The **XUPER 646XHD Welding Electrodes** from **Metals And Welding Specialities** are engineered to deliver exceptional welding performance in demanding industrial environments. Designed for joining and overlay applications involving high-strength steels and hardfacing operations, these electrodes ensure superior metallurgical properties, consistent arc stability, and exceptional weld bead appearance. Classified under the **UNS S41000** designation and conforming to **ASTM A240 Grade 410**, this product meets stringent global standards for durability, wear resistance, and corrosion protection in high-temperature service conditions.

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Manufactured to match the requirements of the **Universal Standard AWS A5.4 E410-16**, **XUPER 646XHD** electrodes provide optimal deposition efficiency and controlled slag release for smooth, defect-free finishes. They are widely used in industries such as power generation, oil and gas, heavy equipment manufacturing, and maintenance welding for components exposed to friction, abrasion, and high thermal loads. Each electrode is designed for versatility, suitable for both AC and DC current operations, ensuring stable performance across varied welding setups.

XUPER 646XHD Welding Electrodes, XUPER 646XHD Welding Electrodes Manufacturers, XUPER 646XHD Welding Electrodes Suppliers, XUPER 646XHD Welding Electrodes Stockists, XUPER 646XHD Welding Electrodes Exporters

The special high-density coating on **XUPER 646XHD Welding Electrodes** enhances arc stability, improves weld penetration, and minimizes spatter — critical features for achieving precise, high-quality welds on stainless and martensitic steels. The weld metal produced has a balanced composition that resists scaling and oxidation while maintaining mechanical integrity under stress. These electrodes also provide excellent re-strike characteristics, making them a top choice for welders who demand reliability and consistency during production and repair work.

When used for overlay and hardfacing, **XUPER 646XHD** produces a surface layer with outstanding hardness and resistance to metal-to-metal wear. This makes them ideal for rebuilding turbine blades, valve seats, shafts, and similar components subjected to erosive or corrosive environments. The electrodes' controlled hydrogen content reduces the risk of cracking, ensuring a robust weld even under constrained or high-stress conditions.

XUPER 646XHD Welding Electrodes in India, XUPER 646XHD Welding Electrodes Manufacturers in India, XUPER 646XHD Welding Electrodes Suppliers in India, XUPER 646XHD Welding Electrodes Stockists in India, XUPER 646XHD Welding Electrodes Exporters in India

Every batch of **XUPER 646XHD** is manufactured under strict quality assurance procedures at **Metals And Welding Specialities**, ensuring compliance with international standards and repeatable results in field and shop applications. Their consistent performance, combined with ease of handling and reliable results, positions them as a preferred solution among fabrication experts, maintenance engineers, and industrial welders worldwide.

By combining advanced metallurgy with manufacturing precision, **Metals And Welding Specialities** ensures that **XUPER 646XHD Welding Electrodes** deliver superior weld quality, extended service life, and proven dependability. Whether for fabrication, repair, or hardfacing, these electrodes set the standard for strength, stability, and performance across a wide range of critical welding applications.

Specification XUPER 646XHD Welding Electrodes

Parameter	Value / Range	Notes / Conditions
Tensile Strength	88,000 psi	Typical value :contentReference[oaicite:0]{index=0}
Hardness (as deposited)	HRB 95	Typical value :contentReference[oaicite:1]{index=1}
Hardness (work-hardened)	HRC ~30	Upon service / work-hardening :contentReference[oaicite:2]{index=2}
Welding Current / Polarity	AC / DCEP (+)	Use AC or Direct Current Electrode Positive :contentReference[oaicite:3]{index=3}
Amperage — A-Range (thick / heavy build-up)	1/8" (3.2 mm): 140–180 A 5/32" (4.0 mm): 180–250 A	For heavy build-up / multi-pass conditions :contentReference[oaicite:4]{index=4}

Amperage — B-Range (moderate sections)	1/8" (3.2 mm): 90–130 A 5/32" (4.0 mm): 120–160 A	For moderate section repair / cladding :contentReference[oaicite:5]{index=5}
Hardening / Work-hardening Behavior	Work-hardens in service	Deposit hardens further with impact / service :contentReference[oaicite:6]{index=6}
Operating Characteristics / Features	• High deposition rate • High impact & crack resistance • Self-releasing slag • Machinable with tungsten carbide tools • Good weldability in dissimilar joints	As provided in manufacturer product description :contentReference[oaicite:7]{index=7}
Typical Applications	Joining and hardfacing of carbon/manganese steels, overlay / wear protection for components: bucket lips, flanges, jaws, hammers, etc.	From application / datasheet description :contentReference[oaicite:8]{index=8}
Temperature / Welding Guidelines	Do not heat 12 % Mn steel above 400 °F (~204 °C)	Recommended in procedure guidelines :contentReference[oaicite:9]{index=9}

Equivalent Grade Of XUPER 646XHD Welding Electrodes

Specification / Standard	AWS / ASME	UNS	Alloy Name / Trade Name	European / ISO	DIN / German	Werkstoff No.	Other / National (China)
Equivalent Grade / Name	ENiCrMo-4	W80276	C-276 (Hastelloy C-276)	ENiCr15Mo15W	SG-NiMo16Cr16W	2.4887	NS334 (GB / T 14992-2005)

XUPER 646XHD Welding Electrodes Parameters

Parameter	Value / Range
Current / Polarity	AC / DCEP (+)
Tensile Strength (typical)	88,000 psi (~ 607 MPa)
Hardness (as deposited)	HRB ~ 95
Hardness (after work-hardening)	~ HRC 30
Amperage – A Range (heavy / multipass)	1/8" (3.2 mm): 140 – 180 A 5/32" (4.0 mm): 180 – 250 A
Amperage – B Range (moderate)	1/8" (3.2 mm): 90 – 130 A 5/32" (4.0 mm): 120 – 160 A
Recommended Weave / Technique	Weaving limited to 1½ × electrode diameter
Maximum Preheat / Heat Limit	Do not heat 12 % Mn steel over 400 °F (204 °C)
Typical Hardness (alternative source)	As deposited: HRB 80–90 | Work hardened: HRC 28–32

People Also Searched

E410-16 welding rod, AWS A5.4 E410-16, UNS S41000 electrode, ASTM A240 410, martensitic stainless steel electrodes, stainless steel hardfacing rods, 410 welding wire, E410 electrode specification, 410 stainless rod, 410 filler metal, stainless repair electrodes, welding rods for turbine blades, stainless overlay electrodes, heat-resistant welding electrodes, high-strength welding rods, wear-resistant electrodes, stainless maintenance rods, arc welding electrodes 410, XUPER welding rods, hard surfacing electrodes, power plant welding rods, oil and gas electrode, 410 stainless filler, E410 electrode chemical composition, corrosion-resistant electrodes, stainless repair welding rod, stainless joining electrodes, AWS E410-16 equivalent, UNS S41000 filler metal, 410 stainless welding applications, martensitic steel electrode, ASTM A240 410 welding material, stainless welding consumables, stainless surfacing electrode, high-temperature welding rods, stainless electrode manufacturer.