

Selection Guide

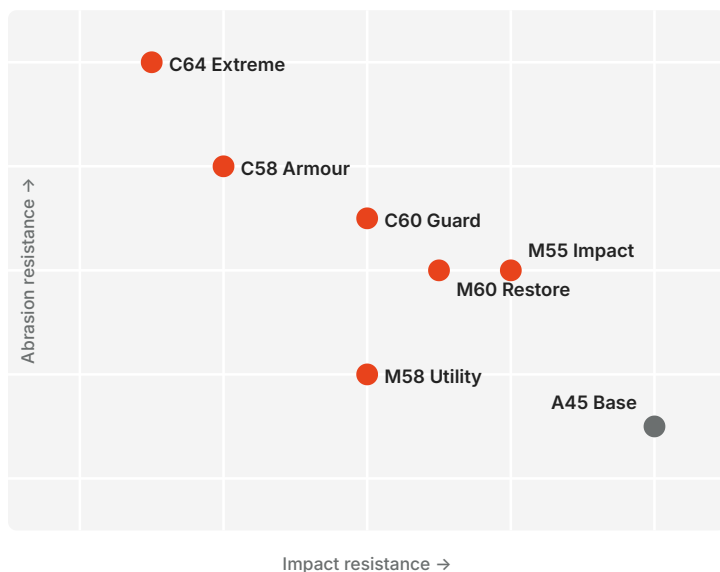
HDI HardWire range · HDI-DS-003 rev. 1.0 · 8 October 2026

HDI HARDWIRE · HARDFACING AND BUILD-UP WIRES

HardWire range

Seven wires for dredging wear parts. The code gives the deposit type and the maximum hardness (C = carbide, M = martensitic, A = austenitic); the name tells you the job.

01 Positioning



02 How to choose

Metal-to-metal wear, adapters

M60 Restore. Add M55 Impact where impact is high.

Abrasion with some impact

C60 Guard, the all-rounder. Standard for cutterhead protection.

Severe abrasion, little impact

C58 Armour or, for the hardest deposit, C64 Extreme.

Large build-up or 13 % Mn steel

A45 Base first, hardfacing on top.

03 Range overview

HardWire	Deposit	HRC	Abrasion	Impact	Machinable	Shielding	Typical use in dredging
M58 Utility	Martensitic	45 – 58	●●●●●	●●●●●	Yes	None / M21	General repair, pump parts
M55 Impact	Martensitic	48 – 55	●●●●●	●●●●●	Yes	O · G · S	Teeth, adapters, bucket lips
M60 Restore	Martensitic	56 – 60	●●●●●	●●●●●	Yes	M21	Adapter repair, cutting tools
C60 Guard	Chromium carbide	49 – 60	●●●●●	●●●●●	No	None	Cutterhead protection, pump impellers
C58 Armour	Chromium carbide	53 – 58	●●●●●	●●●●●	No	None	Wear plates, chutes, hoppers
C64 Extreme	Cr-Nb carbide	62 – 64	●●●●●	●●●●●	No	None	Severe abrasion in sand
A45 Base	Austenitic Mn-Cr	~ 45*	●●●●●	●●●●●	Yes	None	Build-up under hardfacing

HRC: layer 1 to maximum. * A45 Base: ~ 450 HV after work-hardening. Abrasion and impact ratings are indicative and relative within the range. Actual performance depends on the material dredged, the base metal and the welding procedure.

Advice? Contact HDI: +31 23 527 82 82 · info@hollanddredging.com



HDI HARDWIRE · SELF-SHIELDED FLUX-CORED · MARTENSITIC

HardWire M58 Utility

A general-purpose hardfacing wire with a good balance of abrasion and impact resistance. Machinable, crack-free and easy to weld.

45 – 58 HRC

Hardness, layer 1 to layer 3

MF2-GF-55-P

Classification, DIN 8555

Machinable

No relief cracking

1.2 – 3.2 mm

Wire diameters

01 Composition and properties

Nominal composition, wt %

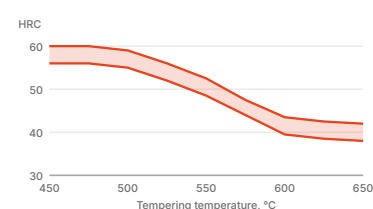
C	Mn	Si	Cr	Mo	Al
0.8	2	0.8	2.5	0.2	2

Martensitic deposit. Hardness in brackets in Vickers (HV).

Hardness

Layer	HRC (HV)
1	45 (447)
2	56 (612)
3	58 (653)

Temper response



For guidance only.

02 Applications

For metal-to-metal rolling or sliding wear and mild abrasion:

- Gravel and dredge pump parts
- General repair of dredging wear parts
- Bucket teeth
- Crusher hammers and cones
- Scraper blades

03 Welding guidance

- Readily machinable deposit.
- No relief cracking; suitable for multi-layer build-up.
- Also available as a gas-shielded variant: order with suffix G (HardWire M58 Utility G).

04 Welding parameters and availability

Ø mm	Polarity	Current A	Voltage V	Stick-out mm	Shielding	Packaging
1.2	DCEP	160 – 240	26 – 30	20 – 30	Not required	13 kg spool
1.6		200 – 350	28 – 30			
2.4		240 – 450	29 – 32	25 – 40		25 kg coil
2.8		300 – 550	30 – 32			
3.2		300 – 600	30 – 34			

Parameters are for guidance only.

▲ WARNING · HEALTH AND SAFETY

Welding fumes and gases can harm your health; arc rays injure eyes and skin; electric shock can kill. Follow safe working practices based on Welding Manufacturers Association leaflets 236, 237 and 239.



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HDI HARDWIRE · FLUX-CORED · MARTENSITIC

HardWire M55 Impact

A flux-cored wire for a tough, machinable martensitic deposit. High resistance to abrasion, impact and metal-to-metal wear.

48 – 55 HRC

Hardness, layer 1 to layer 3

MF6-GF-60-GP

Classification, DIN 8555

O · G · SOpen-arc, gas-shielded,
submerged arc**1.2 – 3.2 mm**

Wire diameters

01 Composition and properties

Nominal composition, wt %

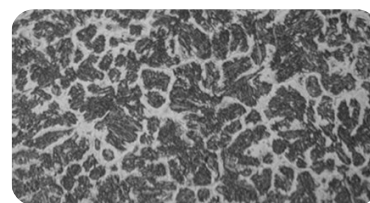
C	Mn	Si	Cr	Ni	Mo	V
0.5	1	0.6	8.5	0.25	2.5	0.3

Martensitic deposit. Machinable, no relief cracking.

Hardness

Layer	HRC
1	48
2	52
3	55

Microstructure



Martensitic microstructure.

02 Applications

For parts subject to high levels of abrasion and impact:

- Cutter teeth and adapters
- Bucket teeth and bucket lips
- Dredger wear parts
- Chutes and scraper blades
- A cost-effective alternative to chromium carbide wires

03 Welding guidance

- Machinable deposit; hardness up to ~55 HRC depending on base metal, dilution and number of layers.
- No relief cracking.
- Three versions: O (open-arc, no shielding), G (gas-shielded, M21) and S (submerged arc, universal flux).

04 Welding parameters and availability

Ø mm	Polarity	Current A	Voltage V	Stick-out mm	Versions	Packaging
1.2	DCEP	160 – 240	26 – 30	25 – 35	G	13 kg spool
1.6		200 – 350	26 – 30		O · G	
2.4		240 – 450	28 – 32		O · S	
3.2		300 – 550	28 – 32		S	25 kg coil

Parameters are for guidance only. Shielding: O none · G M21 (Ar + 20 % CO₂) · S universal flux.

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HDI HARDWIRE · METAL-CORED · MARTENSITIC

HardWire M60 Restore

A metal-cored wire for a crack-free, wear-resistant deposit. Made for adapter repair: high metal-to-metal wear resistance and a deposit that keeps a sharp edge.

56 – 60 HRC

Typical all-weld hardness

MF6-GF-60-GP

Classification, DIN 8555

1.4718

Material number

1.2 · 1.6 mm

Wire diameters

01 Composition and properties

Nominal composition, wt %

C	Si	Mn	Cr
0.45	3	0.4	9

Martensitic deposit; crack-free.

All-weld hardness

Property	Value
Hardness	56 – 60 HRC

02 Applications

A good all-round wire for metal-to-metal wear, impact and abrasion:

- Adapter repair
- Cutting tools and cutter teeth
- Shear and scraper blades
- Cable drums
- Grizzly bars

03 Welding guidance

- Shielding gas is required: M21 (Ar + 20 % CO₂).
- Final hardness depends on base material, number of layers and welding procedure.
- Crack-free deposit; suitable for multi-layer repair.

04 Welding parameters and availability

Ø mm	Polarity	Current A	Voltage V	Stick-out mm	Shielding	Packaging
1.2	DCEP	160 – 240	26 – 28	~ 15	M21 (Ar + 20 % CO ₂)	13 kg spool
1.6		200 – 350	28 – 30			

Parameters are for guidance only.

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HDI HARDWIRE · SELF-SHIELDED FLUX-CORED · CHROMIUM CARBIDE

HardWire C60 Guard

The all-rounder of the range: a chromium carbide deposit with moderate to high abrasion resistance and moderate impact resistance. Abrasion resistant up to ~ 500 °C.

49 – 60 HRC

Hardness, layer 1 to layer 2

MF10-GF-60-G

Classification, DIN 8555

~ 500 °C

Maximum service temperature

1.6 – 3.2 mm

Wire diameters

01 Composition and properties

Nominal composition, wt %

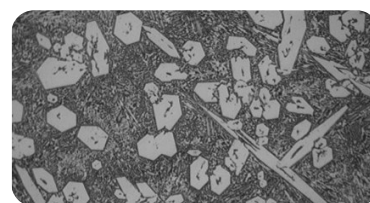
C	Mn	Si	Cr	Mo	B
4.5	1	0.8	23	1	0.5

Non-machinable deposit; relief cracking is normal.

Hardness

Layer	HRC
1	49
2	60

Microstructure



Primary and eutectic carbides in an austenitic matrix.

02 Applications

For abrasion with some impact, including:

- Cutterhead protection
- Dredge pump impellers
- Wear plates and hoppers
- Dragline buckets
- Crusher rolls

03 Welding guidance

- Maximum two layers.
- Relief cracks are normal; preheat to 250 – 450 °C and cool slowly to limit them.
- Not machinable or heat treatable; can be ground.
- On low-alloy or 13 % Mn steel, build up with HardWire A45 Base first.

04 Welding parameters and availability

Ø mm	Polarity	Current A	Voltage V	Stick-out mm	Shielding	Packaging
1.6	DCEP	200 – 350	28 – 30	25 – 40	Not required*	13 kg spool
2.4		240 – 450	29 – 32			25 kg coil
2.8		300 – 550	30 – 32			
3.2		300 – 600	30 – 34			

Parameters are for guidance only. * M21 gas (Ar + 20 % CO₂) can be used with a shorter stick-out of 15 – 25 mm.

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HDI HARDWIRE · SELF-SHIELDED FLUX-CORED · CHROMIUM CARBIDE

HardWire C58 Armour

A self-shielded wire for a hard chromium carbide deposit. High abrasion resistance where impact is low to moderate.

53 – 58 HRC

Hardness, layer 1 to layer 3

MF10-GF-60-G

Classification, DIN 8555

3 layers

Maximum build-up

1.2 – 3.2 mm

Wire diameters

01 Composition and properties

Nominal composition, wt %

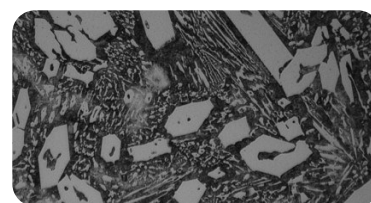
C	Mn	Si	Cr
5.0	1	1	27

Non-machinable deposit; relief cracking is normal.

Hardness

Layer	HRC
1	53
2	56
3	58

Microstructure



Primary chromium carbides in a eutectic matrix.

02 Applications

For conditions of high abrasion:

- Wear plates
- Chutes and hoppers
- Excavator and dredger buckets
- Conveyor and auger screws
- Scraper blades

03 Welding guidance

- Maximum three layers.
- Relief cracks are normal; preheat to 250 – 450 °C and cool slowly to limit them.
- Not machinable or heat treatable; can be ground.
- On low-alloy or 13 % Mn steel, build up with HardWire A45 Base first.

04 Welding parameters and availability

Ø mm	Polarity	Current A	Voltage V	Stick-out mm	Shielding	Packaging
1.2	DCEP	150 – 300	22 – 28	25 – 40	Not required*	13 kg spool
1.6		200 – 350	28 – 30			
2.4		240 – 450	29 – 32			25 kg coil
2.8		300 – 550	30 – 32			
3.2		300 – 600	30 – 34			

Parameters are for guidance only. * M21 gas (Ar + 20 % CO₂) can be used with a shorter stick-out of 15 – 25 mm.

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HDI HARDWIRE · SELF-SHIELDED FLUX-CORED · CHROMIUM-NIOBIUM CARBIDE

HardWire C64 Extreme

The hardest wire in the range. A chromium carbide deposit with a significant niobium addition, for very high abrasion resistance where impact is low.

62 – 64 HRC

Hardness, layer 1 to layer 2

Cr + Nb

Chromium and niobium carbides

2 layers

Maximum build-up

1.2 – 3.2 mm

Wire diameters

01 Composition and properties

Nominal composition, wt %

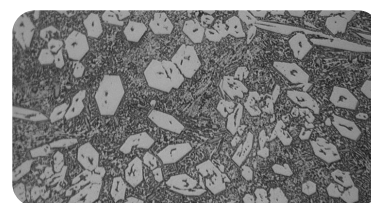
C	Mn	Si	Cr	Nb
5.5	0.4	1	29	3

Non-machinable deposit; relief cracking is normal.

Hardness

Layer	HRC
1	~ 62
2	~ 64

Microstructure



Chromium and niobium carbides in an austenitic matrix.

02 Applications

For severe abrasion with little impact:

- Dredger parts in sand and fine gravel
- Chutes
- Wear plates
- Conveyor screws

03 Welding guidance

- Maximum two layers.
- Relief cracks are normal; preheat to 250 – 450 °C and cool slowly to limit them.
- Not machinable or heat treatable; can be ground.
- On low-alloy or 13 % Mn steel, build up with HardWire A45 Base first.

04 Welding parameters and availability

Ø mm	Polarity	Current A	Voltage V	Stick-out mm	Shielding	Packaging
1.2	DCEP	160 – 240	26 – 30	25 – 40	Not required	13 kg spool
1.6		200 – 350	28 – 30			
2.4		240 – 450	29 – 32			
2.8		300 – 550	30 – 32			25 kg coil
3.2		300 – 600	30 – 34			

Parameters are for guidance only.

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HDI HARDWIRE · SELF-SHIELDED FLUX-CORED · BUILD-UP

HardWire A45 Base

A 14 % manganese – 14 % chromium build-up wire. The tough austenitic deposit work-hardens in service and is the base layer under HardWire hardfacing.

~ 450 HV

Work-hardened (≈ 45 HRC)

MF7-GF-250-KP

Classification, DIN 8555

Crack-free

Machinable, excellent impact

1.6 – 3.2 mm

Wire diameters

01 Composition and properties

Nominal composition, wt %

C	Mn	Si	Cr
0.4	14	0.7	14

Austenitic manganese deposit with some corrosion resistance.

Hardness

Condition	HV
As welded	240 – 270
Work-hardened	~ 450

02 Applications

For build-up and parts under heavy impact:

- Build-up under hardfacing
- Rebuilding worn 13 % Mn steel parts
- Bucket lips and teeth
- Crushers and hammers

03 Welding guidance

- Limit the interpass temperature to 260 °C.
- Avoid excessive heat build-up in the base material; it reduces toughness and ductility.
- Do not stress relieve.
- Hardfacing can be welded directly on top of the build-up layer.

04 Welding parameters and availability

Ø mm	Polarity	Current A	Voltage V	Stick-out mm	Shielding	Packaging
1.6	DCEP	200 – 350	28 – 30	25 – 40	Not required	13 kg spool
2.4		240 – 450	29 – 32			25 kg coil
2.8		300 – 550	30 – 32			
3.2		300 – 600	30 – 34			

Parameters are for guidance only.

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