

# FILOTECH ELECTRODES INC.

## ***SUMMARY OF FLUX-CORED HARDFACING WIRES AVAILABLE FROM 1/8" to .045"***

### **Rebuilding wires:**

- HA-1** Pearlitic steel for **build up**, 25-30 RC., work hardens to 40-45 RC. Applications usually involve rolling loads.
- HA-2-MX SERIES** Austenitic manganese for **impact resistance**, 15-18 RC as deposited, 45-55 RC work hardened. Various combinations of manganese and nickel are available.  
**HA-2**  
**HA-2-MX4**  
**HA-2-MX5**  
**HA-2-MX6**  
**HA-2-MX7**  
**HA-2-MX8**
- HA-50** Medium alloy rebuilding alloy. 25-30 RC as deposited. Work hardens to 40-45 RC.
- MACROMANG** Austenitic chrome manganese wires used in quarry applications for **high impact and abrasive conditions**. 18-24 RC as deposited, work hardens to 45-55 RC.
- MACROJET** High deposition – spray mode-austenitic **chrome manganese** wires used in quarry applications for **high impact and abrasive conditions**. 18-24 RC as deposited, work hardens to 45-55 RC.
- MACROJET V-SERIES** Austenitic **chrome-nickel-manganese enriched** with *special alloys* for reduced wear and quicker work hardening to maximum of 55 RC.  
**MACROJET V-4**  
**MACROJET V-5**  
**MACROJET V-7**

### **Hardfacing Wires:**

- HA-4-SERIES** *Austenitic chromium steel*. High abrasion 55-60 RC.  
**HA-4**  
**HA-4-CR**  
**HA-4-XCR**  
**HA-4-HC**  
**HA-4-MOHC**
- HA-5** *Austenitic chromium carbide*. High abrasion 58-62 RC.
- HA-6-SERIES** *Martensitic chromium carbide*. High abrasion 58-62 RC.  
**HA-6**  
**HA-6-CR**  
**HA-6-XCR**
- HA-7-SERIES** *Martensitic chromium carbide resistant to fine &/or wet particles*. 58-62 RC.  
**HA-7**  
**HA-7-HC**

- HA-20**      *Complex carbide deposit for abrasion with high temperature resistance. (1300°F) 62-64 RC.*
- HA-21**      *Multi complex carbide for extreme abrasion at high temperature. (1400°F) 63-66 RC.*
- MULTI-FUSION 2000** *Multi complex carbide embedded in a high grade chrome carbide matrix. Rivals welded tungsten carbide in wear resistance. Maintains properties up to 1200°F. Unlike tungsten carbide, MULTI-FUSION 2000 also withstands impact. 60-63 RC.*

## Multiple Layer Hardfacing Wires:

- HA-3-MX SERIES**      *Multiple layer hardfacing wire for good abrasion resistance and moderate impact. 40-45 RC as deposited, 50-55 RC work hardened.*
- HA-3-MX2
  - HA-3-MX3
  - HA-3-MX4
  - HA-3-MX5
  - HA-3-MX6
  - HA-3-MX7
  - HA-3-MX8
  - HA-3-MX9

- HA-60-SERIES** *Non-cracking hardfacing wire with good abrasion resistance. 52-58 RC as deposited.*
- HA-60
  - HA-61
  - HA-62
  - HA-64

## Specialty and Stainless Steel Wires:

- HA-12-Mod**      *Martensitic alloy similar to H-12 tool steel. 52-56 RC.*
- 300 & 400 Stainless**      *Various wires are listed conforming to AWS 5.22 available in both T1 and T3 forms.*
- 307
  - 308, 308-L
  - 309, 309-L
  - 316, 316-L
  - 410
  - 410 NiMo
  - 420
- HAC-7-MN**      *Austenitic heat-resisting steel similar to 300 class for special applications such as joining heat-treated steel plates. 40-45% elongation with properties maintained up to 1500°F.*
- HAD-10W**      *Martensitic matrix containing tungsten carbide. Used as a non-cracking multi-pass hardfacing wire. 40-46 RC as deposited.*
- HAD-20**      *Martensitic deposit resistant to corrosion and abrasion at temperatures up to 900°F. 45-50 RC as deposited.*
- HAD-20W**      *Martensitic deposit resistant to corrosion and abrasion at temperatures up to*

1500°F. 45-50 RC as deposited.

## Submerged Arc Wires:

- 2-S Pearlitic steel for **build up**, 23-30 RC., work hardens to 40-45 RC.
- 3-S Medium alloyed pearlitic steel for **build up**, 30-36 RC., work hardens to 40-45 RC.
- 4-S Martensitic/ pearlitic chromium steel for **multi layered hardfacing**, 36-41 RC.
- 5-S Martensitic chromium steel for **multi layered hardfacing**, 42-48 RC.
- 6-NiMo-S Medium alloyed steel for **metal to metal wear and hot rolling applications**, 38-42 RC.

## Maintenance Stick Electrodes:

**MACROMANG** Austenitic **chrome manganese** stick electrodes used in quarry applications for **high impact and abrasive conditions**. 18-24 RC as deposited, work hardens to 55 RC.

- HA-5 *Austenitic chromium carbide*. **High abrasion** 60-63 RC.
- HA-6-XCR Tubular stick electrode depositing a *martensitic chromium carbide*. **High abrasion** 58-62 RC.
- HAC-7-MN Austenitic heat-resisting steel similar to 300 class for special applications such as **joining heat-treated steel plates**. *40-45% elongation* with properties maintained up to 1500°F.
- HA-92 Cutting rod.
- HA-99 Cast-iron stick electrode for special applications involving **joining heat-treated steel plates**. *40-45% elongation* with properties maintained up to 1500°F.

## Pre-Welded Wear Plate:

Wear plates are available with two grades of overlay : High grade chrome carbide, HA-4-CR and premium grade plate overlay Multi-Fusion 2000. The thinnest base plate which can be used for overlay is 1/4" in thickness with a minimum of one pass of 1/8": Total thickness = 3/8". The maximum amount of hardfacing material available is two passes of 1/4" thick giving a total hardfaced surface of up to 1/2". There is virtually no limit on the base metal thickness. Weld plates can be pre-cut to customer specification. Inserts can be pre-welded to accommodate counter-sunk bolts. Pre-installed Nelson studs are also available.

HA-4-CR *Austenitic chromium steel*. **High abrasion** 57-61 RC.

**MULTI-FUSION 2000** *Multi complex carbide embedded in a high grade chrome carbide matrix*. Rivals welded *tungsten carbide* in wear resistance. Maintains properties up to 1200°F. Unlike tungsten carbide, **MULTI-FUSION 2000** also withstands impact. 60-63 RC.