to providing BLUME® brand welding filler metals that consistently deliver outstanding results. This commitment is upheld through a strong partnership with Blumenotics Private Limited, the reputable manufacturer of BLUME® brand welding consumables. This collaboration ensures an unrivaled standard of quality. Blumenotics is celebrated for its unwavering commitment to excellence, innovative manufacturing techniques, and unmatched product quality and consistency. Being the sole importer for the US market grants us direct access to Blumenotics' latest innovations, guaranteeing that our customers have access to the most reliable and cutting-edge welding filler metals available.

We recognize the unique needs of diverse welding applications, which is why our selection encompasses a wide array of BLUME® brand welding consumables tailored to specific requirements. Within our inventory, you'll find a comprehensive range featuring solid wires, flux-cored wires, stick electrodes, TIG rods, and other essential options. Whether your project involves mild steel, stainless steel, aluminum or exotic alloys, we offer precisely the welding filler metals needed to match and fulfill your specific demands.

At the core of our operations lies a dedication to ensuring customer satisfaction. We strive to forge enduring connections with our clientele through outstanding service and unwavering support. Our team of welding specialists, equipped with vast expertise, stands prepared to assist you in selecting precisely tailored welding consumables fulfilling your application needs. Our commitment extends to comprehending your distinct requirements and providing personalized solutions geared towards facilitating exceptional welding outcomes.

Recognizing the significance of prompt delivery and effective supply chain operations, we have a strategically positioned warehouse in New Jersey. This ensures swift access to our inventory of BLUME® welding consumables. Through our optimized logistics infrastructure, we efficiently process and fulfill orders, guaranteeing timely delivery of your materials. Our objective is to bolster your welding endeavors by reducing downtime, stocking materials within the United States to cut lead times significantly, and aiding in meeting your project deadlines.

Discover the impact BLUME® brings to your welding projects and elevate your welding standards using our materials.

Introduction

About Blumenotics

Blumenotics Pvt. Limited upholds values centered on the highest quality, consistency, and timely delivery. Their specialization spans various facets of welding consumables, encompassing electrodes, flux-cored wires, and machinery. Their promptness in supporting welding needs ensures results of exceptional standards. Their expertise extends beyond manufactured goods, offering tailored solutions aligned with customer requirements. Catering to industries in fabrication, earthmoving equipment, and diverse fields worldwide, Blumenotics ensures top-notch product supply upheld by the industry's most stringent quality control measures, guaranteeing utmost satisfaction.

Comprised of goal-oriented, qualified professionals, the Blumenotics team exhibits an unparalleled commitment to customers, emphasizing service, quality, and innovation. Each department operates in tandem to ensure efficient project execution at the pinnacle of quality standards.

The research and development team at Blumenotics aims for superior physical and mechanical properties, optimal welding procedures, and top-quality finished products. They achieve this through the use of high-grade raw materials, a testament to the excellence they uphold. Their extensive experience underscores their pursuit of nothing but the best.

Their distribution network ensures comprehensive technical support for industries worldwide. Blumenotics provides thorough product training, technical assistance, and market insights to their clientele.

The Blumenotics Team, comprising individuals with diverse experience and a blend of youthful vigor and industry wisdom, endeavors to offer best-in-class welding consumables. Their profound expertise extends beyond product manufacturing, delivering know-how and customized solutions aligned with customer needs.

Flux Cored Wire

blume®

Flux Cored Wire

E71T-1C

Code & Specification

ASME SFA/AWS A5.20 E71T-1C

Description

BLUME® E71T-1C is an all position flux cored wire designed for optimum performance when using 100% CO_2, shielding. The smooth metal transfer facilitates easy deposition of vertical-up stringer beads. Fillet contour is flat too slightly convex with equal leg lengths and uniform sidewall wetting. The slag coverage is complete and designed for easy removal. Weld metal is consistently free of inclusions and porosity for X-ray soundness. This wire is formulated to produce 20% less fume, minimal spatter and improved impact properties over conventional E71T-1 wires.

Shielding Gas

Carbon Dioxide (CO_2)

Applications

BLUME® E71T-1C is designed for all position single and multi-pass welding of low and medium carbon steels.

Mechanical Properties

	As-welded
Yield Point, MPa	490 - 590
Tensile Strength, MPa	540 - 620
Elongation, %(L=4d)	24 - 33

Charpy V-Notch Impact Properties

Testing Temp.	**As-welded (J)**
32ºF (0ºC)	70 - 100
0.4ºF (-18ºC)	50 - 75
-20ºF (-29ºC)	30 - 50

Undiluted Weld Metal Analysis (wt%)

C	**Mn**	**Si**	**S**	**P~**
0.03 - 0.08	0.90 - 1.40	0.30 - 0.80	≤ 0.03	≤ 0.03

Suggested Welding Parameters (DC+)

Diameter	**Flat**		**Vertical-up**		**Overheard**	
	Volts	Amps	Volts	Amps	Volts	Amps
.045” (1.2mm)	23 - 30	150 - 290	22 - 26	150 - 210	23 - 26	150 - 250
1/16” (1.6mm)	25 - 34	180 - 400	21 - 27	180 - 250	22 - 27	180 - 310

Packaging

33 lbs (15 kgs) [Net Weight] Plastic spools with OD = 11” (270mm)

Approvals

CE

Stainless Steel Flux Cored Wire

blume®

E308LT1

Code & Specification

ASME SFA/AWS A5.22 E308LT1-1 (CO_2) E308LT1-4 (Argon +20-25% CO_2)

Description

BLUME® E308LT1-1/4 is a stainless steel flux cored wire with all positional capabilities. Vacuum sealed in aluminised plastic packs. Formulated for CO_2 or Argon +20-25% CO_2 shielding gases. High deposition rate welding of stainless steel. Welds well in all positions. Excellent welder appeal. Provides a low spatter hence requiring less clean-up. Good weld soundness and extended shelf-life. Fast freezing and self detaching slag. Provides spray-like arc transfer and high moisture resistance.

Applications

Used for joining common austenitic stainless steel such as Types 301, 302, 304, 304L, 321, CF-3 and CF-8.

Mechanical Properties

	As-welded (Argon +20-25% CO_2)	**As-welded (CO_2)**
Yield Strength, MPa	420	390
Tensile Strength, MPa	550	580
Elongation, %(L=4d)	35	43

Undiluted Weld Metal Analysis (wt%)

Using CO_2

C	**Mn**	**Si**	**Cr**	**Ni**
≤ 0.02	1.40 - 2.00	0.60 - 0.70	19.0 - 20.0	10.0 - 11.0
P	**S**			
≤ 0.03	≤ 0.03			

Suggested Welding Parameters (DC+)

Diameter	**Flat**		**Vertical-up**		**Overheard**	
	Volts	Amps	Volts	Amps	Volts	Amps
.045” (1.2mm)	23 - 28	150 - 250	22 - 27	120 - 180	22 - 27	140 - 180

Packaging

33 lbs (15 kgs) [Net Weight] Plastic spools with OD = 11” (270mm)

Approvals

CE

Stainless Steel Flux Cored Wire

blume®

E309LT1

Code & Specification

ASME SFA/AWS A5.22 E309LT1-1 (CO_2) E309LT-4 (Argon +20-25% CO_2)

Description

BLUME® E309LT1-1/4 is a stainless steel flux cored wire with all positional capabilities. Vacuum sealed in aluminised plastic packs. Formulated for CO_2 or Argon +20-25% CO_2 shielding gases. High deposition rate welding of stainless steel. Welds well in all positions. Excellent welder appeal. Provides a low spatter hence requiring less clean-up. Good weld soundness and extended shelf-life. Fast freezing and self detaching slag. Provides spray-like arc transfer and high moisture resistance.

Applications

Used for joining common austenitic stainless steel such as Type 304, 304L, 309, 309L. It is often used in dissimilar welding, such as stainless steel to carbon steel, low alloy steel, heat resistant steel and clad steel.

Mechanical Properties

	As-welded (Argon +20-25% CO_2)	As-welded (CO_2)
Yield Strength, MPa	415	410
Tensile Strength, MPa	556	540
Elongation, %(L=4d)	36	38

Undiluted Weld Metal Analysis (wt%)

Using CO_2

C	Mn	Si	Cr	Ni
≥ 0.03	1.00 - 2.00	0.60 - 0.80	23.0 - 24.0	12.5 - 13.5

P	S
≤ 0.04	≤ 0.03

Suggested Welding Parameters (DC+)

Diameter	Flat		Vertical-up		Overheard	
	Volts	Amps	Volts	Amps	Volts	Amps
.045” (1.2mm)	23 - 28	150 - 250	22 - 27	120 - 180	22 - 27	140 - 180
1/16” (1.6mm)	28 - 34	280 - 400	23 - 27	200 - 250	23 - 27	190 - 250

Packaging

33 lbs (15 kgs) [Net Weight] Plastic spools with OD = 11” (270mm)

Approvals

CE

Stainless Steel Flux Cored Wire

blume®

E316LT1

Code & Specification

ASME SFA/AWS A5.22 E316LT1-1 (CO_2) E316LT-4 (Argon +20-25% CO_2)

Description

BLUME® E316LT1-1/4 is a stainless steel flux cored wire with all positional capabilities. Vacuum sealed in aluminised plastic packs. Formulated for CO_2 or Argon +20-25% CO_2 shielding gases. High deposition rate welding of stainless steel. Welds well in all positions. Excellent welder appeal. Provides a low spatter hence requiring less clean-up. Good weld soundness and extended shelf-life. Fast freezing and self detaching slag. Provides spray-like arc transfer and high moisture resistance.

Applications

Used for joining and cladding of Type 316, 316L, CF-3M and CF-8M stainless steel.

Mechanical Properties

	As-welded (Argon +20-25% CO_2)	As-welded (CO_2)
Yield Strength, MPa	405	415
Tensile Strength, MPa	580	555
Elongation, %(L=4d)	35	39

Undiluted Weld Metal Analysis (wt%)

Using CO_2

C	Mn	Si	Cr	Ni
≥ 0.03	1.00 - 2.00	0.60 - 0.80	18.0 - 19.0	12.0 - 13.0
P	**S**	**Mo**		
≤ 0.03	≤ 0.03	2.50 - 2.80		

Suggested Welding Parameters (DC+)

Diameter	Flat		Vertical-up		Overheard	
	Volts	Amps	Volts	Amps	Volts	Amps
.045” (1.2mm)	23 - 28	150 - 250	22 - 27	120 - 180	22 - 27	140 - 180

Packaging

33 lbs (15 kgs) [Net Weight] Plastic spools with OD = 11” (270mm)

Approvals

CE

S.S. Flux Cored Wire - Gas Shield Type

E309LMo

Code & Specification

ASME SFA/AWS A5.22 E309LMoT1-1

Description

BLUME® E309LMo is a rutile type gas shield flux cored arc welding wire, austenite structure weld metal. This weld metal contains Mo element to get good high temperature strength, good crack and inter-granular corrosion resistance. It has a low spatter loss and easy slag removal.

Shielding Gas

Carbon Dioxide (CO_2) / Mixed Gas

Applications

BLUME® E309LMo dissimilar metal welding of SUS316L to carbon steels or low alloy steels. Cladding of SUS316L, 316L to carbon steels and low alloy steels.

Mechanical Properties

Tensile Strength MPa	559
Elongation %	38

Undiluted Weld Metal Analysis (wt%)

C	Mn	Si	Ni	Cr
≤ 0.03	0.50 - 2.50	≤ 1.00	12.0 - 16.0	22.0 - 25.0

Mo
2.00 - 3.00

Suggested Welding Parameters (DC+)

Diameter	Flat		Vertical		Overhead	
	Volts	Amps	Volts	Amps	Volts	Amps
.045” (1.2mm)		150 - 250		100 - 140		100 - 140
1/16” (1.6mm)		200 - 300				

Packaging

33 lbs (15 kgs) [Net Weight] Plastic spools with OD = 11” (270mm)

Approvals

CE

Stainless Steel Flux Cored Wire

E410NiMo

Code & Specification

ASME SFA/AWS A5.22 E410NiMoT1-1

Description

BLUME® E410NiMo is a gas shield type hard-facing flux cored arc welding wire. This hard-facing flux cored wire obtains a martensite structure weld metal. BLUME® E410NiMo has a good crack resistance, high compressive abrasion resistance and good thermal fatigue resistance.

Shielding Gas

Carbon Dioxide (CO_2) / Mixed Gas

Applications

BLUME® E410NiMo is designed for hard-facing repair welding of hydro turbines and caster guide roller along with build up repair for various guide rollers.

Mechanical Properties

Hardness HRC (As Welded)	42
Tensile Strength, MPa	923
Elongation %(L=4d)	18
Abrasion Resistance	Excellent
Thermal Fatigue Resistance	Excellent
Crack Resistance	Excellent

Undiluted Weld Metal Analysis (wt%)

C	Mn	Si	Ni	Cr
≤ 0.06	≤ 1.00	≤ 1.00	4.00 - 5.00	11.0 - 12.5

Mo
0.40 - 0.70

Suggested Welding Parameters (DC+)

Diameter			Wire Extension
	Volts	Amps	mm
.045” (1.2mm)	20 - 32	150 - 250	15 - 25
1/16” (1.6mm)	22 - 34	200 - 300	15 - 25

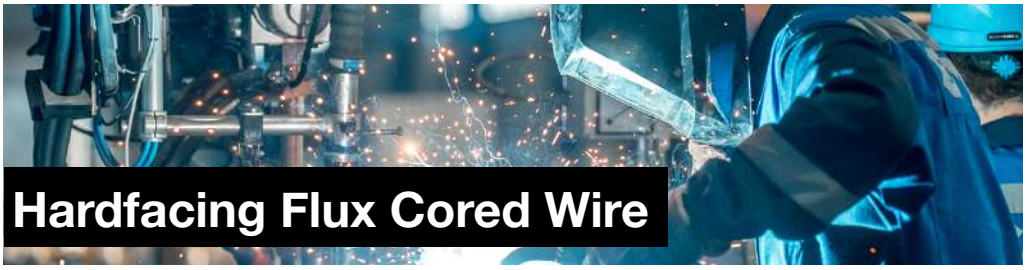
Packaging

33 lbs (15 kgs) [Net Weight] Plastic spools with OD = 11” (270mm)

Approvals

CE

Note: All values are based on CO_2 welding gas for weld test.



Hardfacing Flux Cored Wire

HF44CrMnNi

Code & Specification

Description

BLUME® HF44CrMnNi is a 13% Chromium Nitrogen containing martensitic stainless steel submerged arc flux cored wire. The complete martensitic microstructure provides excellent tempering stability, wear resistance, excellent heat resistant fatigue and stress corrosion cracking ability.

Applications

BLUME® HF44CrMnNi is often the first choice for surfacing continuous casting roller, as well as for surfacing valve seat, gate valve, wedge valve, forming roller, pinch roller, etc.

Mechanical Properties

Hard-Surfacing Hardness (HRC)	40 - 48

Undiluted Weld Metal Analysis (wt%)

C	Mn	Si	Cr	Ni
≤ 0.10	≤ 2.0	≤ 1.0	11.5 - 15.0	3.0 - 5.0
Mo	**N**	**Fe**		
0.5 - 1.2	0.05 - 0.12	Bal		

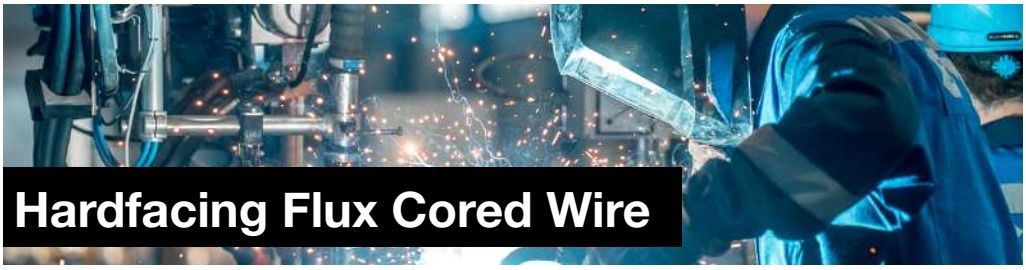
Suggested Welding Parameters (DC+)

Diameter	Volts	Amps	Extension Length
1/8” (3.2mm)	28 - 32	400 - 500	1.2” - 1.4” (30mm - 35mm)

Packaging

33 lbs (15 kgs) [Net Weight] Plastic spools with OD = 11” (270mm) or 550 lbs (250 kgs) Drum Packing

Notes



Hardfacing Flux Cored Wire

HF44CrMnNi-OA

Code & Specification

Description

BLUME® HF44CrMnNi-OA is a 13% Chromium Nitrogen containing martensitic stainless steel self shielded flux cored wire. The complete martensitic microstructure provides excellent tempering stability, wear resistance, excellent heat resistant fatigue and stress corrosion cracking ability.

Applications

BLUME® HF44CrMnNi-OA is suitable for surfacing continuous casting roller, as well as for surfacing valve seat, gate valve, wedge valve, safety valve, forming roller, pinch roller, etc.

Mechanical Properties

Hard-Surfacing Hardness (HRC)	40 - 48

Undiluted Weld Metal Analysis (wt%)

C	Mn	Si	Cr	Ni
≤ 0.10	≤ 2.0	≤ 1.0	11.5 - 15.0	3.0 - 5.0
Mo	**N**	**Fe**		
0.5 - 1.2	0.05 - 0.12	Bal		

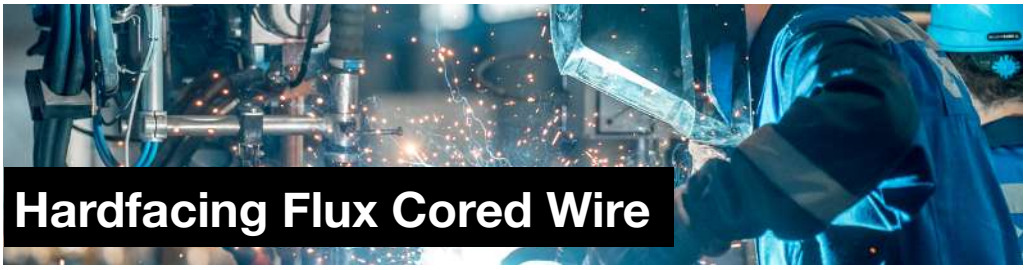
Suggested Welding Parameters (DC+)

Diameter	Volts	Amps	Extension Length
3/32” (2.4mm)	26 - 35	250 - 400	1” - 1.5” (25mm - 40mm)
7/64” (2.8mm)	28 - 35	250 - 450	1” - 1.8” (25mm - 45mm)
1/8” (3.2mm)	30 - 35	300 - 500	1.2” - 2” (30mm - 50mm)

Packaging

33 lbs (15 kgs) [Net Weight] Plastic spools with OD = 11” (270mm) or 550 lbs (250 kgs) Drum Packing

Notes



Hardfacing Flux Cored Wire

HF50MnCr

Code & Specification

Description

BLUME® HF50MnCr is a common chromium molybdenum type flux cored wire with CO_2 gas protection. The welding arc is stable, the splatter is small, the deslagging is easy and the forming is aesthetic. It is suitable for the workpiece with impact resistance and high wear and tear.

Applications

BLUME® HF50MnCr is suitable for repairing the surface of all kinds of wear parts, such as gears, dredgers, mining machinery, etc.

Mechanical Properties

Hard-Surfacing Hardness (HRC)	≥ 50

Undiluted Weld Metal Analysis (wt%)

C	Mn	Cr
0.30 - 0.60	≤ 4.00	≤ 5.00

Suggested Welding Parameters (DC+)

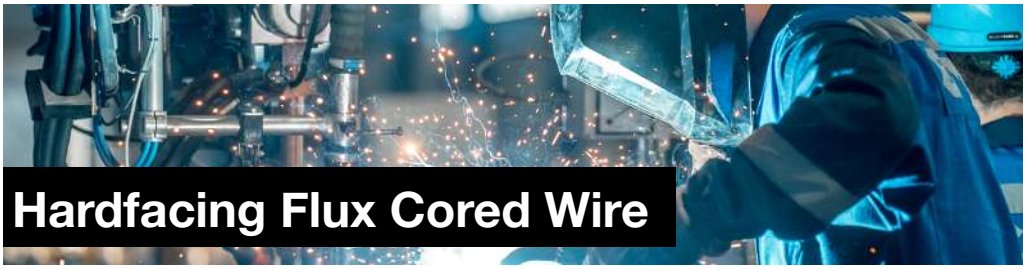
Diameter	Amps
1/16” (1.6mm)	220-260
3/32” (2.4mm)	250-400

Packaging

33 lbs (15 kgs) [Net Weight] Plastic spools with OD = 11” (270mm) or 550 lbs (250 kgs) Drum Packing.

Notes

1. Reverse connection of DC power supply is adopted.
2. During welding, the flow rate of CO_2 gas should be (20-25) l/min.
3. The extension length of welding wire should be controlled with 0.6” - 1” (15mm - 25mm).
4. Preheating and interpose temperature are recommended to be around 572ºF (300ºC).
5. Rust, oil, water and other impurities must be removed before welding.



Hardfacing Flux Cored Wire

HF62Cr

Code & Specification

Description

BLUME® HF62Cr is a high Chromium Cast Iron, which is suitable for low impact and high stress abrasive wear conditions.

Applications

BLUME® HF62Cr is suitable for wear-resistant steel plate, coal mill, cement vertical mill, etc.

Mechanical Properties

Hard-Surfacing Hardness (HRC)	58 - 62
Metallographic Structure	Austenite + Complex Carbide
Machinability	Only Grinding Wheel
Gas Cutting	No
Permission Hard-Surfacing Thickness	As per requirement
Shielding Gas or Soldering Flux	None

Undiluted Weld Metal Analysis (wt%)

C	Mn	Si	Cr	Fe
5.2	1.2	≤ 1.0	28.5	Allowance

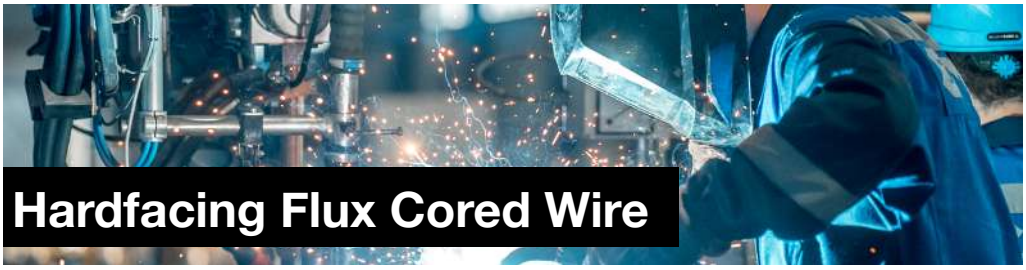
Suggested Welding Parameters (DC+)

Diameter	Volts	Amps	Extension Length
3/32” (2.4mm)	26 - 30	300 - 370	1.4” - 1.6” (35mm - 40mm)
7/64” (2.8mm)	26 - 30	300 - 400	1.4” - 1.6” (35mm - 40mm)

Packaging

33 lbs (15 kgs) [Net Weight] Plastic spools with OD = 11” (270mm) or 550 lbs (250 kgs) Drum Packing.

Notes



Hardfacing Flux Cored Wire

HF65CrNb

Code & Specification

Description

BLUME® HF65CrNb is a self shielded flux cored wire, and the deposited metal is Cr-Nb alloy. When the working temperature is less than 450ºC, it has good resistance to low impact and high stress solid abrasive wear, and the surfacing metal is easy to release stress cracks.

Applications

BLUME® HF65CrNb is suitable for peanut oil press screw, wear-resistant steel plate, sieve plate in coal and steel industry, bucket teeth and pulley of excavator, bucket teeth and blade of mechanical excavator, feed hopper, nozzle, etc.

Mechanical Properties

Hard-Surfacing Hardness (HRC)	62 - 67

Undiluted Weld Metal Analysis (wt%)

C	Mn	Si	Cr	Nb
5.50	0.30	-	20.00	7.00

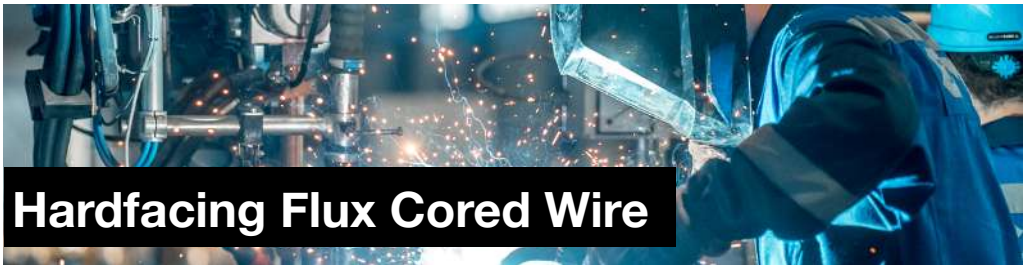
Suggested Welding Parameters (DC+)

Diameter	Volts	Amps	Extension Length
7/64” (2.8mm)	26 - 30	300 - 400	1.4” - 1.6” (35mm - 40mm)

Packaging

33 lbs (15 kgs) [Net Weight] Plastic spools with OD = 11” (270mm) or 550 lbs (250 kgs) Drum Packing.

Notes



Hardfacing Flux Cored Wire

HFCr13

Code & Specification

Description

BLUME® HFCr13 is a Hardfacing wire with subarc flux.

Applications

BLUME® HFCr13 is suitable for continuous casting roll, valve seat, mixer impeller, centrifugal pump impeller and other parts in iron and steel industry, suitable for metal key corrosion and wear occasions.

Mechanical Properties

Hard-Surfacing Hardness (HRC)	45 - 50
Metallographic Structure	Martensite
Machinability	Carbide Tools
Gas Cutting	No
Permission Hard-Surfacing Thickness	As per requirement

Undiluted Weld Metal Analysis (wt%)

C	Mn	Si	Cr
0.3	1.5	0.5	13.5

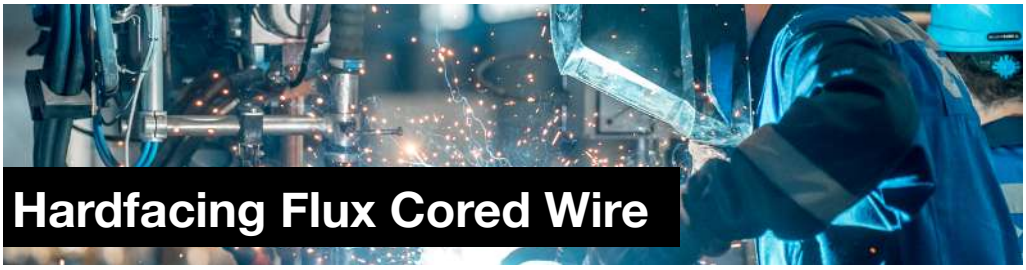
Suggested Welding Parameters (DC+)

Diameter	Volts	Amps	Extension Length
1/8” (3.2mm)	28 - 30	450 - 500	1.2” - 1.4” (30mm - 35mm)

Packaging

33 lbs (15 kgs) [Net Weight] Plastic spools with OD = 11” (270mm) or 550 lbs (250 kgs) Drum Packing.

Notes



Hardfacing Flux Cored Wire

HFCrMoW

Code & Specification

Description

BLUME® HFCrMoW is a submerged arc flux cored wire. Suitable for wear between metals and low pressure and high temperature.

Applications

BLUME® HFCrMoW is used in steel industry, such as billet roll, pinch roll, cable winch, rock drill, blast furnace bell, etc.

Mechanical Properties

Hard-Surfacing Hardness (HRC)	55 - 60
Metallographic Structure	Martensite
Machinability	BN Tools
Gas Cutting	Hard
Permission Hard-Surfacing Thickness	As per requirement

Undiluted Weld Metal Analysis (wt%)

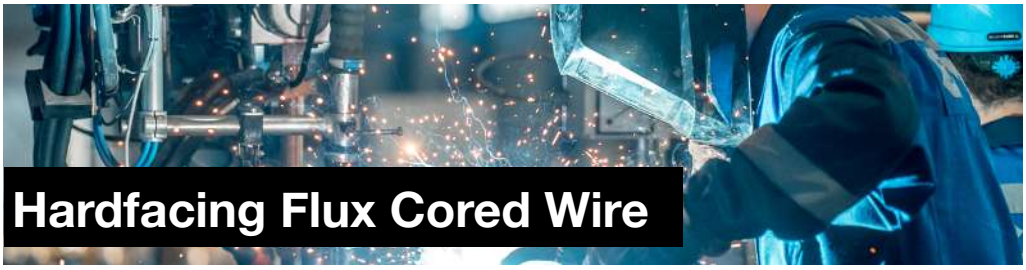
C	Mn	Si	Cr	Mo
0.5	2.0	≤ 1.0	6.5	2.0
W				
2.0				

Packaging

33 lbs (15 kgs) [Net Weight] Plastic spools with OD = 11” (270mm) or 550 lbs (250 kgs) Drum Packing.

Diameter Available

Diameter	3/32”	7/64”



Hardfacing Flux Cored Wire

HFMn16

Code & Specification

Description

BLUME® HFMn16 is a CO_2 gas shielded high manganese type flux cored welding wire. The welding wire has the characteristics of working hardening, toughness and wear resistance. The welding arc is stable and easy to deslag.

Applications

BLUME® HFMn16 is suitable for single or multi-layer hard surfacing of various crushers, high manganese rails, turnouts, bulldozers and other parts which are subject to impact along with wear and tear.

Mechanical Properties

Hard-Surfacing Hardness (HB)	≥ 170

Undiluted Weld Metal Analysis (wt%)

C	Mn	Si
≤ 1.10	11.00 - 16.00	≤ 1.30

Suggested Welding Parameters (DC+)

Diameter	Amps
.045” (1.2mm)	180 - 220
1/16” (1.6mm)	220 - 260

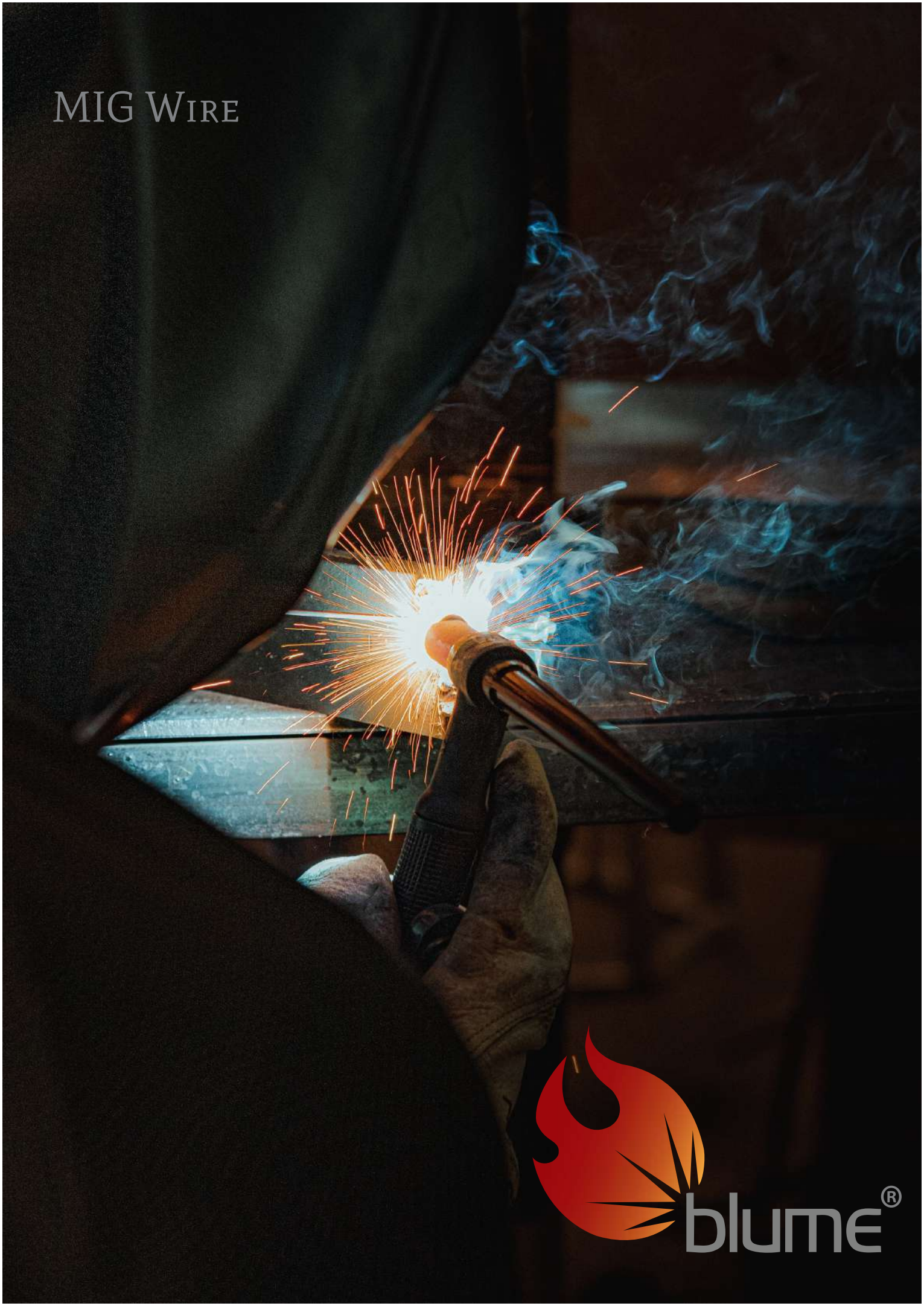
Packaging

33 lbs (15 kgs) [Net Weight] Plastic spools with OD = 11” (270mm) or 550 lbs (250 kgs) Drum Packing.

Notes

1. Reverse connection of DC power supply is adopted.
2. During welding, the flow rate of CO_2 gas should be (20-25) I/min.
3. The extension length of welding wire should be controlled with 0.6” - 1” (15mm - 25mm).
4. Preheating and interpose temperature are recommended to be around 572ºF (300ºC).
5. Rust, oil, water and other impurities must be removed before welding.

MIG Wire



blume®

MIG Wire

ER70S-6

Code & Specification

ASME SFA/AWS A5.18 ER70S-6

Description

BLUME® ER70S-6 is a general purpose welding wire for fabrication of mild steel . It is well suited for general purpose, manual and semiautomatic applications in most industries. Contains deoxidizers that provide better wetting, yielding a flatter bead shape and the capability of faster travel speeds . Usually used with 100% CO_2 or with Argon + CO_2.

Applications

BLUME® ER70S-6 is a wire with higher levels of Deoxidizers (Mn & Si) compared to other carbon steel wires. This wire is suitable for welding of steels with moderate amounts of scale or rust.

Shielding Gas

100% CO_2 , 75% Argon and 25% CO_2 or 98% Argon and 2 % CO_2

Mechanical Properties

	As-welded
Yield Point, MPa	≥ 420
Tensile Strength, MPa	≥ 500
Elongation, %(L=4d)	≥ 29

Charpy V-Notch Impact Properties

Testing Temp.	**As-welded (J)**
-22ºF (-30ºC)	47 (min)

Undiluted Weld Metal Analysis (wt%)

C	**Mn**	**Si**	**S**	**P~**
0.06 - 0.15	1.40 - 1.85	0.80 - 1.15	≤ 0.025	≤ 0.025
Cu	**Ni**	**Cr**	**Mo**	**V**
≤ 0.05	≤ 0.15	≤ 0.15	≤ 0.15	≤ 0.03

Suggested Welding Parameters (DC+)

Diameter	**Flat**		**Vertical-up**		**Overheard**	
	Volts	Amps	Volts	Amps	Volts	Amps
.045” (1.2mm)	20 - 32	80 - 350	18 - 20	120 - 160	18 - 20	120 - 160
1/16” (1.6mm)	32 - 38	350 - 500	18 - 22	120 - 220	18 - 22	110 - 210

Packaging

33 lbs (15 kgs) [Net Weight] Plastic spools with OD = 11” (270mm)

Approvals

CE

MIG Wire

ER308LSi

Code & Specification

ASME SFA/AWS A5.9 ER308LSi

Description

BLUME® ER308LSi is a high-performance stainless steel welding wire designed for use with 304 and 304L stainless steel. It features a higher silicon content, which improves the fluidity of the weld pool and results in smoother, more uniform welds with excellent bead appearance. **BLUME® ER308LSi** offers enhanced arc stability, making it ideal for welding in both manual and automated MIG applications. It provides superior resistance to corrosion and oxidation, making it suitable for a wide range of industries including food processing, chemical, and power generation.

Applications

BLUME® ER308LSi is used for welding 304 and 304L stainless steels, offering excellent corrosion resistance and smooth welds. Its higher silicon content improves arc stability, making it ideal for both manual and automated welding. Common applications include food processing, pharmaceuticals, petrochemicals, and power generation, where durability and oxidation resistance are critical.

Shielding Gas

Short Circuiting Transfer: 90% Helium / 7.5% Argon / 2.5% Carbon Dioxide.

Axial Spray Transfer: 98% Argon / 2% Oxygen

Mechanical Properties

	As-welded
Yield Point, MPa	450
Tensile Strength, MPa	600
Elongation, %(L=4d)	40

Undiluted Weld Metal Analysis (wt%)

C	Mn	Si	S	P
≤ 0.03	1.20 - 2.35	0.70 - 1.00	≤ 0.03	≤ 0.03
Cu	**Ni**	**Cr**	**Mo**	**N**
≤ 0.75	9.10 - 10.80	19.5 - 22.0	≤ 0.75	≤ 0.05

Suggested Welding Parameters (DC+)

Diameter	Spray Transfer		Short-Circuit	
	Volts	Amps	Volts	Amps
0.030” (0.8mm)	23 - 27	130 - 200	14 - 20	50 - 150
0.035” (0.9mm)	23 - 26	150 - 225	14 - 22	60 - 200
0.045” (1.2mm)	24 - 28	200 - 325	15 - 23	75 - 225
1/16” (1.6mm)	24 - 27	300 - 350	16 - 23	100 - 250

Packaging

33 lbs (15 kgs) [Net Weight] Plastic spools with OD = 270mm (11”)

Approvals

CE

ER309LSi

Code & Specification

ASME SFA/AWS A5.9 ER309LSi

Description

BLUME® ER309LSi is a stainless steel welding wire designed for MIG (GMAW) applications. It is primarily used for welding similar alloys like 309 stainless steel and for dissimilar welding between stainless and carbon steel. The higher silicon content improves arc stability, weld bead wetting, and fluidity, making it easier to produce smooth, clean welds with minimal spatter. This wire offers excellent corrosion resistance and strength in high-temperature environments, commonly used in applications such as chemical processing equipment and power generation industries.

Applications

BLUME® ER309LSi is commonly used in industries requiring high corrosion resistance and strength, particularly for welding dissimilar metals like stainless steel to carbon steel. It is ideal for applications in the chemical processing, oil and gas, and power generation sectors. Its excellent wetting properties and arc stability ensure smooth and efficient welds, making it essential for components exposed to high temperatures and corrosive environments.

Shielding Gas

Short Circuiting Transfer: 90% Helium / 7.5% Argon / 2.5% Carbon Dioxide.

Axial Spray Transfer: 98% Argon / 2% Oxygen

Mechanical Properties

	As-welded
Yield Point, MPa	450
Tensile Strength, MPa	600
Elongation, %(L=4d)	40

Undiluted Weld Metal Analysis (wt%)

C	Mn	Si	S	P
≤ 0.03	1.20 - 2.35	0.70 - 1.00	≤ 0.03	≤ 0.03
Cu	**Ni**	**Cr**	**Mo**	
≤ 0.75	12.50 - 13.50	23.50 - 24.50	≤ 0.75	

Suggested Welding Parameters (DC+)

Diameter	Spray Transfer		Short-Circuit	
	Volts	Amps	Volts	Amps
0.030” (0.8mm)	23 - 27	130 - 200	14 - 20	50 - 150
0.035” (0.9mm)	23 - 26	150 - 225	14 - 22	60 - 200
0.045” (1.2mm)	24 - 28	200 - 325	15 - 23	75 - 225
1/16” (1.6mm)	24 - 27	300 - 350	16 - 23	100 - 250

Packaging

33 lbs (15 kgs) [Net Weight] Plastic spools with OD = 270mm (11”)

Approvals

CE

ER316LSi

Code & Specification

ASME SFA/AWS A5.9 ER316LSi

Description

BLUME® ER316LSi is a stainless steel welding wire specifically formulated for MIG (GMAW) welding applications. It contains molybdenum, which enhances its corrosion resistance, especially against chlorides, making it ideal for marine and chemical processing environments. The higher silicon content improves arc stability and provides better bead appearance and fluidity, resulting in smooth welds with minimal spatter. ER316LSi is commonly used for welding a variety of stainless steel grades and is well-suited for applications in industries such as food processing, pharmaceuticals, and petrochemicals.

Applications

BLUME® ER316LSi is commonly used in industries requiring high corrosion resistance, especially in chloride-exposed environments like marine and chemical processing applications. It is ideal for welding stainless steel components in the food processing and pharmaceutical sectors, where material integrity is crucial. Its properties also make it suitable for petrochemical facilities, where resistance to harsh chemicals and high temperatures is essential. The excellent bead appearance and minimal spatter enhance the quality of welded joints, making ER316LSi a preferred choice for critical applications.

Shielding Gas

Short Circuiting Transfer: 90% Helium / 7.5% Argon / 2.5% Carbon Dioxide.

Axial Spray Transfer: 98% Argon / 2% Oxygen

Mechanical Properties

	As-welded
Yield Point, MPa	400
Tensile Strength, MPa	560
Elongation, %(L=4d)	40

Undiluted Weld Metal Analysis (wt%)

C	Mn	Si	S	P
≤ 0.03	1.20 - 2.35	0.70 - 1.00	≤ 0.03	≤ 0.03
Cu	**Ni**	**Cr**	**Mo**	
≤ 0.75	11.50 - 13.50	18.50 - 19.50	2.00 - 3.00	

Suggested Welding Parameters (DC+)

Diameter	Spray Transfer		Short-Circuit	
	Volts	Amps	Volts	Amps
0.030” (0.8mm)	23 - 27	130 - 200	14 - 20	50 - 150
0.035” (0.9mm)	23 - 26	150 - 225	14 - 22	60 - 200
0.045” (1.2mm)	24 - 28	200 - 325	15 - 23	75 - 225
1/16” (1.6mm)	24 - 27	300 - 350	16 - 23	100 - 250

Packaging

33 lbs (15 kgs) [Net Weight] Plastic spools with OD = 270mm (11”)

Approvals

CE

MIG Wire

ER4043

Code & Specification

ASME SFA/AWS A5.10 ER4043

Description

BLUME® ER4043 is a aluminium welding wire.Tailored for welding heat-treatable base alloys, particularly the 6XXX series, this filler alloy exhibits a lower melting point and greater fluidity compared to the 5XXX series. It demonstrates low susceptibility to weld cracking when used with 6XXX series base alloys and is appropriate for continuous elevated temperature applications surpassing 65º C (150º F). However, it's not advisable for materials intended for anodization.

Applications

BLUME® ER4043 is suitable for welding 6XXX alloys and the majority of casting alloys, it's commonly employed in automotive components like frames and drive shafts, as well as in constructing bicycle frames.

Shielding Gas

100% Argon , 75% Argon and 25% Helium or 98% Argon and 2 % Helium

Undiluted Weld Metal Analysis (wt%)

Al	Mn	Si	Fe	Cu
Balance	≤ 0.05	5.0 - 6.0	≤ 0.80	≤ 0.30
Mg	**Zn**	**Ti**	**Be**	**Cr**
≤ 0.05	≤ 0.10	≤ 0.20	≤ 0.0003	-

Suggested Welding Parameters (DC+)

Diameter	Flat		Vertical-up		Overheard	
	Volts	Amps	Volts	Amps	Volts	Amps
0.045” (1.2mm)	20 - 32	80 - 350	18 - 20	120 - 160	18 - 20	120 - 160
1/16” (1.6mm)	32 - 38	350 - 500	18 - 22	120 - 220	18 - 22	110 - 210

Packaging

15 kgs (33 lbs) [Net Weight] Plastic spools with OD = 270mm (11”)

Approvals

CE

MIG Wire

ERNiCrMo-3

Code & Specification

ASME SFA/AWS A5.14 ERNiCrMo-3

Description

BLUME® ERNiCrMo-3 provides excellent resistance to oxidising and reducing environments. The high molybdenum content provides good stress resistance, avoids pitting and corrosion resistance at crevices. The **BLUME® ERNiCrMo-3** is a popular nickel alloy for cladding. Usually used with Argon + Helium.

Applications

BLUME® ERNiCrMo-3 used for MIG welding of nickel-chromium-molybdenum alloys. This filler metal may be used for cladding and welding of dissimilar base metals such as nickel-chromium-molybdenum alloys to stainless and carbon steels.

Shielding Gas

75% Argon and 25% Helium

Undiluted Weld Metal Analysis (wt%)

C	Mn	Si	S	P
0.01	0.108	0.0036	0.001	0.003
Cr	**Ni**	**Cu**	**Ti**	**Al**
22.40	64.00	0.001	0.151	0.15
Nb	**Fe**	**Mo**		
3.60	0.40	8.80		

Suggested Welding Parameters (DC+)

Diameter	Flat		Gas
	Volts	Amps	
0.045” (1.2mm)	28 - 32	180 - 220	75% Argon / 25% Helium
1/16” (1.6mm)	29 - 33	200 - 250	

Packaging

33 lbs (15 kgs) [Net Weight] Plastic spools with OD = 11” (270mm)

Approvals

CE

Hardfacing MIG Wire

HFH13

Code & Specification

A.I.S.I H13

Description

BLUME® HFH13 is for hot work tool steels with excellent hot tensile properties, high hot wear resistance. Heat checking resistance.

Applications

BLUME® HFH13 is used in particular to repair mandrels, punches, dies, cylinder crushers, screws, hammers, pneumatic hammers, etc.

Mechanical Properties

Hardness HRC (As Welded)	54 - 60
Pre Heating Temperature	644ºF - 698ºF (340 - 370ºC)
Current and Polarity	DC+

Shielding Gas

Argon + CO_2

Undiluted Weld Metal Analysis (wt%)

C	Mn	Si	P	Cr
0.40	0.40	1.00	< 0.020	5.20
Mo	**Cu**	**S**	**Mo**	**V**
1.40	< 0.25	< 0.020	1.40	1.00

Base Materials to be Welded

X40CrMoV5-1 ; H13, BH 13; SCPH 62, STD 62

Packaging

.040” (1.0mm) Diameter, .045” (1.2mm) Diameter & 1/16” (1.6mm) Diameter Wire in 33 lbs (15 kgs) (net) Plastic spools with OD = 11” (270mm)

Hardfacing MIG Wire

HFM2

Code & Specification

A.I.S.I M2

Description

BLUME® HFM2 is a Tungsten - Molybdenum alloyed welding wire suitable for repairing high speed steels. Excellent toughness and cutting properties for a wide variety of uses.

Applications

BLUME® HFM2 is used for twist drills, reamers, broaching tools, metal saws, milling tools of all types, wood working tools, cold working tools, gears, punches, shears etc.

Mechanical Properties

Hardness HRC (As Welded)	60 - 64
Pre Heating Temperature	662ºF (350ºC)
Current and Polarity	DC+

Shielding Gas

Argon + CO_2

Undiluted Weld Metal Analysis (wt%)

C	Mn	Si	P	Cr
0.90	0.30	0.25	< 0.030	4.2
Mo	**Cu**	**S**	**Ni**	**V**
5.00	< 0.50	< 0.020	< 0.25	1.80

Base Materials to be Welded

X85WDCV06-04-02 ; V6M05Cr4V2 ; HS 6-5-2 ; M2, J438B ; X85WDCV06-04-02 ; BM2 ; SKH 51 ; R 6 M 5

Packaging

.045” (1.2mm) Diameter Wire in 33 lbs (15 kgs) [Net Weight] Plastic spools with OD = 11” (270mm)

Hardfacing MIG Wire

HFM7

Code & Specification

A.I.S.I M7

Description

BLUME® HFM7 is a molybdenum high speed tool steel solid wire similar to AISI M7 grade. This product characterised by a high hardness (57 to 64 HRC) and excellent wear resistance. It is suitable for use at elevated temperatures.

Applications

BLUME® HFM7 is for depositing welding of Mo-alloyed high-speed steel. Mainteinance and new manufacture of high-speed steel tools. Weld deposit without soft-annealing can only be processed by grinding. To be used for cutting tools, gouges, turning chisel, broaches, taps, twist drills, reamers, milling tools, cold extrusion dies.

Mechanical Properties

Hardness HRC (As Welded)	57 - 64
Current and Polarity	DC+

Shielding Gas

Argon + CO_2

Undiluted Weld Metal Analysis (wt%)

C	Mn	Si	P	Cr
1.00	0.30	0.40	< 0.025	3.80
Mo	**Cu**	**S**	**W**	**V**
8.60	< 0.50	< 0.025	1.80	1.90

Base Materials to be Welded

AISI M7 and similar.

Packaging

.045” (1.2mm) Diameter & 1/16” (1.6mm) Diameter Wire in 33 lbs (15 kgs) [Net Weight] Plastic spools with OD = 11” (270mm)

Hard-Facing MIG Wire

HFP20

Code & Specification

A.I.S.I P-20 Mold Steel

Description

BLUME® HFP20 is a medium carbon low alloy steel which contains chromium and molybdenum. The Deposits are that of an AISI P-20 mold steel. The hardness is highly dependent on preheat temperature, length of time welding, and cooling rate. The deposits have similar etching, graining and colour match characteristics as P-20 when tempered to the low 30 HRC range.

Applications

BLUME® HFP20 is used to repair many types of P-20 tools and dies, whether they are die casting dies or plastic injection molds. It is often used for high strength joining of low alloy steels and Chrome Moly Steels.

Shielding Gas

Argon + CO_2

Mechanical Properties

Hardness HRC (As Welded)	34 - 38
Current and Polarity	DC+
Pre Heating Temperature	572ºF (300ºC)

Undiluted Weld Metal Analysis (wt%)

C	Mn	Si	Mo	Cr
0.35	0.8	0.50	0.40	1.70
P	**S**	**Cu**		
< 0.025	< 0.025	0.25		

Packaging

.045” (1.2mm) Diameter & 1/16” (1.6mm) Diameter Wire in 33 lbs (15 kgs) [Net Weight] Plastic spools with OD = 11” (270mm)

Stick Electrode

Lorem ipsum

blume®

Mild Steel Stick Electrodes

E6010

Code & Specification

ASME SFA/AWS A5.1 E6010

Description

BLUME® E6010 is a mild steel all position stick electrode.

Applications

BLUME® E6010 is an all position electrode including vertical down hand. Typically used on pipe or general welding on large diameter pipe.

Mechanical Properties

	As-welded
Yield Point, MPa	415
Tensile Strength, MPa	470
Elongation, %(L=4d)	26

Charpy V-Notch Impact Properties

Testing Temp.	**As-welded (J)**
-20ºF (-29°C)	37 - 76

Undiluted Weld Metal Analysis (wt%)

C	**Mn**	**Si**
0.08	0.50	0.20

Packaging

⌀ x L	Wt./Carton	Carton/Box	Net wt./Box
3/32” x 12” (2.5mm x 300mm)	5.5lbs (2.5kgs)	8	44 lbs (20 kgs)
1/8” x 14” (3.2mm x 350mm)	5.5lbs (2.5kgs)	8	44 lbs (20 kgs)
5/32” x 16” (4.0mm x 400mm)	5.5lbs (2.5kgs)	8	44 lbs (20 kgs)

Suggested Welding Parameters

⌀ x L	DC±
3/32” x 12” (2.5mm x 300mm)	40 - 80
1/8” x 14” (3.2mm x 350mm)	70 - 130
5/32” x 16” (4.0mm x 400mm)	100 - 180

Approvals

CE

Mild Steel Stick Electrodes

blume®

E6011

Code & Specification

ASME SFA/AWS A5.1 E6011

Description

BLUME® E6011 is designed for deep penetration and welding on dirty, rusty, or painted surfaces. It can be used with both AC and DC power sources, making it suitable for a variety of applications, including fieldwork. Known for its fast-freeze characteristics, E6011 is ideal for vertical and overhead welding, providing strong, reliable welds even in challenging conditions such as outdoor or repair work.

Applications

BLUME® E6011 is ideal for welding in industries that require deep penetration and the ability to weld through rust or dirty surfaces. It is commonly used for galvanized steel, farm equipment, and pipelines.

Mechanical Properties

	As-welded
Yield Point, MPa	330
Tensile Strength, MPa	430
Elongation, %(L=4d)	22

Charpy V-Notch Impact Properties

Testing Temp.	**As-welded (J)**
-20ºF (-29°C)	55 - 90

Undiluted Weld Metal Analysis (wt%)

C	**Mn**	**Si**	**Ni**	**Mo**
0.10 - 0.15	0.30 - 0.80	0.10 - 0.30	≤ 0.30	≤ 0.30

Packaging

⌀ x L	Wt./Carton	Carton/Box	Net wt./Box
3/32” x 12” (2.5mm x 300mm)	5.5lbs (2.5kgs)	8	44 lbs (20 kgs)
1/8” x 14” (3.2mm x 350mm)	5.5lbs (2.5kgs)	8	44 lbs (20 kgs)
5/32” x 16” (4.0mm x 400mm)	5.5lbs (2.5kgs)	8	44 lbs (20 kgs)

Suggested Welding Parameters

⌀ x L	AC	DC±
3/32” x 12” (2.5mm x 300mm)	50 - 85	40 - 75
1/8” x 14” (3.2mm x 350mm)	75 - 120	70 - 110
5/32” x 16” (4.0mm x 400mm)	90 - 160	80 - 145

Approvals

CE

Mild Steel Stick Electrodes

blume®

E6013

Code & Specification

ASME SFA/AWS A5.1 E6013

Description

BLUME® E6013 is a mild steel stick electrode. Operable with low amperages on sheet metal. Excellent bead appearance.

Applications

BLUME® E6013 is used for welding of sheet metal and for irregular short welds that change position. Typically used for maintenance or repair welding. Can be used on small AC Welders with low open circuit voltage.

Mechanical Properties

	As-welded
Yield Point, MPa	400 - 440
Tensile Strength, MPa	460 - 515
Elongation, %(L=4d)	20 - 23

Charpy V-Notch Impact Properties

Testing Temp.	**As-welded (J)**
-20ºF (-29 °C)	37 - 76

Undiluted Weld Metal Analysis (wt%)

C	**Mn**	**Si**	**S**	**P**
0.04 - 0.07	0.30 - 0.45	0.15 - 0.25	≤ 0.015	≤ 0.015
Ni	**Cr**	**Mo**		
≤ 0.07	0.02 - 0.04	≤ 0.02		

Packaging

⌀ x L	Wt./Carton	Carton/Box	Net wt./Box
3/32” x 12” (2.5mm x 300mm)	5.5 lbs (2.5 kgs)	8	44 lbs (20 kgs)
1/8” x 14” (3.2mm x 350mm)	5.5 lbs (2.5 kgs)	8	44 lbs (20 kgs)
5/32” x 16” (4.0mm x 400mm)	5.5 lbs (2.5 kgs)	8	44 lbs (20 kgs)

Suggested Welding Parameters

⌀ x L	AC	DC±
3/32” x 12” (2.5mm x 300mm)	75 - 115	70 - 105
1/8” x 14” (3.2mm x 350mm)	110 - 140	100 - 135
5/32” x 16” (4.0mm x 400mm)	160 - 200	145 - 180

Approvals

CE

Mild Steel Stick Electrodes

E7018

Code & Specification

ASME SFA/AWS A5.1 E7018-1

Description

BLUME® E7018 is a mild steel stick electrode. Clear weld puddle without slag interference. Flat bead profile.

Applications

BLUME® E7018 is used in several industries such as power generation, petrochemical, pressure vessels and pressure piping. Typically used for mild steel welding.

Mechanical Properties

	As-welded
Yield Point, MPa	440 - 550
Tensile Strength, MPa	540 - 600
Elongation, %(L=4d)	> 27

Charpy V-Notch Impact Properties

Testing Temp. (°C)	**As-welded (J)**
-20ºF (-29 °C)	27 min

Undiluted Weld Metal Analysis (wt%)

C	**Mn**	**Si**	**S**	**P**
0.06 - 0.08	1.20 - 1.50	0.40 - 0.60	0.01 - 0.02	0.01 - 0.02
Ni	**Cr**	**Mo**		
≤ 0.1	≤ 0.1	≤ 0.1		

Packaging

⌀ x L	Wt./Carton	Carton/Box	Net wt./Box
3/32” x 12” (2.5mm x 300mm)	5.5 lbs (2.5 kgs)	8	44 lbs (20 kgs)
1/8” x 14” (3.2mm x 350mm)	5.5 lbs (2.5 kgs)	8	44 lbs (20 kgs)
5/32” x 16” (4.0mm x 400mm)	5.5 lbs (2.5 kgs)	8	44 lbs (20 kgs)

Suggested Welding Parameters

⌀ x L	AC	DC±
3/32” x 12” (2.5mm x 300mm)	80 - 120	70 - 110
1/8” x 14” (3.2mm x 350mm)	100 - 160	90 - 160
5/32” x 16” (4.0mm x 400mm)	130 - 220	120 - 220

Approvals

CE

Stainless Steel Stick Electrodes

E308L-16

Code & Specification

ASME SFA/AWS A5.4 E308L-16

Description

BLUME® E308L-16 is a stainless steel stick electrode. Flux coating provides a smooth arc transfer for all welding positions. Used to weld austenitic steels. Designed with low carbon levels to help eliminate carbide precipitation in high temperature service.

Applications

BLUME® E308L-16 is used to weld type 302, 304 and 308 stainless steels and A743 and A744 type CF-8 cast materials.

Mechanical Properties

	As-welded
Yield Point, MPa	370 - 420
Tensile Strength, MPa	540 - 595
Elongation, %(L=4d)	50 - 55

Undiluted Weld Metal Analysis (wt%)

C	**Mn**	**Si**	**S**	**P**
0.02 - 0.04	0.7 - 2.0	0.30 - 0.60	≤ 0.02	≤ 0.03
Ni	**Cr**	**Mo**		
9.5 - 10.5	19.0 - 20.0	0.15 - 0.25		

Packaging

⌀ x L	Wt./Carton	Carton/Box	Net wt./Box
3/32” x 14” (2.5mm x 350mm)	5.5 lbs (2.5 kgs)	8	44 lbs (20 kgs)
1/8” x 14” (3.2mm x 350mm)	5.5 lbs (2.5 kgs)	8	44 lbs (20 kgs)
5/32” x 14” (4.0mm x 350mm)	5.5 lbs (2.5 kgs)	8	44 lbs (20 kgs)

Suggested Welding Parameters

⌀ x L	AC	DC±
3/32” x 14” (2.5mm x 350mm)	40 - 70	40 - 70
1/8” x 14” (3.2mm x 350mm)	60 - 100	60 - 100
5/32” x 14” (4.0mm x 350mm)	90 - 140	90 - 140

Approvals

CE

Stainless Steel Stick Electrodes

E309L-16

Code & Specification

ASME SFA/AWS A5.4 E309L-16

Description

BLUME® E309L-16 is a low-carbon SMAW electrode designed for welding dissimilar metals, particularly stainless steel to carbon steel, and for cladding applications. Its low carbon content reduces the risk of intergranular corrosion in high-temperature or corrosive environments. This electrode produces strong, smooth welds with stable arcs and minimal spatter, making it ideal for use in industries such as petrochemical, power generation, and chemical processing.

Applications

BLUME® E309L-16 is ideal for welding dissimilar metals, such as stainless steel to carbon steel, and for cladding in high-temperature or corrosive environments. It is commonly used in industries like petrochemical, power generation, and chemical processing, where corrosion resistance and strength are essential. The electrode provides smooth arcs and strong welds with minimal spatter, making it suitable for both fabrication and repair work.

Mechanical Properties

	As-welded
Yield Point, MPa	455 - 470
Tensile Strength, MPa	570 - 585
Elongation, %(L=4d)	38 - 47

Undiluted Weld Metal Analysis (wt%)

C	**Mn**	**Si**	**S**	**P**
0.02 - 0.04	1.0 - 1.5	0.30 - 0.40	≤ 0.03	≤ 0.03
Ni	**Cr**	**Mo**		
12.5- 13.5	22.50 - 24.50	≤ 0.75		

Packaging

⌀ x L	Wt./Carton	Carton/Box	Net wt./Box
3/32” x 14” (2.5mm x 350mm)	5.5 lbs (2.5 kgs)	8	44 lbs (20 kgs)
1/8” x 14” (3.2mm x 350mm)	5.5 lbs (2.5 kgs)	8	44 lbs (20 kgs)
5/32” x 14” (4.0mm x 350mm)	5.5 lbs (2.5 kgs)	8	44 lbs (20 kgs)

Suggested Welding Parameters

⌀ x L	AC	DC±
2.5mm x 350mm (3/32” x 14”)	40 - 70	40 - 70
3.2mm x 350mm (1/8” x 14”)	60 - 100	60 - 100
4.0mm x 350mm (5/32” x 14”)	90 - 140	90 - 140

Approvals

CE

Stainless Steel Stick Electrodes

E316L-16

Code & Specification

ASME SFA/AWS A5.4 E316L-16

Description

BLUME® E316L-16 is a stainless steel stick electrode. Flux coating provides a smooth arc transfer for all welding positions. Molybdenum grade for increased corrosion resistance.Delivers exceptional puddle control, a smooth arc, and excellent slag release.

Applications

BLUME® E316L-16 is used to weld type 316 and 316L. Used for molybdenum bearing austenitic stainless steels.

Mechanical Properties

	As-welded
Yield Point, MPa	425 - 450
Tensile Strength, MPa	560 - 585
Elongation, %(L=4d)	40 - 54

Undiluted Weld Metal Analysis (wt%)

C	**Mn**	**Si**	**S**	**P**
0.03 - 0.04	0.7 - 0.9	0.3 - 0.4	≤ 0.02	≤ 0.02
Ni	**Cr**	**Mo**		
11.5 - 13.0	18.0 - 19.0	2.2 - 2.4		

Packaging

⌀ x L	Wt./Carton	Carton/Box	Net wt./Box
3/32” x 14” (2.5mm x 350mm)	5.5 lbs (2.5 kgs)	8	44 lbs (20 kgs)
1/8” x 14” (3.2mm x 350mm)	5.5 lbs (2.5 kgs)	8	44 lbs (20 kgs)
5/32” x 14” (4.0mm x 350mm)	5.5 lbs (2.5 kgs)	8	44 lbs (20 kgs)

Suggested Welding Parameters

⌀ x L	AC	DC±
3/32” x 14” (2.5mm x 350mm)	40 - 70	40 - 70
1/8” x 14” (3.2mm x 350mm)	60 - 100	60 - 100
5/32” x 14” (4.0mm x 350mm)	90 - 140	90 - 140

Approvals

CE

Cast Iron, Non Ferrous & Others

E NiCu-7

Code & Specification

ASME SFA/AWS A5.15 E NiCu-7

Description

BLUME® E NiCu-7 is a Monel electrode for joining and surfacing of nickel copper alloys. Low iron deposit exhibit maximum corrosion resistance. Medium penetration weld. Easily machinable deposit in as welded and stress relieved condition. Passes 180º bend test on monel alloy 400 plate.

Applications

BLUME® E NiCu-7 welding Monel to itself, to stainless steels or carbon steels. Overlaying on steel to obtain a corrosion resistant surface. Used for refineries, off shore, foundries, chemical and fertiliser plants, heat exchanger, pressure vessel and column manufacturing units, food, pumps & valves manufacturing units.

Mechanical Properties

	Condition	UTS, Mpa	EL%
Specification	As Welded	490-590	30-40

Redrying Condition : 300ºF (150ºC) for 1 Hour

Undiluted Weld Metal Analysis (wt%)

C	Mn	Si	S	Cu
≤ 0.08	1.0-3.0	0.20-0.80	≤ 0.015	≤2.5

Ni	Fe
62.0-68.0	1.0-2.5

Packaging

⌀ x L	Amperage, A	Wt./Carton	Carton/Box	Net wt./Box
3/32” x 14” (2.5mm x 350mm)	40-80	2.2 lbs (1 kg)	10	22 lbs (10 kgs)
1/8” x 14” (3.2mm x 350mm)	80-110	2.2 lbs (1 kg)	10	22 lbs (10 kgs)
5/32” x 14” (4.0mm x 350mm)	110-140	2.2 lbs (1 kg)	10	22 lbs (10 kgs)

Approvals

CE

Cast Iron, Non Ferrous & Others

E NiFe-Cl

Code & Specification

ASME SFA/AWS A5.15 E NiFe-Cl

Description

BLUME® E NiFe-Cl is a Ni-Fe type machinable electrode for Repair and Welding of Cast Iron. Produces dense, soft and ductile weld with adequate strength. Provides porosity are welding. Controlled dilution and penetration. Does not require preheating for large heavy casting.

Applications

BLUME® E NiFe-Cl is used for repair of broken heavy casting along with welding and repairing of all cast iron components. Main items used to repair are pump casting and gears, cast iron dies, gear boxes and gear teeth.

Mechanical Properties

	Condition	Hardness (3 Layer), BHN
Specification	As Welded	150-190

Redrying Condition : 300°F (150°C) for 1 Hour

Undiluted Weld Metal Analysis (wt%)

C	Mn	Si	S	Cu
≤ 2.0	≤ 2.50	≤ 4.0	≤ 0.03	≤2.5
Ni	**Fe**			
45.0-60.0	3.0-6.0			

Packaging

⌀ x L	Amperage, A	Wt./Carton	Carton/Box	Net wt./Box
3/32” x 14” (2.5mm x 350mm)	40-70	2.2 lbs (1 kg)	10	22 lbs (10 kgs)
1/8” x 14” (3.2mm x 350mm)	70-110	2.2 lbs (1 kg)	10	22 lbs (10 kgs)
5/32” x 14” (4.0mm x 350mm)	90-120	2.2 lbs (1 kg)	10	22 lbs (10 kgs)

Approvals

CE

TIG Rods

blume®

Stainless Steel TIG Filler Wire

ER308L

Code & Specification

ASME SFA/AWS A5.9 ER308L

Description

BLUME® **ER308L** offers commendable overall corrosion resistance. With its low carbon content, this alloy is especially recommended in situations where there's a potential for intergranular corrosion.

Applications

BLUME® **ER308L** finds application in the chemical and food processing sectors, alongside its use for pipes, tubes, and boilers. It's employed in joining stainless steels of 18% Cr - 8% Ni-type with low carbon content and Nb-stabilized steels of similar kinds, provided the service temperature stays below 662ºF (350°C). Additionally, it's suitable for welding Cr-steels except in environments abundant in sulfur.

Mechanical Properties (As Welded)

Yield Strength (MPa)	480
Tensile Strength (MPa)	610
Elongation (%)	36

Typical Charpy V-Notch Properties

Testing Temperature	Impact Value (J)
68º F (20ºC)	170
-112º F (-80ºC)	135
-321º F (-196ºC)	80

Packaging

1/16” (1.6mm) Diameter 3/32” & (2.4mm) Diameter of 40” (1000mm) length in 11 lbs (5 kgs) pack.

Stainless Steel TIG Filler Wire

ER309L

Code & Specification

ASME SFA/AWS A5.9 ER309L

Description

BLUME® **ER309L** exhibits commendable overall corrosion resistance. However, when utilized for joining dissimilar materials, the emphasis shifts away from corrosion resistance to other primary factors.

Applications

BLUME® **ER309L** serves for welding buffer layers on CMn steels and for joining dissimilar materials. When employing the wire for these purposes, it's crucial to manage and regulate the weld's dilution.

Mechanical Properties (As Welded)

Yield Strength (MPa)	430
Tensile Strength (MPa)	590
Elongation (%)	32

Typical Charpy V-Notch Properties

Testing Temperature	Impact Value (J)
68º F (20ºC)	160
-112º F (-80ºC)	130
-321º F (-196ºC)	90

Packaging

1/16” (1.6mm) Diameter & 3/32” (2.4mm) Diameter of 40” (1000mm) length in 11lbs (5kgs) pack.

Stainless Steel TIG Filler Wire

ER316L

Code & Specification

ASME SFA/AWS A5.9 ER316L

Description

BLUME® ER316L Exhibiting commendable overall corrosion resistance, especially in environments containing acid and chlorine, this alloy stands out due to its low carbon content, making it highly advisable in scenarios where the risk of intergranular corrosion is a concern.

Applications

BLUME® ER316L finds extensive application across industries such as chemical processing and food production, as well as in shipbuilding and diverse architectural structures.

Mechanical Properties (As Welded)

Yield Strength (MPa)	470
Tensile Strength (MPa)	600
Elongation (%)	32

Typical Charpy V-Notch Properties

Testing Temperature	Impact Value (J)
68º F (20ºC)	160
-76ºF (-60ºC)	130
-321ºF (-196ºC)	75

Packaging

1/16” (1.6mm) Diameter & 3/32” (2.4mm) Diameter of 40” (1000mm) length in 11lbs (5kgs) pack.

Hardfacing TIG Filler Wire

HFH13

Code & Specification

A.I.S.I H13

Description

BLUME® HFH13 is for hot work tool steels with excellent hot tensile properties, high hot wear resistance. Heat checking resistance.

Applications

BLUME® HFH13 is used in particular to repair mandrels, punches, dies, cylinder crushers, screws, hammers, pneumatic hammers, etc.

Mechanical Properties

Hardness HRC (As Welded)	54 - 60
Pre Heating Temperature	644ºF - 698ºF (340 - 370ºC)
Current and Polarity	DC-

Shielding Gas

100% Argon

Undiluted Weld Metal Analysis (wt%)

C	Mn	Si	P	Cr
0.40	0.40	1.00	< 0.020	5.20
Mo	**Cu**	**S**	**V**	
1.40	< 0.25	< 0.020	1.00	

Base Materials to be Welded

X40CrMoV5-1 ; H13, BH 13; SCPH 62, STD 62

Packaging

.045” (1.2mm) Diameter & 1/16” (1.6mm) Diameter of 39” (1000mm) length in 11 lbs (5 kgs) pack.

Hardfacing TIG Filler Wire

HFM2

Code & Specification

A.I.S.I M2

Description

BLUME® HFM2 is a Tungsten - Molibedenum alloyed welding wire suitable for repairing high speed steels. Excellent toughness and cutting properties for a wide variety of uses.

Applications

BLUME® HFM2 is used for twist drills, reamers, broaching tools, metal saws, milling tools of all types, wood working tools, cold working tools, gears, punches, shears etc.

Mechanical Properties

Hardness HRC (As Welded)	60 - 64
Pre Heating Temperature	662ºF (350ºC)
Current and Polarity	DC-

Shielding Gas

100% Argon

Undiluted Weld Metal Analysis (wt%)

C	Mn	Si	P	Cr
0.90	0.30	0.25	< 0.030	4.2
Mo	**Cu**	**S**	**Ni**	**V**
5.00	< 0.50	< 0.020	< 0.25	1.80

Base Materials to be Welded

X85WDCV06-04-02 ; V6M05Cr4V2 ; HS 6-5-2 ; M2, J438B ; X85WDCV06-04-02 ; BM2 ; SKH 51 ; R 6 M 5

Packaging

.045” (1.2mm) Diameter & 1/16” (1.6mm) Diameter of 39” (1000mm) length in 11 lbs (5 kgs) pack.

Hardfacing TIG Filler Wire

HFM7

Code & Specification

A.I.S.I M7

Description

BLUME® HFM7 is a molybdenum high speed tool steel solid wire similar to AISI M7 grade. This product characterised by a high hardness (57 to 64 HRC) and excellent wear resistance. It is suitable for use at elevated temperatures.

Applications

BLUME® HFM7 is for depositing welding of Mo-alloyed high-speed steel. Mainteinance and new manufacture of high-speed steel tools. Weld deposit without soft-annealing can only be processed by grinding. To be used for cutting tools, gouges, turning chisel, broaches, taps, twist drills, reamers, milling tools, cold extrusion dies.

Mechanical Properties

Hardness HRC (As Welded)	57 - 64
Current and Polarity	DC-

Shielding Gas

100% Argon

Undiluted Weld Metal Analysis (wt%)

C	Mn	Si	P	Cr
1.00	0.30	0.40	< 0.025	3.80
Mo	**Cu**	**S**	**W**	**V**
8.60	< 0.50	< 0.025	1.80	1.90

Base Materials to be Welded

AISI M7 and similar.

Packaging

.045” (1.2mm) Diameter & 1/16” (1.6mm) Diameter of 39” (1000mm) length in 11 lbs (5 kgs) pack.

Hardfacing TIG Filler Wire

blume®

HFP20

Code & Specification

A.I.S.I P-20 Mould Steel

Description

BLUME® HFP20 is a medium carbon low alloy steel which contains chromium and molybdenum. The Deposits are that of an AISI P-20 mold steel. The hardness is highly dependent on preheat temperature, length of time welding, and cooling rate. The deposits have similar etching, graining and colour match characteristics as P-20 when tempered to the low 30 HRC range.

Applications

BLUME® HFP20 is used to repair many types of P-20 tools and dies, whether they are die casting dies or plastic injection molds. It is often used for high strength joining of low alloy steels and Chrome Moly Steels.

Shielding Gas

100% Argon

Mechanical Properties

Hardness HRC (As Welded)	34 - 38
Current and Polarity	DC-
Pre Heating Temperature	572ºF (300ºC)

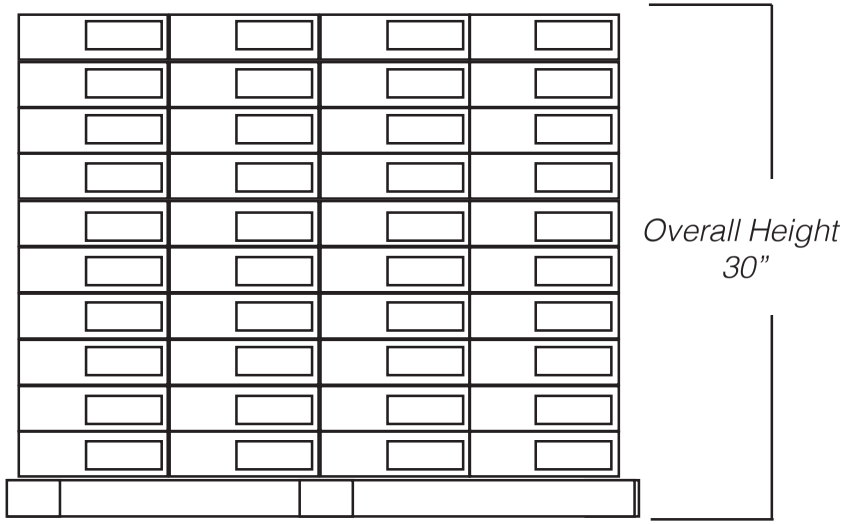
Undiluted Weld Metal Analysis (wt%)

C	Mn	Si	Mo	Cr
0.35	0.8	0.50	0.40	1.70
P	**S**	**Cu**		
< 0.025	< 0.025	0.25		

Packaging

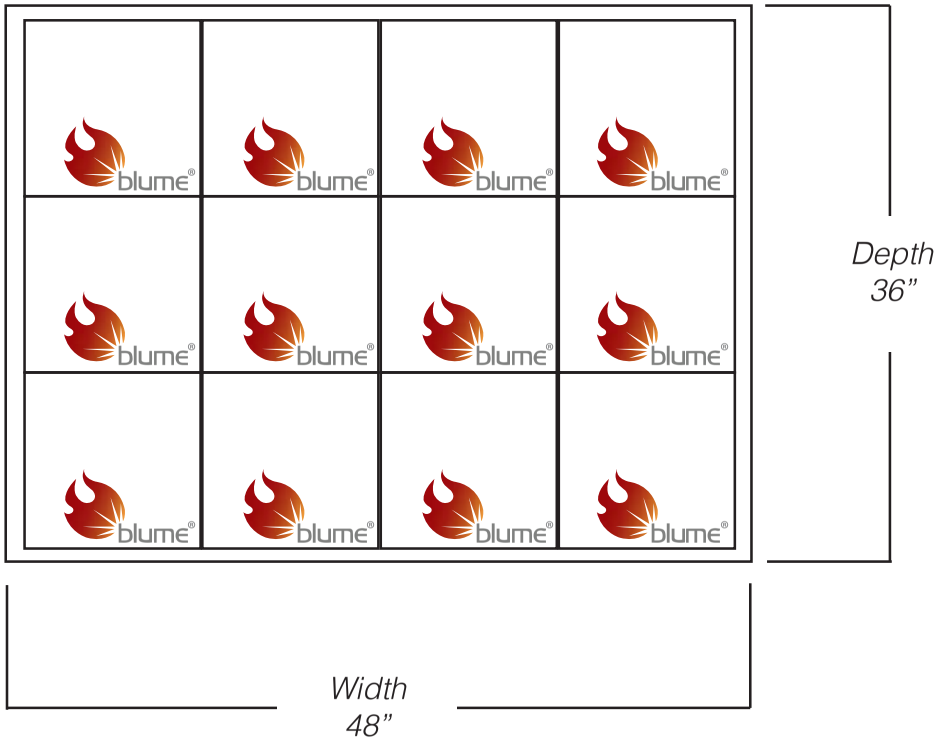
.045” (1.2mm) Diameter & 1/16” (1.6mm) Diameter of 39” (1000mm) length in 11 lbs (5 kgs) pack.

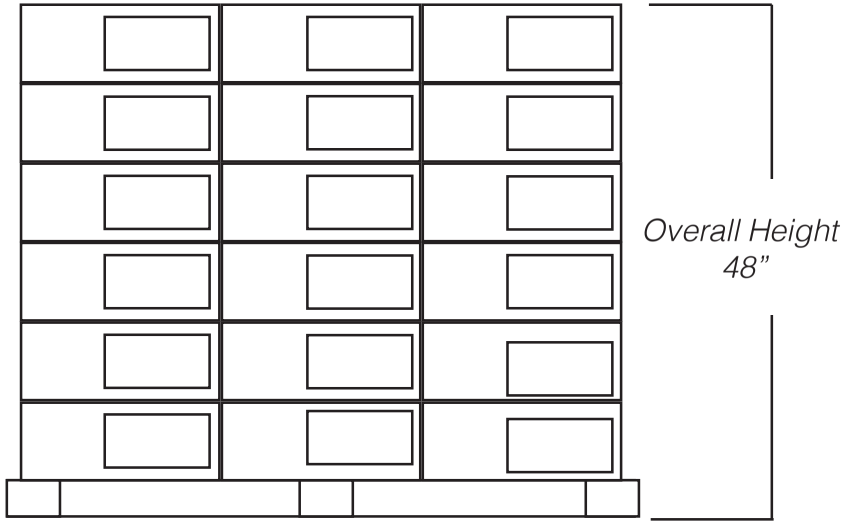
11-lbs ABS Spool Pallet



Weight: 2200 lbs net (1000 Kgs), 2235 lbs gross (1016 kgs)
Stacking sequence: 5 Wide, 4 deep, 20 cartons per layer
Cartons per pallet: 200 cartons

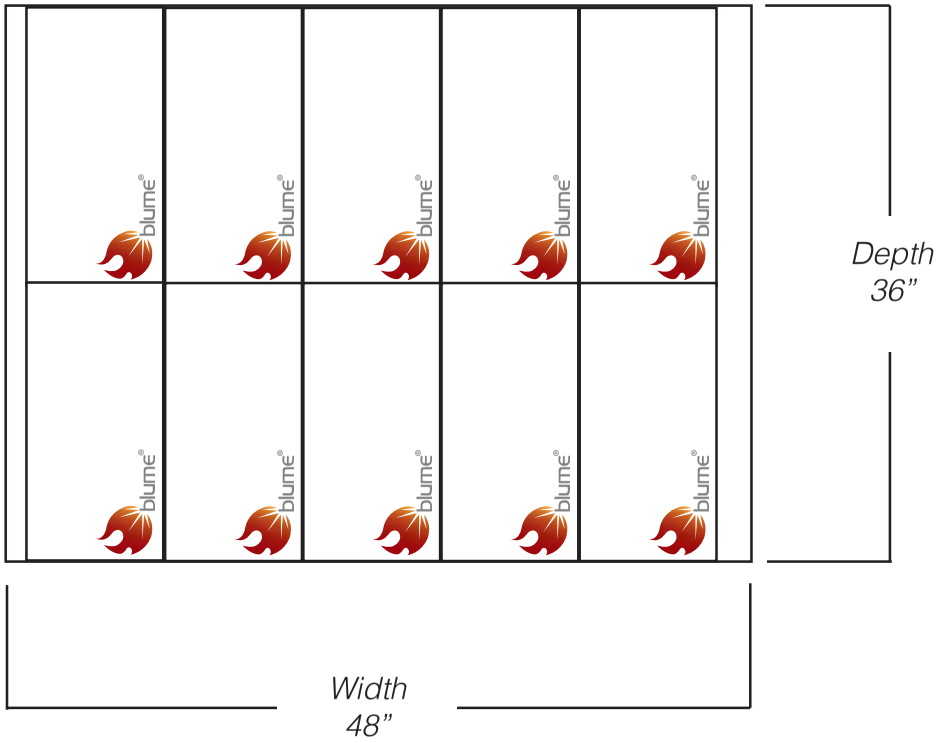
33-lbs ABS Spool Pallet

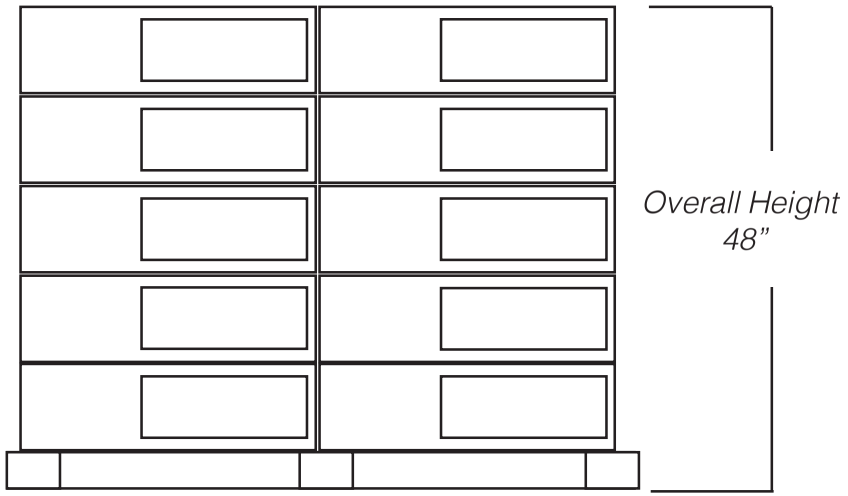




Weight: 2376 lbs net (1080 Kgs), 2410 lbs gross (1096 kgs)
Stacking sequence: 4 Wide, 3 deep, 12 cartons per layer
Cartons per pallet: 72 cartons

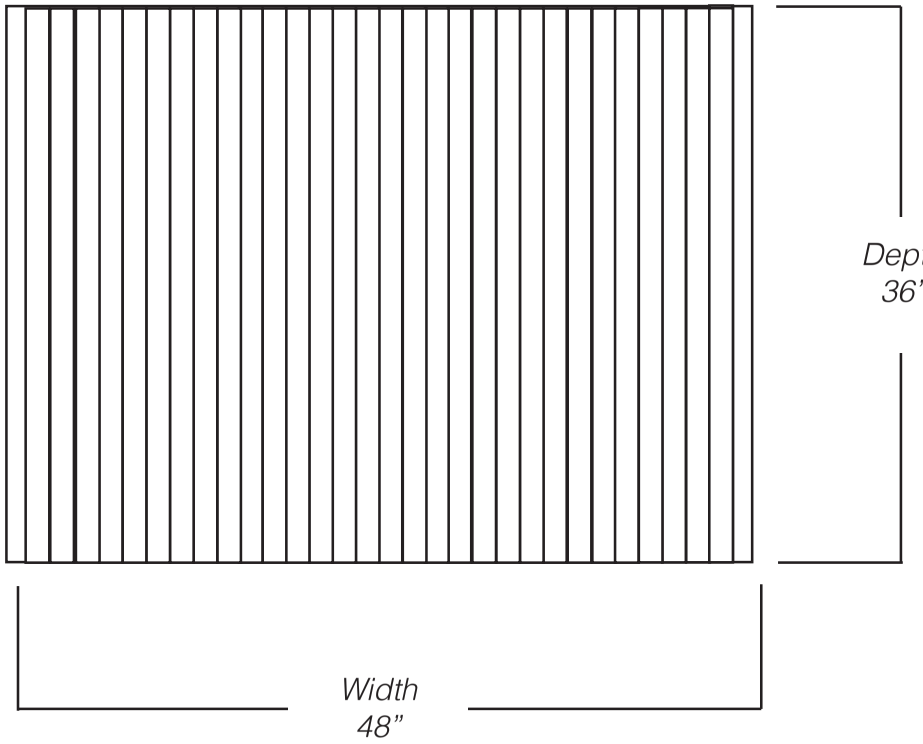
SMAW Electrode Pallet

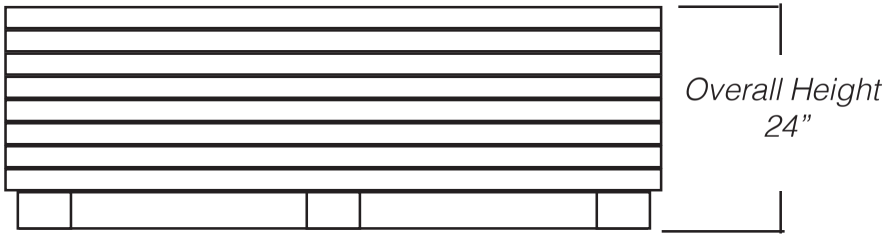




Weight: 2200 lbs net (1000 Kgs), 2235 lbs gross (1016 kgs)
Stacking sequence: 5 Wide, 2 deep, 10 cartons per layer
Cartons per pallet: 50 cartons

TIG Rod Pallet





Weight: 2460 lbs net (1120 Kgs), 2500 lbs gross (1016 kgs)
Stacking sequence: 28 Wide, 1 deep, 28 cartons per layer
Cartons per pallet: 224 cartons

AWS Classification

Mild Steel Covered Electrodes, SMAW Process

E7018-1 H4R

- Electrode
- Tensile in ksi
- Position
- Type of coating and current
- Meets lower temperature impact requirements
- Meets lower temperature impactHydrogen: H4 = Less than 4 ml/100 g.
- Meets requirements of absorbed moisture test

Position

1) Flat, Horizontal, Vertical, Overheard

2) Flat and Horizontal only

Types of Coating & Current

AWS	DIGIT	TYPE OF COATING	WELDING CURRENT
6010	**0**	Cellulose Sodium	DCEP
6011	**1**	Cellulose Potassium	AC or DCEP
6022	**2**	Titania Sodium	AC or DCEP
6013	**3**	Titania Potassium	AC or DCEP or DCEN
7014	**4**	Iron Powder Titania	AC or DCEP or DCEN
7018	**8**	Iron Powder Low Hydrogen	AC or DCEP

DCEP - Direct Current Electrode Positive
DCEN - Direct Current Electrode Negative
AC - Alternating Current

Mild Steel Solid Electrodes, GMAW and GTAW

ER70S-6

- Electrode or Rod
- Tensile in ksi
- Solid
- Chemical Composition

Low Allow Covered Electrodes

E8018-B2

- Electrode
- Tensile in ksi
- Position
- Type of coating and current
- Chemical composition of weld metal deposit

Chemical Composition of Weld Metal Deposit

AWS	Suffix	C	Mn	Si	Ni	Cr	Mo	V	P	S	Cr	Al	Nb	N
E7018	**A1**	0.12	0.90*	.80	—	—	.40-.65	—	.03	.03				
E8018	**B2L**	.05	.90	0.80	—	1.00-1.50	.40-.65	—	.03	.03				
E8018	**B2**	.05-.12	.90	0.80	—	1.00-1.50	.40-.65	—	.03	.03				
E9018	**B3L**	.05	.90	0.80*	—	2.00-2.50	.90-1.20	—	.03	.03				
E9018	**B3**	.05-.12	.90	0.80*	—	2.00-2.50	.90-1.20	—	.03	.03				
E8018	**B6**	.05-.10	1.0	.90	.40	4.0-6.0	.45-.65	—	.03	.03				
E8018	**B8**	.05-.10	1.0	.90	.40	8.0-10.5	.85-1.20	—	.03	.03				
E9015	**B9**	.08-.13	1.20	.30	8.0	8.0-10.5	.85-1.20	.15-.30	.01	.01	.25	.04	.02-.10	.02-.07
E8018	**C1**	.12	1.25	0.80*	2.00-2.75	—	—	—	.03	.03				
E8018	**C2**	.12	1.25	0.80*	3.00-3.75	—	—	—	.03	.03				
E8018	**C3**	.12	.40-1.25	.80	.80-1.10	.15	.35	.05	.03	.03				
E10018	**D2**	.15	1.65-2.00	0.80*	.90	—	.25-.45	—	.03	.03				
EXXXX	**G****	—	1.00 Min	.80 Min	.50 Min	.20 Min	.20 Min	.10 Min	.03	.03	.2			
E9018	**M**	.10	.60-1.25	.80	1.40-1.80	.15	.35	.05	.030	.030				
E10018M	**M**	.10	.60-1.25	.80	1.40-1.80	.15	.35	.05	.030	.030				
E11018M	**M**	.10	1.30-1.80	.60	1.25-2.50	.40	.25-.50	.05	.030	.030				
E12018	**M**	.10	1.30-2.25	.60	1.75-2.50	.30-1.50	.30-.55	.05	.030	.030				
E7010	**P1**	.20	1.20	.60	1.00	.30	.50	.10	.030	.030				
E8010	**P1**	.20	1.20	.60	1.00	.30	.50	.10	.030	.030				

* Amount depends on electric classification. Single values indicate maximum.
** All G Classifications have the same chemical minimum requirements.

Low Alloy Solid Electrodes, GMAW and GTAW

ER90S-D2

- Electrode or Rod
- Tensile in ksi
- Solid
- Chemical Composition

Chemical Composition of Solid Wires Using CO_2 Shielding Gas

AWS classification	Shielding gas	Tensile Strength ksi (MPa)	Yield Strength ksi (MPa)	% Elongation min. in 2" (50 mm)	Impact strength Min. ft-lbs at °F (J at °C)	CHEMICAL COMPOSITION									
						C	Mn	Si	P	S	Ni	Cr	Mo	Cu	Other
ER70S-2	CO_2	70 (500)	60 (420)	22	20 at -20 (27 at -29)	.07	.90-1.40	.40-.70	.025	.035	—	—	—	.50	Ti, Zr, Al
ER70S-3	CO_2	70 (500)	60 (420)	22	20 at 0 (27 at -18)	.06-.15	.90-1.40	.45-.70	.025	.035	—	—	—	.50	—
ER70S-4	CO_2	70 (500)	60 (420)	22	—	.07-.15	1.00-1.50	.65-.85	.025	.035	—	—	—	.50	—
ER70S-5	CO_2	70 (500)	60 (420)	22	—	.07-.19	.90-1.40	.30-.60	.025	.035	—	—	—	.50	Al
ER70S-6	CO_2	70 (500)	60 (420)	22	20 at -20 (27 at -29)	.07-.15	1.40-1.85	.80-1.15	.025	.035	—	—	—	.50	—
ER70S-7	CO_2	70 (500)	60 (420)	22	20 at -20 (27 at -29)	.07-.15	1.50-2.00	.50-.80	.025	.035	—	—	—	.50	—
ER80S-D2	CO_2	80 (550)	68 (470)	17	20 at -20 (27 at -29)	.07-.12	1.60-2.10	.50-.80	.025	.025	.15	—	.40-.60	.50	—

Certificate of Registration

This is to certify that

BLUMENOTICS PVT. LIMITED

3RD FLOOR, NO. 23, 5TH CROSS, KORAMANGALA 5TH BLOCK, BANGALORE 560 095, KARNATAKA, INDIA

has been independently assessed by QRO

and is compliant with the requirement of:

ISO 9001:2015

Quality Management System

For the following scope of activities:

MANUFACTURING OF WELDING ELECTRODES, FLUX CORED WIRES, TIG WIRE (SS & MS), MIG WIRES

Date of Certification: 30th September 2023
1st Surveillance Audit Due: 29th September 2024
2nd Surveillance Audit Due: 29th September 2025
Certificate Expiry: 29th September 2026

Certificate Number: 305023093014Q

CAB # 119005

Head of Certification

Validity of this certificate is subject to annual surveillance audits to be done successfully on or before 365 days from date of the audit.
(In case surveillance audit is not allowed to be conducted; this certificate shall be suspended / withdrawn).
The Validity of this certificate can be verified at www.qrocert.org
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Website : www.qrocert.org, E-mail : info@qrocert.org

US CERTIFICATION & INSPECTION LIMITED

Company Number-13917497

Certificate of Compliance

CE

We hereby declare that the technical of the product compiled with the requirement of the Directive 2009/125/EC.

Manufacturer Name : BLUMENOTICS PVT. LIMITED

Address: 3RD FLOOR, NO 23, 5TH CROSS ROAD KORAMANGALA, 5TH BLOCK, BANGALORE 560 095 KARNATAKA, INDIA

Product: Welding Electrodes, Flux Cored Wires, TIG wire (SS & MS), MIG Wires

The certification body has performed an audit of the above product quality system covering the design, manufacture and the final inspection of the certified product. The quality system has been assessed, approved and is subject to continuous surveillance according to the Directive 2009/125/EC.

This certification is issued under following conditions

1. It applies only to the quality system maintained in the manufacture of above referenced models and it does not substitute the design of type examination procedures, if requested.
2. The certificate remains valid until the manufacturing conditions or the quality systems are changed.
3. The certificate validity is conditioned by positive results or surveillance audits.
4. After fulfilling the relevant EU legislation, the manufacturer shall affix to each device, of the above referenced models.
5. The CE mark as shown above can be used, under the responsibility of the manufacturer, after completion of an EC declaration of conformity and compliance with all relevant EC Directives. The statement is based on single evaluation of one sample of above mentioned product. It does not imply an assessment of the whole production

Certificate Number: CE-5033

Validity of this certificate can be verified at www.uscertifications.co.uk/verify.

Date of Certification:	14th July 2023
1st Surveillance Audit Due:	13th July 2024
2nd Surveillance Audit Due:	13th July 2025
Certificate expiry: (Subject to the Company Maintaining its system as per the required standard)	13th July 2026

Authorised Signatory

Address: 2nd Floor, College House, 17 King Edwards Road, Ruislip, London, United Kingdom, HA4 7AE (U K)

E mail ID: info@uscertifications.co.uk , web site: www.uscertifications.co.uk

Abbreviations

Abbreviation of Standards

AWS	American Welding Society
BS	British Standard
CSA	Canadian Standards Association
CWB	Canadian Welding Bureau
DIN	Deutsches Institut für Normung
EN	European Normen
GB	Chinese National Standards
ISO	International Standard Organisation
JIS	Japanese Industrial Standards

Abbreviation of Welding

AAW	Argon Arc Welding
CO_2 W	Carbon-dioxide Gas Shield Arc Welding
ESW	Electro-slag Welding
FCW	Flux-cored Welding
MCW	Metal Cored Welding
GMAW	Metal Gas Arc Welding
MAG	Metal Active Gas Arc Welding
MGAW	Mixed Gas Arc Welding
MIG	Metal Inert Gas Arc Welding
SAW	Submerged Arc Welding
SMAW	Shielded Metal Arc Welding (Manual Metal Arc Welding)
TIG	Tungsten Inert Gas Arc Welding

Notion of Welding Position

F	Flat Welding or Downhand Welding
H	Horizontal Welding
H F	Horizontal Fillet Welding
OH	Overhead Welding
V	Vertical Up Welding
VD	Vertical Down Welding

Post Weld Condition

AW	As-welded
PWHT	Post Weld Heat Treated

Notes

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