



Product Catalogue & Welding Handbook



**D&H Sécheron
Electrodes Pvt. Ltd.**

We Offer Complete Welding Support.



Complete Welding Support

D&H Sécheron Welding **PRODUCT DATA &** WELDING HANDBOOK

QUALITY | EXPERIENCE | SUCCESS





OUR BRANCHES

NORTH ZONE

New Delhi
211, Bhanot Corner, Plot No. 1 & 2,
Pamposh Enclave, Greater Kailash - 1,
New Delhi - 110 048
Tel: +91 11 26414035 / 26413892
Fax : +91 11 26413891
Email: dnhndl@dnhsecheron.net

EAST ZONE

Kolkata
36/1A, Gorchha Road,
Near Gariahat Tram Depot,
Gariahot, Kolkata - 700 019
Tel: +91 33 2461 8014
Fax : +91 33 2461 8014
Email: dnhkol@dnhsecheron.net

WEST ZONE

Vasai
220, Ambika Commercial Complex,
Navgrah
Vasai (E), Dist: Palghar - 401 210

SOUTH ZONE

Chennai
"Parishad Apartment" Ground Floor,
New No. 24(Old No.46), B.N. Road,
T. Nagar, Chennai - 600 017.
Tel: +91 44 28151651 / 2657 / 3857
Fax : +91 44 28152657
Email: dnhchn@dnhsecheron.net



A welder wearing a blue protective suit and mask is shown from the side, focused on welding a metal structure. Bright sparks are flying from the welding torch, illuminating the scene with a dramatic blue light.

**Never worry
about the future.
It will be built by
D&H Sécheron.**



+91 9833550505

www.dnhsecheron.com



Manufacturing Excellence

D&H Sécheron has a deep-rooted belief backed by experience that good quality machines produce the finest quality products. As a reinstatement of our belief, we have always deployed new-generation machinery on our different shop floors.

Some state-of-the-art manufacturing facilities include high-speed automated wire drawing & cutting machines, high-capacity fast extrusion machines, highly sophisticated machines for flux cored wire manufacturing, precision layer winding machines and automated vacuum packing lines.





Research & Development Center

D&H Sécheron Electrodes Pvt. Ltd. has taken the lead in the initial days itself to set up an independent R&D Centre which is seamlessly connected to the main plant at Indore. We are proud to share that our R&D lab has been recognized by the Department of Scientific and Industrial Research (Ministry of Science and Technology - Government of India) from the year 1979 onwards. The R&D Centre takes up application-oriented research to solve problems related to specific requirements of the welding industry apart from having the advisory role in the production and quality control within the company.

The R&D Centre is well equipped for its activities with the latest equipment for carrying out various destructive and non-destructive testing, metallographic studies and corrosion testing facilities available with our NABL-accredited testing lab.

The R&D Centre has been one of the key contributors to the overall sustained growth of the company by developing new welding consumables as well as enhancing the existing ones. The data-driven approach, application-oriented study and adherence to the global standards by the R&D Centre is the differentiation factor for **D&H Sécheron** as one of the most reputed brands in the industry.





Approvals

Since the inception in 1966, quality has been one of the main driving forces behind our steady expansion of products. We take every measure possible to ensure that the highest quality standards are consistently adhered to and maintained across our entire organization. We have developed an extensive range of welding consumables in accordance with the standards and requirements specified by several national and international standardization agencies and major OEMs such as LRA, IRS, RDSO, SGS, EIL, PDIL, TOYO, DGQA, BHEL, NPCIL, NTPC and many more.





Testimonials

We are very much pleased to state that we have been procuring huge quantities of FCAW consumables of D&H Sécheron Electrodes Pvt. Ltd. We appreciate the quality of all products supplied by your company and we are very much satisfied as far as the technical requirements of our clients are concerned.



HOD, Quality
Dy. General Manager
Raigarh, Chhattisgarh

We are using various D&H Sécheron welding electrodes for casting repair application since last five years. Weld characteristics and performance of all the products are found satisfactory.



HOD, QA/QC
BB Investment Casting
Metoda GIDC - Rajkot

Thanks to D&H Sécheron Electrodes Pvt. Ltd. for giving entire support of the process development. Your efforts are greatly appreciated and we look forward to continuing to work with you in the future.



Quality Manager
AMSTEEL Casting Pvt. Ltd.





Lotherme

D&H Sécheron has played a vital role in the field of Maintenance Welding; Repair & Reclamation of components to enhance their service life.

LoTherme range of products are dedicated to the maintenance needs of a broad spectrum of industries that regularly need consumables for crack repair, for joining/alterations in-situ and to combat wear in all forms. LoTherme range Includes SMAW Electrodes, Open Arc FCW, Composite Saw Wire + Flux and are exclusively used by a number of industries like the Cement, Thermal Power, Mining, Steel, Sugar, Railways, Transportation and General Engineering Industries. The LoTherme consumables are designed in such a way that while carrying out repair & reclamation welding, the components do not lose their original properties, but rather it enriches the same by prolonging their service life. A team of qualified and experienced engineers from **D&H Sécheron** offer on-site services to customers for the selection of LoTherme consumables and for the execution of repair and maintenance jobs.





Services We Offer

1. Service Welding

We undertake specialized fabrication services for in-house profiling and customized hard-facing to protect or refurbish critical components at our state-of-the-art fabrication workshop or in-situ at our customer site with reliability and quality of a global standard.



2. Training

D&H Sécheron provides customized training programs for welders and Engineers to boost their technical skills & operational efficiency. We also provide Webinar training and training on our customer sites on demand.





Industries We Serve



MINING



STEEL



CEMENT



RAILWAY



OIL & GAS



TRANSPORT



SUGAR



MARINE



POWER



SHIPPING



HEAVY ENGINEERING



AEROSPACE



Network

With a dedicated team of sales executives and a widely spread team network along with stockists, **D&H Sécheron** offers strong backup to all its customers.

Apart from India, our welding consumables are being exported to Australia, Bahrain, Bangladesh, Bhutan, Ethiopia, Ghana, Guyana (South America), Indonesia, Iran, Israel, Jordan, Kenya, Kuwait, Malawi, Malaysia, Mali, Nepal, Oman, Portugal, Qatar, Rwanda, Saudi Arabia, Senegal, Singapore, South Africa, Spain, Sri Lanka, Sudan, Togo, UAE, Uganda, Vietnam & Zambia.



Note : If you have any queries / requirements, please write to us at
tsd@dnhsecheron.net





OUR PROFILE

D&H Secheron Group has been in the forefront within Indian welding fraternity since its inception in 1966. An ISO 9000-2015, 14001-2015, 45001-2018, CE Marking, NABL certified Laboratories company, a leading name in Indian and overseas welding industry offers comprehensive package of welding products and services.

Quality, Innovation and Import substitution have been the three watchwords. This special distinction has been earned by D&H Secheron by providing '**Complete Welding Support**'. With its state of the art production facilities, a dedicated team of sales engineers and widely spread dealer network, D&H Secheron offers strong support and back up to all its customers.

Supratherme, one of our earliest and proudest achievement, (synonymous with the name of D&H Secheron), was followed by a host of special electrodes for some of the most critical applications in the industries. The brief calendar of developments highlighting the important electrodes developed (given below) reveals the distinguished achievements of D&H Secheron.

NO.	YEAR	TYPES AND DESCRIPTION
1.	1967	Supratherme : A superb E7018 class electrode unmatched in quality to date.
2.	1969	D&H 45S : Special electrodes for welding of galvanising tanks.
3.	1969	CCR (Special) : For hardfacing of blast furnace bells and hoppers.
4.	1969	D&H 1200 T : Nickel base alloy electrode conforming to the AWS Classification ENiCrFe -2
5.	1970	Supratherme (Spl) : For -50°C used in fabrication of heavy water towers (DAE)
6.	1971	Supratherme-Ni : Approved and used by NPCIL for -46°C (-50°F) for thermal cooling shields.
7.	1972	Batox-B : Basic coated stainless steel electrode (AWS E308L) used in nuclear fabrication (dump tank).
8.	1972	Rutox-F : Stainless steel electrode conforming to the AWS Classification E316L-16 with ferrite below 2%





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| 9. | 1973 | D&H 150: For welding HV9A stainless steel for phosphoric acid service. Approved by FCI. Suitable for HV9, HV9A, Alloy 20 and Carpenter 20 Steels. |
| 10. | 1973 | Batox D: Basic coated stainless steel electrode conforming of the AWS Classification E316L, for liquid solution storage tanks. |
| 11. | 1974 | Nitherme-3.5: AWS Classification E8016-C2, Developed for welding of 3.5% nickel-steel for cryogenic applications down to -80°C. |
| 12. | 1974 | Cromotherme-5: AWS Classification E8018-B6. Developed for service temperatures up to 600°C for oil refineries. |
| 13. | 1974 | Cromotherme-9: AWS Classification E8018-B8. Developed for and accepted by Engineers India Ltd., Haldia Refinery Project, as the first indigenous electrode of its class. |
| 14. | 1974 | D&H 1212: AWS Classification ENiCrFe-3. Developed as an equivalent of imported Inconel-182 for welding of HK40 alloy tubes. |
| 15. | 1975 | D&H 920B: Stainless steel electrode. Developed for, approved and used by Bharat Heavy Plate and Vessels Ltd., Visakhapatnam, for -196°C application in fabrication of liquid oxygen Plants. |
| 16. | 1975 | D&H 1400: Similar to Hastelloy C. Developed and used for hardfacing of hot shearing blades in steel plants. |
| 17. | 1976 | Supratherme-Ni (Spl): AWS E 8018-G. Approved by Engineers India Ltd., for temperatures down to -60°C. Used for welding of crude oil storage tanks fabricated out of quenched and tempered Steels. |
| 18. | 1977 | Rutox-F (U) and Batox-F (U): Fully austenitic stainless steel electrode for outstanding corrosion resistance in urea service. |





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19. 1978 LoTherme range of low heat input electrode for repair and maintenance welding in several industries to conserve precious materials and components.
20. 1979 Further developments in electrodes for urea service.
21. 1980 Electrodes with extra low hydrogen 'less than 3m1/100gms for welding under high relative humidity conditions.
22. 1981 **Corotherme:** Electrodes for welding weathering steels.
23. 1983 Special C-Mn steel electrodes with enhanced properties for heavy water project.
24. 1985 Electrodes for welding high tensile Q&T steels.
25. 1986 Further developments in electrodes for Q&T steels for defence applications.
26. 1987 Special electrodes for defence applications.
27. 1989 **Nitherme-3.5L:** Electrode conforming to E7016-C2L for -101°C applications.
28. 1992 **Tensotherme-Cu:** An electrode for welding LoPearl steel which is used for resisting corrosion by molasses.
29. 1992 **Super-Mn:** A specially formulated electrode depositing Mn steel weld metal.
30. 1992 **Tensal (Sp1):** An electrode conforming to E10018-D2 for welding of alloy steel castings.
31. 1992 **Rutox-AN:** An electrode conforming to E308H1 for welding of 304H.
32. 1993 **Supratherme (Mod):** An electrode conforming to GS-8 specifications of EIL for H₂S service. The weld metal possesses excellent resistance to SSCC and HIC.
33. 1993 **Rutox 20/9/3:** An electrode for welding armour plates meeting FVRDE 1056(a) specification requirements.





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| 34. | 1994 | D&H 2093L: A stainless steel electrode for welding duplex stainless steels. |
| 35. | 1994 | D&H 535: A surfacing electrode for building up hot forging dies. |
| 36. | 1995 | Dietherme-HD: An electrode for surfacing forging hammer dies. |
| 37. | 1995 | Cromotherme-1(Spl), Cromotherme-2(Spl): Special electrodes depositing creep. resisting weld metal. |
| 38. | 1996 | D&H 62, D&H 450: Hardfacing electrodes for steel plant applications. |
| 39. | 1996 | Super-Cut: An economical cutting electrode. |
| 40. | 1996 | Abrotherme: A hardfacing electrode for thermal power plants. |
| 41. | 1997 | Molytherme(Mod): A C-Mo electrode, with good impact properties at sub-zerotemp |
| 42. | 1997 | Cromotherme-1(Mod): A Cr-Mo electrode with impact properties at sub-zerotemperature. |
| 43. | 1997 | Cobaltherme-6: A cobalt based electrode. |
| 44. | 1998 | Cromotherme-2(Mod) : Superior toughness at sub-zero, at- 18°C and temper embrittlement resistance. |
| 45. | 1998 | Cromotherme-9(Mod): Conforming to E9018-B9 classification for welding T91 / P91 material. |
| 46. | 1998 | D&H16/8/2: Conforming to E16-8-2 classification. |
| 47. | 1998 | D&H25/10/4: For super duplex stainless steel welding with PREN> 40. |
| 48. | 1998 | D&H430Cb: For welding 18%Cr stainless steel. |
| 49. | 1999 | D&H 9650: For reclaiming forging dies. |
| 50. | 1999 | D&H25/5/3: Conforming to E2553-16 classification for welding duplex stainless steels which contain approximately 25%Cr. |





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| 51. | 1999 | Cromotherme-20Mo: A Cr-Mo-V electrode for filling up work alloy castings of similar composition. |
| 52. | 1999 | D&H 600: A hardfacing electrode ideal for resisting abrasion or heavy impact or both together. |
| 53. | 1999 | Autotherme-1: A copper coated continuous solid wire conforming to AWS ER70S-6 for Co ₂ welding. |
| 54. | 2000 | Super MnCr: An electrode for hardfacing carbon steel, low alloy steel & austenitic manganese steel where resistance to severe abrasion is desired. |
| 55. | 2000 | D&H 1260: An electrode conforming to ENiCrMo-6 for welding 9%Ni steel. |
| 56. | 2000 | Cromotherme-9(Spl): An electrode for welding P-92 materials. |
| 57. | 2001 | Molytherme-R: An electrode conforming to IS : E63BD124J for welding CONCOR Bogies. |
| 58. | 2001 | D&H 1225: Conforming to ENiCrCoMo-1 classification for welding furnace heating elements, reformer tubes, and similar composition alloys etc. |
| 59. | 2001 | Norma-V: Medium coated rutile type all position electrode for welding mild steel. |
| 60. | 2001 | Medio-V: All position electrode deposit gives radiographic quality. |
| 61. | 2002 | LoTherme-619: Low heat input hardfacing electrode for recommending worn-out MM [steel and Gr.90A points and crossings for in use hightraffic density routes. |
| 62. | 2002 | D&H 444L-15: For welding ASTM-CA6NM casting and similar composition materials. The consumable is conforming to E410NiMo-15 classification. |
| 63. | 2003 | D&H 1223: Conforming to ENiCrMo-3 classification for welding Ni-Cr-Mo alloys to themselves and to steel. |





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| 64. | 2003 | D&H1425: Conforming to ENiMo- 1 classification, suitable for process applications in the as welded condition. |
| 65. | 2003 | Supratherme-Spl(Mod): An electrode to meet HIC, SSCC and impact requirement at -51°C. |
| 66. | 2003 | D&H145LN: A special purpose stainless steel electrode depositing 25%Cr-9%Ni-2.3%Mo-1.5%Cu-N weld metal. |
| 67. | 2003 | Cromotherme-5(Mod): Conforming to E8018-B6 to meet toughness requirements at -10°C. |
| 68. | 2003 | LoTherme-627: A suitable formulated low heat input hardfacing electrode for reclamation of rolls, crane wheels, etc. |
| 69. | 2004 | Supratherme-H4R: Moisture resistant electrode for producing tough and ductile weld of radiographic quality. Electrodes supplied in Vacuum packing, it does not require expensive re-drying. |
| 70. | 2004 | Supratherme(Spl)-H4R: Moisture resistant electrode for producing tough and ductile weld of radiographic quality. Electrode meets impact requirement at -50°C and supplied in Vacuum packing. |
| 71. | 2004 | D&H1227: Conforming to ENiCrMo-7 classification for welding Ni-Cr-Mo alloys. |
| 72. | 2004 | Cobaltherme-21: Cobalt-based electrode depositing a weld metal having Stellite 21 grade and used for repairing hot trimming dies. |
| 73. | 2004 | D&H150L(Spl): Special electrode conforming to E383-16 classification. |
| 74. | 2004 | LoTherme-618S: Specially formulated low heat input hardfacing electrode for Sugar Mill roller. Weld metal hardness ranges from: 58-60 HRC. |





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75. 2004 **Batox-MoN:** A basic coated welding electrode depositing 18%Cr-11%Ni-2%Mo-N type weld metal. The deposit displays good crack resistance and excellent creep strength and resists scaling at elevated temperatures.
76. 2004 **Cromotherme-5L:** Basic coated low carbon & low hydrogen type electrode, conforming to E8018-B6L classification.
77. 2004 **Cromotherme-9L:** Specially designed for welding of ferritic martensitic chrome steel conforming to E8018-B8L classification.
78. 2004 **Rutox-Mo(H):** A stainless steel electrode depositing 18%Cr-11%Ni-2.3%Mo with high carbon, provides higher tensile and creep strength at elevated temperatures.
79. 2004 **Batox-D(Spl):** Basic coated electrode yielding an extra low carbon, 18%Cr-12%Ni-2.3%Mo-N weld deposit highly resistant to intergranular corrosion.
80. 2004 **LoTherme-625:** Low heat input hardfacing electrode for reconditioning of worn-out MM steel and Gr.90A points and crossings for use in high traffic density 35GMT.
81. 2004 **Nitherme-2.5(Mod):** A low hydrogen electrode depositing 2.2%Ni-0.30%Cr-0.03%Ti weld metal. Ideal for welding fine grained and Nickel steels for service temperatures down to -60°C.
82. 2005 **D&H672:** Deposits high Nickel alloy containing Cr-W-Mo. Weld deposit resist heat and heavy impact. Ideal for hot working tools.
83. 2005 **Batox-B(N):** A stainless steel electrode depositing 19%Cr-10%Ni-0.08%N weld metal which has excellent' resistance to intergranular corrosion.
84. 2006 **D&H 320:** Conforming to E320 - 16 classification.
85. 2006 **Molytherme-Extra(Mod):** A low hydrogen iron powder electrode with superior toughness.





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86. 2006 **Cromotherme-1L(Mod):** Electrodes suitable for welding 1.25%Cr-0.5%Mo creep resisting steel. The weld metal possesses excellent tensile strength together with toughness even at -20°C. Conforming to E7018B2-L classification.
87. 2006 **Batox-D (NP):** Basic coated electrode yielding 0.05%C-18%Cr-12%Ni-2.3%Mo-N weld deposit. Conforming to IGCAR Specification PFBR/30000/1032/SP/R-1.
88. 2006 **Nitherme-2.5L:** A low hydrogen electrode depositing 2.5%Ni in the weld metal. Weld metal possesses excellent toughness at sub-zero temperatures down to -73°C. Conforming to E 7018-C1L classification.
89. 2007 **Molytherme-Spl:** The weld metal possesses high strength together with good notch toughness even at subzero temperature down to -50°C.
90. 2007 **Cellutherme-Mo:** Deeply penetrating, forceful, spray type arc electrode to yield 0.5%Mo weld deposit.
91. 2007 **D&H25/10/4W:** Conforming to E2595-16 for use primarily to weld duplex stainless steels which contain approximately 25%Cr.
92. 2007 **Cromotherme-2L (Mod) :** It is used for welding P22/T22 low carbon version. It gives low hardness and consistent sub zero impact toughness even at -20°C.
93. 2007 **CNM (SPL)M :** Conforming to E120180M,suitable for joining many high strength, low alloy or micro alloyed steels to themselves or to lower strength steels.
94. 2007 **D&H1200T(Ns):** A non-synthetic electrode depositing homogeneous Ni-Cr-Fe alloy composition. It can meet impact at -196°C & lateral expansion requirements.
95. 2007 **D&H 1212 (NS):** A non-synthetic electrode depositing homogeneous Ni-Cr-Fe alloy composition. It can meet impact at -196°C & lateral expansion requirements.





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96. 2007 **D&H 953:** Special hardfacing electrode for Nitrided dies.
97. 2008 The covering of 17 stainless steel electrodes introduced. These are modification of the 16 covering. On horizontal fillet welds, electrodes with a 17 covering tend to produce more of a spray arc and a finer rippled weld-bead surface.
98. 2008 **Ultratensal-Cu:** It is a basic coated extra low hydrogen electrode. Ideally suited for welding of high strength Q&T steels, like WEL TEN 80, SA 517 grades, WB36 and their equivalent grades.
99. 2008 **Cellutherme-P80:** It has been designed primarily for welding typical high strength pipe butt joints in the vertical welding position with downward or upward progression. Conforming to E8010-P1.
100. 2008 **Molytherme-G:** It is a low hydrogen electrode yielding a weld deposit containing Mn-Mo. The electrode is ideally suited for welding SA 302 Gr.B steels &, similar composition materials.
101. 2008 Wear plate and complete full-fledged automated job work, work shop established.
102. 2009 **Cromotherme-91:** Non-synthetic electrode depositing weld metal of 9%Cr-1%Mo modified with Al, V, Nb, and N for welding P91 materials. Conforming to E9015-B9 classification.
103. 2009 **Cromotherme-92:** A low hydrogen electrode deposits 9%Cr-1%Mo and enriched with Niobium, Vanadium, Nitrogen and tungsten. Some typical materials where this electrode can be used are P92, Rotor Steel, E 911 steels, GX12 Cr MoWVNbW1etc.
104. 2009 **D&H 2209 (NS):** Ideal for welding duplex stainless steels. The weld metal possesses excellent corrosion resistance in marine & paper environments. Suitable for welding duplex stainless steels having Cr ≤ 25% and other grades like UNS 32205, UNS 31803, etc.





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105. 2009 **D&H 2553(NS):** Non-synthetic rutile coated electrode depositing duplex stainless steel weld metal. The electrode can be used where resistance to pitting corrosive attack and resistance to stress corrosion cracking are required.
106. 2009 **D&H 320LR (NS):** The elements C, Si, P and S maintained as low as possible and Nb Mn re controlled to get better properties. The typical applications include HV-9A stainless steel, for fabricating carpenter 20 stainless steels etc.
107. 2009 **D&H 385:** It is particularly suited for welding Carpenter 20, HV9, HV9A, Uranus B6, UHB 904L, Sandvik 2RK65, and similar materials which are used for these service conditions.
108. 2009 **Nitherme-1.5(SPL):** Ideal for welding fine grained and Nickel steels for service temperatures down to -50°C. Typical applications include storage tanks for liquefied gases like Ammonia, distillers in coke oven batteries and petrochemical industries. Conforming to E8018-C4 classification.
109. 2009 **D&H 1212 (MOD):** Electrode depositing 65%Ni-20%Cr-2%Nb-1.5%Mo weld metal. It is ideally suited for surfacing steel with Nickel-Chromium-Iron alloy when high Manganese contents are not detrimental, for welding clad side of Nickel Chromium-Iron clad steel and dissimilar metal combinations. Suitable for overlay of forge plates. Specially recommended for welding 9% Ni Steels for cryogenic service.
110. 2010 **D&H 383:** Non-synthetic electrode depositing low carbon 28%Cr-31.5%Ni-3.7%Mo-1 fully austenitic weld metal. Weld metal exhibits excellent resistance to corrosion in non-oxidizing on-oxidizing media like Sulfuric acid, Phosphoric acid, etc. Ideally suited for welding stainless steels of similar composition and Other equivalent grades of stainless steels.





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111. 2010 **D&H 2594 (NS):** Non-synthetic electrode depositing super duplex stainless steel weld metal. The weld metal exhibits high strength, high impact energy, and resistance to stress corrosion cracking, pitting, and crevice corrosion.
112. 2010 **D&H 1223 (NS):** A non-synthetic electrode depositing homogeneous Ni-Cr-Mo alloy composition. Ideal for welding Ni-Cr-Mo alloys to themselves and to steel, and for surfacing. The electrodes are used in applications where the temperature ranges from cryogenic to 540°C.
113. 2010 **D&H 1400(Mod):** Non-synthetic electrode for joining, repair and surfacing, to resist abrasion, corrosion, oxidation and high temperature service. Weld metal containing low carbon Cr-Mo-W-Co. Excellent resistance to heat, strength and toughness up to 1000°C.
114. 2010 **Cromotherme-23:** Low hydrogen iron powder electrode depositing 2.2%Cr-0.5%Ni-0.2%Mo-1.5W-0.2V. Weld metal of having less impurities i.e. S, P will improve the impact property at subzero temperatures. Ideal for welding P23 material welding.
115. 2010 **D&H 2595 (NS):** Non-synthetic electrode depositing super duplex stainless steel weld metal with PREN \geq 40. The weld metal exhibits high strength, high impact energy, and resistance to stress corrosion cracking, pitting, and crevice corrosion.
116. 2010 **Indotherme Spl (Mod):** A basic coated hydrogen controlled electrode. The weld metal possesses excellent crack resistance, toughness and excellent resistance to SSCC and HIC. It is suitable for mild steel and medium high tensile steels.
117. 2010 **Rutox-A (N):** A stainless steel electrode depositing 22Cr-10Ni-0.15N weld metal. The weld metal has higher resistance to cracking, oxidation and scaling at





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elevated temperatures up to 1100°C. It is ideally suitable for welding of stainless steels of similar composition like ASTM S30815.

118. 2011 **Cromotherme-1(RTE):** Weld metal having strict control on S, P, As, Sn & Sb will improve the subzero impact Property and resists temper embrittlement. Ideal for welding steam generating equipments and reactor vessels.
119. 2011 **Indotherme-H4R:** Basic coated, low hydrogen, moisture resistance electrode with vacuumpack.
120. 2011 **Tensal (MOD):** Special low hydrogen type electrodes. The weld metal possesses high strength together with good notch toughness even at subzero temperatures down to -50°C. Ideally suited for welding fine-grained steels, high strength steels, Q&T steels used in the fabrication of structures, bridges, penstocks, earth moving equipments other materials like DIRSO 500HT, heat exchangers, etc.
121. 2011 **Cromotherme-91W:** A low hydrogen electrode deposits 9%Cr-0.5%Mo-1.75%W micro alloyed with Niobium, Vanadium, Nitrogen and Boron. Tungsten additions provides adequate creep rupture strength at higher steam pressures and temperatures. The controlled addition of micro alloying elements increased the high temperature strength and creep behaviour. It is designed to weld advanced power plant materials like boiler super heater and re-heater tubes. It is also used for header and steam piping for extremely severe steam conditions. The typical materials that are welded with this consumable are A213 T92, A335 P92, A387 Gr 92, etc.
122. 2011 **Nimotherme-1(Spl):** Low hydrogen iron powder electrode depositing 1%Ni-0.25%Mo weld metal. Confirming to E8018-C3 class. Ideally suited for welding grain refined steels and nickel steels for service temperatures down to -60°C. Typical applications include storage tanks for liquefied gases





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like Ammonia, distillers in coke oven batteries and petrochemical industries. Also suitable for welding heavy sections and highly restrained joints subjected to dynamic loading, impact and severe service conditions.

123. 2011 Complete range of Tubular hard facing electrodes launched.
124. 2011 **Cromotherme-2 (RTE):** Special electrode to meet temper embrittlement requirements. Weld metal having strict control on S,P,As,Sn & Sb will improve the subzero impact properly and resists temper embrittlement. Ideal for welding steam generating equipments and reactor vessels.
125. 2011 **Cromotherme-24:** The electrode is used for welding similar composition materials and SA-182, F22V SA-336, F22V 8v SA-541, 22V. Specially applicable wherever prolonged heat treatments are involved together with the impact property requirement at subzero temperature up to -18°C. Basically it is used for fabricating desulphurization reactors, heavy section pressure vessels having similar composition.
126. 2011 **Rutox-AH(Cu):** Joining and surfacing of 18%Cr-8%%Ni stainless steel and clad steels of similar composition materials i.e. 18Cr-8%Ni cast steel, forged steel, etc. Cladding carbon steel and low alloy steel. Steels conforming to AISI 304H and their equivalents can be welded. The composition designed to withstand high temperature and pressures in super critical & ultra super critical boilers.
127. 2011 **Rutox-AN(St):** Special electrode producing 19%Cr-10%Ni-Cb stabilized weld metal with N. Joining and surfacing of 18%Cr-8%Ni stainless steel and clad steels of similar composition materials i.e. 18%Cr-8%Ni cast steel, forged steel, etc. Cladding carbon steel and low alloy steel. Steels conforming to AISI 304, 321, 347, and their equivalents can be welded. The composition designed to withstand high temperature and pressure in SC & USC boilers.





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128. 2011 **D&H 310N (St):** It is a stainless steel electrode depositing 25%Cr-20%Ni with N weld metal. It is designed for welding in all conventional positions. Weld metal possesses excellent mechanical properties and resists scaling at high temperatures up to 1200°C. It is ideally suited for the welding of similar and dissimilar compositions, including hardenable steels, clad steels, Carbon -Molybdenum and Chromium - Molybdenum steels where pre-heat, and post weld heat treatments are impracticable. The composition designed to withstand high temperature and pressure in SC & USC boilers.
129. 2012 **Supratherme (Spl) CT:** The weld metal is of radiographic quality and displays remarkable impact strength even at -60°C. Typical applications include welding of carbon steels, steels sensitive to hydrogen embrittlement, heavy and rigid structures, pressure vessel and equipment subjected to severe stress and requiring good toughness properties at sub zero temperatures down to -60°C.
130. 2012 **D&H 25/4:** Weld metal has excellent performance in high temperature up to 1100°C. Weld metal defend against attack of sulphurous oxidizing or reducing combustio gases. Electrode is for joining and surfacing or heat-resistant chromium and chromium-nickel steel and cast steel of Similar compositions.
131. 2012 **Rutox-D(Sp1):** It is a rutile coated electrode yielding an extra low carbon (1.025%max) with ferrite (6-12 FN) in the weld metal. The Weld metal has excellent resistance to intergranular corrosion even at elevated temperatures. Ideally suited for welding stainless steels of similar composition. Ideal for joining wrought and cast materials in a number of industries like rayon, dye, paper, chemical, fertilizer, petrochemicals, etc. Surfacing & overlay applications.
132. 2012 **D&H 1423 (NS):** It is suitable for welding components in plants for chemical processes with highly corrosive





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media. Typical base materials which are welded with this product are ASTM 8574, B575, B619, B622 and B626 with UNS No. N06022. Ideal for C-22 alloys.

133. 2012 **Rutox-B (Spl):** It is a rutile coated electrode yielding an extra low carbon (0.025% max) with ferrite (5-10 FN) in the weld metal. The weld metal has excellent resistance to intergranular corrosion even at elevated temperatures.
134. 2012 **D&H 1217 (NS):** Control boron and zirconium are helpful in reducing the tendency for ductility dip cracking. It is ideally suited for welding the Ni-Cr-Fe alloy of the UNS number N06690. Typical specifications for Ni-Cr-Fe base metals are ASTM B166, B167 and B168. Ideal for stringent requirements in the construction of nuclear reactors.
135. 2012 **D&H 1232 (NS):** Typical specifications for the Cr-Ni-Mo stainless steel base metal are A240, A167, A182, A249, A276, A312, A358, A373, and A479, most particularly the grade UNS S31254 / 254 SMO / 6% Mo SS type. In a chloride containing environment, the fully austenitic weld-metal exhibits high resistance to Pitting, Crevice Corrosion & Stress Corrosion Cracking. It is ideal for Sulphuric and Phosphoric acid media that has been contaminated by chlorides. It can also be used for welding of 625 and 825 grade Ni-based alloys.
136. 2012 **D&H 1414 (NS):** Weld metal gives good resistance to the corrosion, resistance to reducing, oxidizing, crevice and pitting corrosion. It is suitable to join duplex, super duplex and super austenitic stainless steel and ideally suitable for nickel alloys such as Inconel alloy C-276, 622, 625, 686, UN N06059 and N06022.
137. 2013 **Unitherme-70:** It is ideally suited for the fabrication of carbon steels particularly fillet and butt welds for faster deposition. Electrodes are best suited for thicker base metal. The higher metal recovery makes it the ideal choice for heavy fabrication.





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138. 2013 **Cromotherme-9H4R:** It is used for welding similar composition plates, pipes, forging and tubes. Typical applications include welding of A387 Gr.9 plate, A335 P9 pipe, A217 C12 castings, A213 T9 tubes etc.
139. 2014 **D&H 4130:** It is a specially designed electrode to match the heat treating properties of SAE 4130 and 8630 materials. It is ideally suited for joining and surfacing of SAE 4130 and 8630 materials. The weld metal fulfills the NACE MR 01-75 requirements for use on oil field equipment in sour (H_2S) gas and oil environment.
140. 2014 **SECHERON 410NM:** It is a special purpose electrode depositing 12%Cr-1.2%Ni-0.2%Mo weld metal, which has excellent resistance to corrosion, erosion, pitting and impact. It is ideally suited for joining of similar composition materials, groove welding and filling of GX8CrNi12 grade Steel castings. Typical applications include process pumps, steam valves, gas valves, volute casting casing covers, pump shaft impellers, etc.
141. 2014 **D&H430NM :** Is a special purpose electrode depositing 16%Cr-5%Ni-1%Mo weld metal, which has excellent resistance to corrosion, erosion, pitting and impact. Typical applications include surfacing of high pressure valves, turbine blades, valve seats, repairs of runners, pumps-and combustion building, pulp and paper plant equipment, etc.
142. 2014 **Indotherme(Spl) H4R:** is suitable for mild steel and medium high tensile steels subjected to dynamic loading, high stresses and impact. Weld deposit displays excellent toughness at sub zero temperatures down to $-46^{\circ}C$.
143. 2014 **Indotherme(Spl)Mod-H4R:** is basic coated, low hydrogen, moisture resistance electrode. Weld metal has crack resistant and tough weld metal of radiographic quality. It is suitable for mild steel and medium high tensile steels subjected to dynamic





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loading, high stresses and impact. Weld deposit displays excellent toughness at sub zero temperatures down to -46°C.

144. 2015 **Secheron 308Mo:** electrode display good resistance to corrosion, cracking & scaling. is recommended for welding ASTM CF8 stainless steel castings and welding wrought materials such as type 316 stainless when increased ferrite is desired.
145. 2015 **Ultratensal-69:** Is basic coated, extra low hydrogen electrode ideally suited for welding high strength Q&T steels like Welten 80 SA517 grades and their equivalents. The weld metal has excellent crack resistance and displays high strength combined with good sub-zero impact strength. It is ideal for welding high strength low alloy steels used for sub-marine hull construction.
146. 2015 **D&H 1201(NS):** Electrodes are used for welding Nickel-Chromium-Iron alloy for the clad side of joints in steel clad with steel Nickel-Chromium-Iron alloy, and for surfacing steel with Nickel-Chromium-Iron on weld metal. The electrodes may be used for applications at temperatures ranging from cryogenic to around 980°C. These electrodes are also suitable for joining steel to Nickel base alloys.
147. 2016 **Nitherme-6.5L:** Is low hydrogen and low carbon type electrode depositing 6.5%Ni steel weld metal. Ideal for welding fine grained and Nickel steels for service temperatures down to -115°C. Typical applications include pressure vessels, piping, valves and tanks used for storage, transportation and distribution of liquefied gases. Also suitable for welding heavy sections and highly restrained joints subjected to dynamic loading, impact and severe service conditions.
148. 2016 **D&H NM-CI:** Is the most economical for repairing various types of cast iron where machinability of the weld deposit is not required, where weld shrinkage





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stress is not a concern and color match of the base metal should not be expected. It melts at relatively low temperatures which permit the use of low welding currents. Commonly used on gears, motor housings, machine parts, farm equipment, large frames, etc.

149. 2016 **Cromotherme-921:** Is basic coated, low hydrogen electrode. Weld metal contain 9.5%Cr-1.5%Mo-1.0%Co modified with Niobium, Vanadium, Boron and Nitrogen designed to provide improved creep strength, toughness, fatigue life, oxidation and corrosion resistance at elevated temperatures. It is designed to weld the materials in power plant and refineries. It is ideally suited for welding advances creep resistant GX-13CrMoCoVNb 9-2-1 steel.
150. 2016 **Molytherme-CM:** Is a basic coated, low hydrogen electrode for depositing 0.5%Cr-1.1%Mo-V creep resistant weld metal, it is ideally suited for welding of steels of similar it composition. Typical applications include welding Cr-Mo-V steels used in boilers pipelines in chemical, power plants, castings, etc.
151. 2016 **Cromotherme-7:** Is a basic coated, low hydrogen electrode for depositing 7%Cr-0.5% Mo creep resistant weld metal. It is ideally suited for welding of steels of similar composition. Typical applications include welding Cr-Mo steels used in boilers, pipelines in chemical, power plants, castings, etc.
152. 2017 **Molytherme-CM:** Is a basic coated, low hydrogen electrode for depositing 0.5%Cr-1.1%Mo-V creep resistant weld metal.
153. 2017 **Batox-409Nb:** Is a basic coated stainless steel electrode depositing 12%Cr-0.5%Ni-1%Nb weld metal.
154. 2017 **Batox-16/8/2:** Is a basic coated, stainless steel electrode depositing 15.5%Cr-8.5Ni-1.3%Mo stainless steel weld metal.
155. 2017 **Secheron 410 NC:** is a special purpose Electrode depositing 13%Cr-3%Ni-0.8%Cu weld metal which has excellent resistance to corrosion, erosion, pitting





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and impact. It is specially suited for welding 06XH3DL grade castings.

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| 156 | 2017 | BOR-F: is a basic coated electrode producing an air hardening weld metal which has excellent resistance to abrasion. |
| 157 | 2018 | LoTherme-410C: is ideally suited for the repair of all tool steels. It is also suitable for repair of shearing blades, planer plate anvils, drills. |
| 158 | 2018 | LoTherme-444C: is ideally suited for buildup directly on cast iron draw dies including gray, nodular, ductile cast irons. |
| 159 | 2018 | LoTherme-623F: Typical applications include cane cutting knives, crusher hammers, jaws, rollers, rock drills, tractor grousers, etc |
| 160 | 2019 | D&H 409Nb: Is a rutile coated stainless steel electrode depositing 12%Cr-0.5%Ni-1%Nb weld metal. Added Nb in weld metal to produce a ferritic microstructure with fine grains. |
| 161 | 2019 | Maxfil-MC-31: Is a gas shielded metal-cored wire designed for welding of low & medium tensile steels structures subjected to dynamic loading. |
| 162 | 2020 | Nimotherme-1(Spl)Mod: Is a low hydrogen, iron powder electrode yielding a tough and ductile weld deposit having 1%Ni-0.25%Mo. Ideally suited for welding fine-grained and nickel steels for service temperatures down to minus 40°C. |
| 163 | 2020 | D&H310(Mod): Is a low carbon 25%Cr-20%Ni-4%Mn type electrode for welding steels of similar composition. The weld metal has excellent resistance to oxidation and scaling up to 1200°C. |
| 164 | 2020 | D&H1233: Electrode for welding similar and dissimilar alloys like mild steel, stainless steel & nickel base alloys. Weld metal has good pitting and crevice corrosion resistance. It resists scaling up to 1100°C. |





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| 165 | 2021 | Ultratherme-P2: Designed to weld hot, fill & cap passes in high strength pipe butt joints. Specifically suited for API 5L pipes welding. |
| 166 | 2021 | Nimotherme-NM1: is a low-hydrogen electrode, which contains about 1%Nickel and 0.5% Molybdenum. This electrode can be welded without PWHT. |
| 167 | 2021 | Nimotherme-NM2: is a basic coated, low-hydrogen electrode. This electrode is intended to meet strength requirements after extended post weld heat treatment as required in the construction of nuclear power plants. |
| 168 | 2021 | Rutox-G: It is most often used to weld AISI Type 240 and 241 base metals. These alloys are nitrogen-strengthened austenitic stainless steels exhibiting high strength with good toughness over a wide range of temperatures. |
| 169 | 2021 | Secheron-209: It is most often used to weld AISI type 209 (UNS S20910) base metals. The alloy is a nitrogen strengthened austenitic stainless steel exhibiting high strength with good toughness over a wide range of temperatures. |
| 170 | 2021 | D&H 20/18/6 Cu: Is a stainless steel electrode depositing an extra low carbon 20%Cr-18%Ni-6%Mo-0.7%Cu stainless steel weld metal. The weld metal has excellent resistance to pitting and crevice corrosion. |
| 171 | 2021 | D&H 1414 (NS): provide excellent operating characteristics for groove and fillet welding in down hand position and smaller diameter electrodes are suitable for all position welding. |
| 172 | 2021 | D&H 430 MC: is a basic coated all position electrodes depositing 17%Cr-1.3%Mo. The weld metal shows good corrosion resistibility and good oxidation resistibility. |
| 173 | 2021 | Maxfil-39R: Low alloy steel flux cored wire for welding of high strength fine grained quenched & tempered steels to meet sub-zero impact resistance property. |





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| 174 | 2022 | Ultratensal-1000: Is a basic coated electrode. The weld metal displays good crack resistance and produces sound weld metal possessing excellent strength combined with good impact properties at sub-zero temperature. |
| 175 | 2022 | Ultratensal-1050: Is a basic coated and very low hydrogen electrode producing high strength weld metals. The weld metal displays good crack resistance and produces sound weld metal possessing excellent strength combined with good impact properties at sub-zero temperature. |
| 176 | 2022 | Batox 310L Mo N: Basic coated electrodes produce low carbon, silicon, and high manganese. The nitrogen in the weld metal helps to stabilize and strengthen the austenitic phase. |
| 177 | 2022 | LoTherme-9580(Mod): Have balanced chemical composition contain with Cr-Ni-Mo and V. It is designed for surfacing / cladding of a new die and re-building of worn-out hot forging dies. |
| 178 | 2022 | LoTherme GS-535 (SPL): Forging die rebuilding flux cored wire suitable for weld surfacing & reclamation of forging hot working tools where hardness requirement is >40 HRC |
| 179 | 2022 | Lotherme OA-618: Is a specially designed for hard facing on carbon steel & Stainless Steel for applications encountering severe abrasion and erosion at elevated temperatures up to 850°C. The deposit will exhibit surface relief checks, soft and stable arc. |

Our plant at Indore is fully equipped to produce all types of electrodes under strict quality control. All raw materials are tested before use in the manufacture of electrodes. Each batch of electrodes undergoes various process control stages and final testing of the weld metal in our laboratories to ensure the best quality consistently.

We furnish comprehensive line of arc welding electrodes. The range includes a wide selection of mild steel, high tensile steel, creep resistant steel, nickel steel, stainless steel, hard surfacing, cast iron and nickel based electrodes. We also have our wide range of products LoTherme electrode which are specially designed for maintenance and





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repair welding.

The electrodes manufactured by us conform to the applicable specifications laid down by the Bureau of Indian Standards, American Welding Society, British Standards, DIN & JIS standards. We also manufacture special electrodes to meet the specific requirements of the customers. A large number of electrodes have been elaborately tested and approved by reputed inspection agencies like the Bureau of Indian Standards, Research Design and Standards Organization, Engineers India Limited, Director of Boilers, Projects Development India Ltd., Llyod's Register of Shipping, Bureau Veritas, American Bureau of Shipping and Det Norske Veritas. We are an ISO 9000-2015, 14001-2015, 45001-2018, CE Marking, NABL accredited company.

D&H Sécheron has taken the lead in setting up an independent Research and Development centre attached to the main plant at Indore. Research and Development activities in fact, have been given prime importance at D&H Sécheron since its very inception. Our R&D centre is well equipped with latest equipments for carrying out destructive and non-destructive tests like creep testing, tensile testing, hardness testing, impact testing down to -196°C, metallographic studies, corrosion testing and radiographic testing. The R&D centre was recognized by the Department of Science and Technology of "The Government of India" in 1979. The centre also takes up application-oriented research problems to solve specific requirements of user industry and with the aim of propagating appropriate welding technology. Our lab has been accredited by National Accreditation Board for testing and calibration Laboratories (NABL), Department of Science & Technology, India.

Technical service is an important feature associated with D&H Sécheron. We have a large team of qualified and experienced engineers & managers posted throughout the country to render prompt technical and customer service. Our technical service personnel help the customers in studying the welding application, selection of appropriate electrode and the procedure, training of welding personnel with the aim of achieving optimum quality at minimum Cost.

Thus, today D&H Sécheron has progressed in this field steadily and has equipped itself with the latest technology to offer solution to its valued customer in the best possible manner.

"We offer complete welding support".





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Complete Welding Support

SMAW

Stick Electrodes



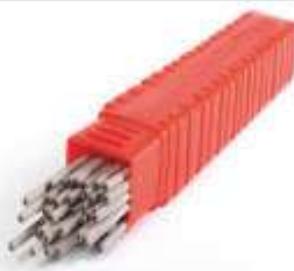


CELLUTHERME



Codification :

AWS SFA 5.1	E6010
IS 814	EC4310X
EN ISO 2560-B	E 43 10 A



Characteristics & Applications :

Cellutherme is a light coated cellulosic type electrodes. The electrodes are characterized by a deeply penetrating, forceful, spray type arc and readily removable, thin, friable slag. Ideally suited for welding in all positions including vertical down. The weld metal possesses good mechanical properties. Ideal for stove pipe technique and faster welding. Welds are of radiographic quality. It is ideally suited for root pass welding of API 5L X42 and X46 grades. Typical applications include welding of pipes, tubes, ducts, etc.

Typical Chemical Composition Of All Weld Metal (%) :

Element	C	Mn	Si	S	P
Typical	0.07	0.50	0.20	0.016	0.018

Typical Mechanical Properties Of All Weld Metal :

Properties	UTS(MPa)	YS(MPa)	%El (L=5d)	CVN Impact Strength (J)	
				- 30°C	- 20°C
Typical	480	400	27	50	70

Welding Positions :



Current And Packing Data : DC(±)

Size (mm)	Dia x Length	4x350	3.15x350	2.5x350
Current Range (Amps)		110-160	70-100	40-65
Qty(Pcs/Carton)		80	120	200

Approvals : CE, EIL, PDIL

Precautions :

- In order to achieve best results, ensure a good joint fit-up.
- Do not use high current, which may lead to high spatter loss.





CELLUTHERME-AC

D&H
sécheron
Complete Welding Support

Codification :

AWS SFA 5.1	E6011
EN ISO 2560-B	E 4311 A



Characteristics & Applications :

Cellutherme-AC is a light coated cellulosic type, ideally suited for welding in all positions including vertical downwards. The electrode is characterized by forceful, spray type arc, which is also stable and easy to strike and re-strike. The weld beads are evenly rippled. Extremely beneficial for welding of pipes in "Stove Pipe Technique" both for faster welding and greater control on penetration of the root runs. The welds are of radiographic quality. It is designed for welding pipes and tubes of all diameters in Stove Pipe Technique specially for root runs for achieving good penetration. Typical applications include: Storage tanks, Pressure vessels, Tank wagons, Tipping wagons, Rail coaches, Automobile body and panels, Chutes, Silos, Chimneys, Ducts, Ship's hull construction, etc.

Typical Chemical Composition Of All Weld Metal (%) :

Element	C	Mn	Si	S	P
Typical	0.07	0.50	0.20	0.016	0.018

Typical Mechanical Properties Of All Weld Metal :

Properties	UTS(MPa)	YS(MPa)	%El (L=5d)	CVN Impact Strength (J)
				- 30°C
Typical	480	400	27	50

Welding Positions :



Current And Packing Data : DC(±)

Size (mm)	Dia x Length	4x350	3.15x350	2.5x350
Current Range (Amps)		110-150	70-105	50-70
Qty(Pcs/Carton)		80	120	200

Approvals : CE

Precautions :

- In order to achieve best results, ensure a good joint fit-up.
- Do not use high current, which may lead to high spatter loss.



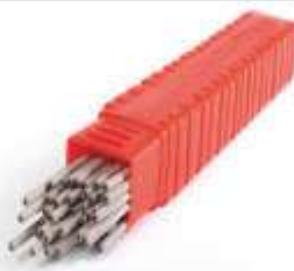


CELLUTHERME-Mo



Codification :

AWS SFA 5.5	E7010-G
EN ISO 2560-B	E 49 10 G A



Characteristics & Applications :

Cellutherme-Mo is a light coated cellulosic type electrodes. The electrodes are characterized by a deeply penetrating, forceful, spray type arc and readily removable, thin, friable slag. Ideally suited for welding in all positions including vertical down. Ideal for stove pipe technique and faster welding. Welds are of radiographic quality. Electrode is designed to yield a weld deposit containing 0.5Mo and therefore is suitable for welding C-0.5%Mo steels. It is ideally suited for root pass welding of API 5L X42 to X60 grades. Typical applications include welding of pipes, tubes, ducts, etc.

Typical Chemical Composition Of All Weld Metal (%) :

Element	C	Mn	Si	S	P	Mo
Typical	0.08	0.45	0.15	0.020	0.025	0.51

Typical Mechanical Properties Of All Weld Metal :

Properties	UTS(MPa)	YS(MPa)	%El (L=5d)
Typical	511	434	26.0

Welding Positions :



Current And Packing Data : DC(±)

Size (mm)	Dia x Length	4x350	3.15x350	2.5x350
Current Range (Amps)		110-150	70-100	40-65
Qty (Pcs/Carton)		80	120	200

Approvals : Adani Infra, CE

Precautions :

- In order to achieve best results, ensure a good joint fit-up.
- Do not use high current, which may lead to high spatter loss.



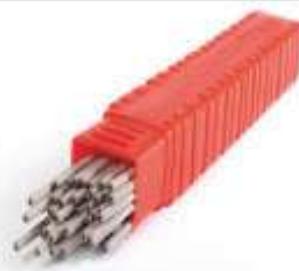


CELLUTHERME-70P1

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 Complete Welding Support

Codification :

AWS SFA 5.5	E7010-P1
EN ISO 2560-B	E 4910 P1 A



Characteristics & Applications :

Cellutherme-70P1 is a light coated cellulosic type electrodes. The electrodes are characterized by a deeply penetrating, forceful, spray type arc and readily removable, thin, friable slag. Ideally suited for welding in all positions including vertical down. Ideal for stove pipe technique and faster welding. Welds are of radiographic quality. It is suitable for stringent pipeline welding requirements when tested for low temperature impact toughness. Ideal for root pass welding of up to API 5L X80 grade pipe, and hot, fill and cap pass welding of up to X65 grade pipe.

Typical Chemical Composition Of All Weld Metal (%) :

Element	C	Mn	Si	S	P	Cr	Ni	Mo	V
Typical	0.14	1.00	0.50	0.010	0.012	0.20	0.75	0.25	0.01

Typical Mechanical Properties Of All Weld Metal :

Properties	UTS(MPa)	YS(MPa)	%El (L=5d)	CVN Impact Strength (J)	
				- 30°C	
Typical	530	470	24.0		40

Welding Positions :



Current And Packing Data : DC(±)

Size (mm)	Dia x Length	4x350	3.15x350	2.5x350
Current Range (Amps)		110-150	70-100	50-70
Qty (Pcs/Carton)		80	120	200

Approvals : CE

Precautions :

- In order to achieve best results, ensure a good joint fit-up.
- Do not use high current, which may lead to high spatter loss.





CELLUTHERME-80Mo



Codification :

AWS SFA 5.5	E8010-G
EN ISO 2560-B	E 5510 G A



Characteristics & Applications :

Cellutherme-80Mo electrodes have been designed primarily for welding typical high-strength, pipe butt joints in the vertical welding position with downward or upward progression. This electrode operates with a forceful penetrating arc, produce deep penetrating, spray-type welding arcs and thin, easily removable slag. It is extremely beneficial for welding of pipes in "Stove Pipe Technique" both for faster welding and greater control on penetration of the root runs. The welds are of radiographic quality. It is ideally suited for welding of API 5L-X56 & API 5L-X70 piping assemblies.

Typical Chemical Composition Of All Weld Metal (%) :

Element	C	Mn	Si	S	P	Ni	Mo
Typical	0.08	0.45	0.15	0.018	0.018	1.00	0.25

Typical Mechanical Properties Of All Weld Metal :

Properties	UTS(MPa)	YS(MPa)	%El (L=5d)
Typical	570	500	21.0

Welding Positions :



Current And Packing Data : DC(±)

Size (mm)	Dia x Length	4x350	3.15x350	2.5x350
Current Range (Amps)		120-170	90-120	60-80
Qty (Pcs/Carton)		80	120	200

Approvals : CE

Precautions :

- In order to achieve best results, ensure a good joint fit-up.
- Do not use high current, which may lead to high spatter loss.





CELLUTHERME-P80



Codification :

AWS SFA 5.5	E8010-P1
EN ISO 2560-B	E 5510 P1 A



Characteristics & Applications :

Cellutherme-P80 electrodes have been designed primarily for welding typical high-strength, pipe butt joints in the vertical welding position with downward or upward progression. This electrode operates with a forceful penetrating arc and deposits a weld metal of 0.15%Cr - 0.6%Ni - 0.35%Mo steel. Extremely beneficial for welding of pipes in "Stove Pipe Technique" both for faster welding and greater control on penetration of the root runs. It is ideally suited for welding of API 5L-X65 & API 5L-X70 piping assemblies.

Typical Chemical Composition Of All Weld Metal (%) :

Element	C	Mn	Si	S	P	Cr	Ni	Mo	V
Typical	0.08	0.8	0.30	0.018	0.020	0.15	0.60	0.35	0.02

Typical Mechanical Properties Of All Weld Metal :

Properties	UTS(MPa)	YS(MPa)	%El (L=5d)	CVN Impact Strength (J)	
				- 30°C	
Typical	570	500	26.0		40

Welding Positions :



Current And Packing Data : DC(±)

Size (mm)	Dia x Length	4x350	3.15x350	2.5x350
Current Range (Amps)		120-170	90-120	60-80
Qty (Pcs/Carton)		80	120	200

Approvals : CE

Precautions :

1. In order to achieve best results, ensure a good joint fit-up.
2. Do not use high current, which may lead to high spatter loss.





NORMA

Established 1969
D & H
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 Complete Welding Support

Codification :

AWS SFA 5.1	E6013
IS 814	ER4222
EN ISO 2560-A	E 35 0 R 12



Characteristics & Applications :

A medium coated rutile type AC/DC all position expect vertical downward electrode for welding mild steel structures, rail coaches, wagons, storage tanks, ships, sheet metal work etc.

Typical Chemical Composition Of All Weld Metal (%) :

Element	C	Mn	Si	S	P
Typical	0.08	0.44	0.22	0.020	0.020

Typical Mechanical Properties Of All Weld Metal :

Properties	UTS(MPa)	YS(MPa)	%El (L=5d)	CVN Impact Strength (J)
				0°C
Typical	481	436	27	62

Welding Positions :



Current And Packing Data: AC / DC(-)

Size (mm)	Dia x Length	5x450	4x450	3.15x350	2.5x350
Current Range (Amps)		180-220	140-180	100-140	60-90
Qty (Pcs/Carton)		65	100	150	260

Approvals :

ABS, Adani Infra, BHEL, BIS, BV, CE, DNV, EIL, Indian Navy, IRS, LRA, NTPC, PDIL



+91 9833550505



NORMA-L



Codification :

AWS SFA 5.1

E6013



Characteristics & Applications :

Norma-L is a medium coated general purpose all position mild steel electrode for welding low carbon and mild structural steels. It gives radiographic quality weld metal. The electrode operates with a quiet arc and deposits a smooth bead with fine ripples. The slag is easily detachable. The electrode produces minimum spatter and has good striking and re-striking characteristics. The electrode operates well under low OCV transformers. Typical applications include welding of steel structures, tanks, truck frames and bodies, machinery construction, auto bodies, frames, pipes etc.

Typical Chemical Composition Of All Weld Metal (%) :

Element	C	Mn	Si	S	P
Typical	0.10	0.30	0.25	0.025	0.025

Typical Mechanical Properties Of All Weld Metal :

Properties	UTS(MPa)	YS(MPa)	%El (L=4d)	CVN Impact Strength (J)
				+ 27°C
Typical	480	420	24	55

Welding Positions :



Current And Packing Data : AC / DC (-)

Size (mm)	Dia x Length	5x450	4x450	3.15x350	2.5x350
Current Range (Amps)		180-220	140-180	90-130	60-90
Qty(Pcs/Carton)		40	60	90	140





NORMA-S



Codification :

AWS SFA 5.1

E6013



Characteristics & Applications :

A medium coated general purpose all position mild steel electrode for welding low carbon and mild structural steels. It gives radiographic quality weld metal. The electrode operates with a quiet arc and deposits a smooth bead with fine ripples. The slag is easily detachable. The electrode produces minimum spatter and has good striking and re-striking characteristics. The electrode operates well under low OCV transformers. Typical applications include welding of steel structures, tanks, truck frames and bodies, machinery construction, auto bodies, frames, pipes etc.

Typical Chemical Composition Of All Weld Metal (%) :

Element	C	Mn	Si	S	P
Typical	0.09	0.35	0.25	0.025	0.025

Typical Mechanical Properties Of All Weld Metal :

Properties	UTS(MPa)	YS(MPa)	%El (L=4d)	CVN Impact Strength (J)
				RT
Typical	480	420	24	55

Welding Positions :



Current And Packing Data: AC / DC(-)

Size (mm)	Dia x Length	4x450	3.15x350	2.5x350
Current Range (Amps)		140-180	90-130	60-90
Qty (Pcs/Carton)		55	85	140





NORMA-V



Codification :

AWS SFA 5.1	E6013
IS 814	ER4211



Characteristics & Applications :

A medium coated general purpose all position electrode for welding low carbon and mild structural steels. It gives radiographic quality weld metal. The electrode operates with a quiet arc and deposits a smooth bead with fine ripples. The slag is easily detachable. The electrode produces minimum spatter and has good striking and re-striking characteristics. The electrode operates well under low OCV transformers and direct current either polarity. Easy to operate in all positions including vertical down. Typical applications include welding of steel structures, tanks, truck frames and bodies, machinery construction, auto bodies, frames, pipes etc.

Typical Chemical Composition Of All Weld Metal (%) :

Element	C	Mn	Si	S	P
Typical	0.08	0.45	0.25	0.020	0.020

Typical Mechanical Properties Of All Weld Metal :

Properties	UTS(MPa)	YS(MPa)	%El (L=4d)	CVN Impact Strength (J)
				0°C
Typical	475	406	24	55

Welding Positions :



Current And Packing Data: DC(±)

Size (mm)	Dia x Length	5x450	4x450	3.15x350	2.5x350
Current Range (Amps)		190-230	140-180	100-140	60-90
Qty (Pcs/Carton)		35	55	85	140

Approvals : BIS



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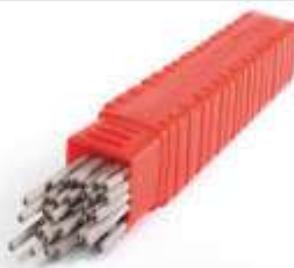


NORMA-X



Codification :

AWS SFA 5.1	E6013
IS 814	ER4222X
EN ISO 2560-A	E 35 0 R 12



Characteristics & Applications :

Norma-X is a medium coated rutile type electrode useful in any welding shop for general fabrication and maintenance work in mild steel. It gives radiographic quality weld metal. The flux coating is so controlled that the electrode provides excellent performance in all welding positions except vertical downward. It works very well even with low OCV transformers and gives very smooth flow with stable arc with low spatter and smoke. The detachability of slag is very easy and gives uniform ripples with good appearance. Thus, Norma-X has special and exclusive appeal to the welders. The weld metal is ductile and presents good mechanical properties with consistent quality. It is ideally suited for welding of all mild steel structures, bus body building, automobile bodies, pipes as well as other mild steel general applications.

Some of the typical applications include :

Structural steel, Bridges, Truck bodies, Bus bodies, Machinery construction, Auto parts, Building structures, Steel furniture, Rail coaches & wagons, Ships, Tugs, Barges, Dredgers, Trawlers, Storage tanks, Boilers, Pipe lines.

Typical Chemical Composition Of All Weld Metal (%) :

Element	C	Mn	Si	S	P
Typical	0.08	0.55	0.25	0.015	0.018

Typical Mechanical Properties Of All Weld Metal :

Properties	UTS(MPa)	YS(MPa)	%El (L=5d)	CVN Impact Strength (J)
				0°C
Typical	490	430	25	62

Welding Positions :



Current And Packing Data : AC/DC(-)

Size (mm)	Dia x Length	5x450	4x450	3.15x450	2.5x350
Current Range (Amps)	180-220	130-180	100-140	60-90	
Qty (Pcs/Carton)	55	100	150	200	

Approvals : BIS, BV, CE



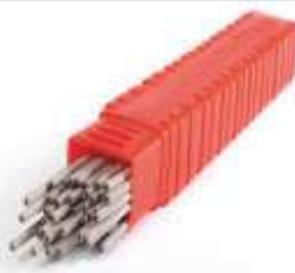
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MEDIO

Codification :

AWS SFA 5.1	E6013
IS 814	ER4222X
EN ISO 2560-A	E 35 0 R 12



Characteristics & Applications :

A medium coated rutile type Touch electrode designed to operate even with 45 OCV. Suitable for all types of mild steel structures, plant machinery, pipes, dredgers, trawlers, etc. The weld metal is soft, ductile and is of radiographic quality.

Typical Chemical Composition Of All Weld Metal (%) :

Element	C	Mn	Si	S	P
Typical	0.08	0.46	0.22	0.020	0.023

Typical Mechanical Properties Of All Weld Metal :

Properties	UTS(MPa)	YS(MPa)	%El (L=5d)	CVN Impact Strength (J)
				0°C
Typical	485	438	28	60

Welding Positions :



Current and packing data : AC / DC(-)

Size (mm)	Dia x Length	5x450	4x450	3.15x450	3.15x350	2.5x350
Current Range (Amps)	200-260	140-190	100-135	100-135	60-90	
Qty (Pcs/Carton)	50	90	150	150	225	

Approvals :

ABS, BIS, BV, CE, CIB-MP, DNV, EIL, Indian Navy, IRS, L&T Power, LRA, NPCIL, NTPC, PDIL



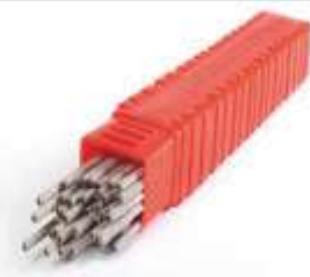


MEDIO-S



Codification :

AWS SFA 5.1	E6013
IS 814	ER4322X



Characteristics & Applications :

Medio-S is a rutile electrode ideally suited for welding of carbon steels. The weld metal is of radiographic quality and possesses excellent notch toughness at -20°C. Typical applications include ship construction, tanks, barges, dredgers, structures, etc.

Typical Chemical Composition Of All Weld Metal (%) :

Element	C	Mn	Si	S	P
Typical	0.055	0.55	0.16	0.020	0.020

Typical Mechanical Properties Of All Weld Metal :

Properties	UTS(MPa)	YS(MPa)	%El (L=4d)	CVN Impact Strength (J)
				- 20°C
Typical	485	436	28	50

Welding Positions :



Current And Packing Data: AC / DC(-)

Size (mm)	Dia x Length	5x450	4x450	3.15x450	2.5x350
Current Range (Amps)		190-240	150-180	100-130	60-90
Qty (Pcs/Carton)		50	75	120	180

Approvals :

Indian Navy



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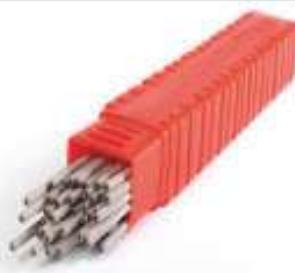


MEDIO-V



Codification :

AWS SFA 5.1	E6013
IS 814	ER4211X



Characteristics & Applications :

Medio-V is a medium coated, rutile type, all position electrode. The electrode operates on alternating and direct current either polarity. The weld metal is soft, ductile, metallurgically clean and mechanically sound with radiographic quality. Typical applications include industrial pipes and tubes, storage tanks, boilers, fire boxes tanks, ships, barges, dredgers, trawlers, tugs rail coaches, etc.

Typical Chemical Composition Of All Weld Metal (%) :

Element	C	Mn	Si	S	P
Typical	0.08	0.45	0.22	0.018	0.023

Typical Mechanical Properties Of All Weld Metal :

Properties	UTS(MPa)	YS(MPa)	%El (L=4d)	CVN Impact Strength (J)	
				0°C	
Typical	485	440	28		60

Welding Positions :



Current and packing data : AC / DC(±)

Size (mm)	Dia x Length	6.3x450	5x450	4x450	3.15x450	3.15x350	2.5x350
Current Range (Amps)		260-320	190-250	140-190	100-140	100-140	60-90
Qty (Pcs/Carton)		30	50	90	150	150	180

Approvals : BIS



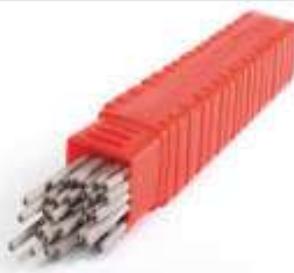


EXOBEL



Codification :

AWS SFA 5.1	E6013
IS 814	ER4222X
EN ISO 2560-A	E 35 0 R 12



Characteristics & Applications :

A heavy coated rutile type electrode for achieving radiographic quality welds in mild steel boilers, pressure vessels, ships, hull construction, etc. Excellent bead appearance and self peeling slag. Typical applications also include storage tanks, wagons, automobile frames and bodies, rolling stocks, rail coaches locomotive fire boxes, etc.

Typical Chemical Composition Of All Weld Metal (%) :

Element	C	Mn	Si	S	P
Typical	0.07	0.46	0.20	0.020	0.020

Typical Mechanical Properties Of All Weld Metal :

Properties	UTS(MPa)	YS(MPa)	%El (L=5d)	CVN Impact Strength (J)	
				0°C	
Typical	485	444	28		70

Welding Positions :



Current and packing data : AC / DC(-)

Size (mm)	Dia x Length	6.3x450	5x450	4x450	3.15x450	2.5x350
Current Range (Amps)	260-320	190-240	140-200	100-135	70-100	
Qty (Pcs/Carton)	25	35	55	80	150	

Approvals : BIS, CE, CIB-MP, EIL, IRS, NPCIL



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UNITHERME



Codification :

AWS SFA 5.1	E6020
IS 814	EA4245X



Characteristics & Applications :

Unitherme is an iron oxide type electrode for welding of carbon steels. The welds are radiographic quality. Typical applications include locomotive fire boxes, rotary kilns, heavy structures, engine frames, bases, etc.

Typical Chemical Composition Of All Weld Metal (%) :

Element	C	Mn	Si	S	P
Typical	0.07	0.50	0.23	0.020	0.020

Typical Mechanical Properties Of All Weld Metal :

Properties	UTS(MPa)	YS(MPa)	%El (L=4d)	CVN Impact Strength (J)
				0°C
Typical	475	416	24	50

Welding Positions :



Current and packing data : AC / DC(-)

Size (mm)	Dia x Length	6.3x450	5x450	4x450	3.15x450	2.5x350
Current Range (Amps)	260-350	190-260	150-210	110-150	70-100	
Qty (Pcs/Carton)	30	45	70	90	125	

Precautions :

1. Redry the electrodes at 125°C for 01 hour, if necessary.
2. Ensure use of electrode in horizontal and flat positions.





RAPIDEX



Codification :

AWS SFA 5.1	E7014
IS 814	ES5224JX



Characteristics & Applications :

A medium heavy coated, iron powder rutile type electrode suitable for welding all mild steel structures, boilers, pressure vessels. Welds are of radiographic quality. The electrode has a metal recovery of 115 %. Rapidex is suitable for all types of joints to achieve faster speed and higher welding output. Typical applications include boilers, pressure vessels, wagons, girders, tanks, ships, barges, machine parts, etc.

Typical Chemical Composition Of All Weld Metal (%) :

Element	C	Mn	Si	S	P
Typical	0.07	0.58	0.24	0.018	0.020

Typical Mechanical Properties Of All Weld Metal :

Properties	UTS(MPa)	YS(MPa)	%El (L=4d)	CVN Impact Strength (J)
				0°C
Typical	515	444	28	60

Welding Positions :



Current and packing data : AC / DC(-)

Size (mm)	Dia x Length	6.3x450	5x450	4x450	3.15x450	2.5x350
Current Range (Amps)		260-340	200-260	160-200	100-150	70-100
Qty (Pcs/Carton)		25	35	55	75	100



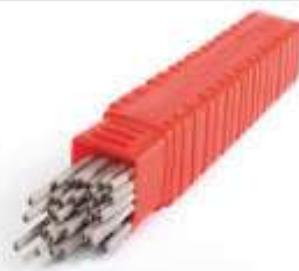


FERROVITE



Codification :

AWS SFA 5.1	E7024
EN ISO 2560-A	E350R52



Characteristics & Applications :

A Super heavy coated, iron powder type electrode ideal for welding mild steel structures, plant machinery, etc. High metal recovery of 150% reduces welding time and increases the output. Weld metal is sound and is of radiographic quality. Some typical applications include mild steel structures, heavy columns, shipbuilding, locomotives, girders, boilers, etc.

Typical Chemical Composition Of All Weld Metal (%) :

Element	C	Mn	Si	S	P
Typical	0.07	0.56	0.24	0.025	0.025

Typical Mechanical Properties Of All Weld Metal :

Properties	UTS(MPa)	YS(MPa)	%El (L=5d)	CVN Impact Strength (J)
				0°C
Typical	520	448	27	56

Welding Positions :



Current And Packing Data: AC / DC(±)

Size (mm)	Dia x Length	6.3x450	5x450	4x450	3.15x350
Current Range (Amps)		320-380	220-280	190-230	140-170
Qty (Pcs/Carton)		20	30	45	50

Approvals : CE

Precautions :

1. Ensure the electrodes are dry. Re-dry the electrodes at 150-200°C for 01 hour.
2. The electrode is meant for operation in flat and horizontal positions only.





TENSOTHERME



Codification :

AWS SFA 5.1

E6018



Characteristics & Applications :

Tensotherme is basic coated hydrogen controlled iron powder electrode for welding of mild steels for critical services. The welds are especially suitable for dynamic loading. It is specially designed for welding of plant, machinery and equipment subjected to critical service loads in combination with varying temperature cycles, for example, in fabrication of converter shells for the steel industry.

Typical Chemical Composition Of All Weld Metal (%) :

Element	C	Mn	Si	S	P
Typical	0.07	0.64	0.22	0.014	0.020

Typical Mechanical Properties Of All Weld Metal :

Properties	UTS(MPa)	YS(MPa)	%El (L=4d)	CVN Impact Strength (J)	
				RT	
Typical	475	400	25.0	160	

Diffusible Hydrogen Content: 5 ml/100 gms of weld metal max.

Welding Positions :



Current And Packing Data: AC / DC (+)

Size (mm)	Dia x Length	6.3x450	5x450	4x450	3.15x350	2.5x350
Current Range (Amps)		280-350	220-280	160-200	110-140	80-100
Qty (Pcs/Carton)		24	35	55	75	125

Precautions :

1. Re-dry the electrodes at 350°C for 01 hour.
2. Use short arc, low current and lowest size of electrode possible.



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INDOTHERME

Established 1969
D & H
 sécheron
 Complete Welding Support

Codification :

AWS SFA 5.1	E7016
EN ISO 2560-A	E423B12



Characteristics & Applications :

A medium coated basic type hydrogen controlled electrode producing a tough, ductile weld metal for welding heavy sections in mild steel, medium high tensile steels, subjected to dynamic loading. Also suited for cast steels, difficult steels of unknown composition and for non-machinable deposits on cast iron. Typical applications include coaches, ships, heavy duty structures, earth moving machinery, rotary kiln shells, cast irons.

Typical Chemical Composition Of All Weld Metal (%) :

Element	C	Mn	Si	S	P
Typical	0.07	1.10	0.54	0.018	0.021

Typical Mechanical Properties Of All Weld Metal :

Properties	UTS(MPa)	YS(MPa)	%El (L=5d)	CVN Impact Strength (J)
				- 30°C
Typical	558	477	28	70

Welding Positions :



Current and packing data : AC / DC(+)

Size (mm)	Dia x Length	6.3x450	5x450	4x450	3.15x450	2.5x350
Current Range (Amps)		240-320	190-250	140-200	90-140	70-100
Qty (Pcs/Carton)		25	35	55	75	150

Approvals : BHEL, BIS, CE, EIL, NTPC, PDIL

Precautions :

1. Ensure the electrodes are dry. Re-dry the electrodes at 300°C for 2 hours.
2. Use short arc, minimize heat input.





INDOTHERME-CS



Codification :

AWS SFA 5.1	E7016
IS 814	EB5426H ₂ X



Characteristics & Applications :

Indotherme-CS is a medium coated, basic type hydrogen controlled electrode producing a tough, crack resistant weld metal of radiographic quality. It is specially designed for welding cast steels, difficult steels high in carbon and sulphur.

Typical Chemical Composition Of All Weld Metal (%) :

Element	C	Mn	Si	S	P
Typical	0.07	0.80	0.30	0.018	0.020

Typical Mechanical Properties Of All Weld Metal :

Properties	UTS(MPa)	YS(MPa)	%El (L=4d)	CVN Impact Strength (J)
				- 30°C
Typical	530	460	26.0	34

Welding Positions :



Current And Packing Data: AC / DC (+)

Size (mm)	Dia x Length	6.3x450	5x450	4x450	3.15x450	2.5x350
Current Range (Amps)		240-320	190-250	140-180	90-140	70-90
Qty (Pcs/Carton)		25	35	55	75	125

Precautions :

1. Re-dry the electrodes at 250-300°C for 01 hour.
2. Use smallest size of electrode possible.
3. Use low current, short arc and stringer beads.





INDOTHERME(SPL)

Established 1969
D & H
 sécheron
 Complete Welding Support

Codification :

AWS SFA 5.1	E7016-1
IS 814	EB5626H ₂ X



Characteristics & Applications :

Indotherme(Spl) is a medium coated basic type hydrogen controlled electrode producing a tough, ductile weld metal for welding heavy sections in mild steel, medium high tensile steels, subjected to dynamic loading. Weld deposit displays excellent toughness at sub zero temperatures down to -45°C. It is ideally suited for cast steels, difficult steels of unknown composition and for non-machinable deposits on cast iron. Typical applications include Rail coaches, Wagons, Ships, Road rollers, Heavy duty cranes, Conveyors, Earth moving machinery, Tractors, Hydraulic gates, Rotary kiln shells, Concrete reinforcement rods, Welding cast iron, Depositing buffer layer on steels before hardfacing, etc.

Typical Chemical Composition Of All Weld Metal (%) :

Element	C	Mn	Si	S	P
Typical	0.07	1.40	0.50	0.018	0.021

Typical Mechanical Properties Of All Weld Metal :

Properties	UTS(MPa)	YS(MPa)	%El (L=4d)	CVN Impact Strength (J)
				- 45°C
Typical	550	460	28	50

Welding Positions :



Current And Packing Data: AC / DC (+)

Size (mm)	Dia x Length	6.3x450	5x450	4x450	3.15x450	2.5x350
Current Range (Amps)	240-320	190-250	140-200	90-140	70-100	
Qty (Pcs/Carton)	25	35	55	75	150	

Precautions :

1. Ensure the electrodes are dry. Re-dry the electrodes at 300°C for 2 hours.
2. Use short arc, minimize heat input.



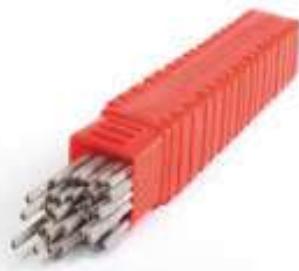


INDOTHERME(SPL)H4R



Codification :

AWS SFA 5.1	E7016-1 H4R
IS 814	EB5626H,X



Characteristics & Applications :

Indotherme(Spl)H4R is a basic coated, low hydrogen, moisture resistant electrode. It is suitable for mild steel and medium high tensile steels subjected to dynamic loading, high stresses and impact. Weld deposit displays excellent toughness at sub zero temperatures down to -45°C. Some of the applications include: Heavy structures subjected to dynamic loading, Rail coaches, Wagons, Ships, Road rollers, Heavy duty cranes, Conveyors & other materials handling plant and equipment, Earth moving machinery, Tractors, Hydraulic gates, Rotary kiln shells, Concrete reinforcement rods, Welding cast iron, Depositing buffer layer on steels before hardfacing, etc.

Typical Chemical Composition Of All Weld Metal (%) :

Element	C	Mn	Si	S	P
Typical	0.06	1.30	0.30	0.019	0.020

Typical Mechanical Properties Of All Weld Metal :

Properties	UTS(MPa)	YS(MPa)	%El (L=4d)	CVN Impact Strength (J)
				- 45°C
Typical	530	460	28.0	60

Diffusible Hydrogen Content: 4 ml / 100 gms of weld metal Max.

Moisture As Conditioned: 0.30 Max.

Moisture As Exposed (80% RH, 27°C For 9 Hrs): 0.40 Max

Advantage : Electrodes are Vacuum packed, no need of drying and can be used straight on the job.

Welding Positions :



Current And Packing Data: AC / DC (+)

Size (mm)	Dia x Length	5x450	4x350	3.15x350	2.5x350
Current Range (Amps)		190-250	140-200	90-140	70-100
Qty (Pcs/Carton)		2	2	2	2

Precautions :

1. Re-dry the electrodes at 250°C for 01 hour, if expose to atmosphere.
2. Restrict the heat input, use short arc and stringer bead.



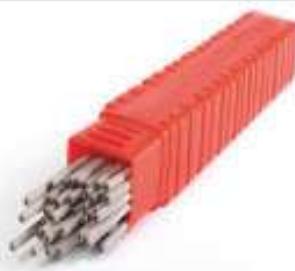


SUPRATHERME



Codification :

AWS SFA 5.1	E7018
IS 814	EB5426H,JX
EN ISO 2560-A	E 42 3 B 3 2



Characteristics & Applications :

A heavy coated low hydrogen, iron powder type electrode ideally suited for producing tough and ductile welds of radiographic quality in boilers, pressure vessels and heavy structures subjected to dynamic loading. The electrodes have a metal recovery of about 115%. Some typical applications include heavy structures subjected to dynamic loading and impact, highly restrained joints, coaches, wagons, penstocks, boilers, pressure vessels, earthmoving machines, etc.

Typical Chemical Composition Of All Weld Metal (%) :

Element	C	Mn	Si	S	P
Typical	0.06	1.02	0.44	0.022	0.022

Typical Mechanical Properties Of All Weld Metal :

Properties	UTS(MPa)	YS(MPa)	%El (L=5d)	CVN Impact Strength (J)
				- 30°C
Typical	545	460	28	65

Welding Positions :



Current And Packing Data: AC / DC (+)

Size (mm) Dia x Length	6.3x450	5x450	4x450	3.15x450	2.5x350
Current Range (Amps)	270-320	200-250	150-190	100-150	70-100
Qty (Pcs/Carton)	25	50	70	100	150

Approvals : ABS, Adani Infra, BHEL, BIS, BV, CE, CIB-MP, DNV, EIL, Indian Navy, IRS, L&T Power, LRA, NPCIL, NTPC, PDIL, Reliance (Engineering)

Precautions :

1. Ensure the electrodes are dry. Re-dry the electrodes at 300°C for 2 hours.
2. Use short arc, minimize heat input.



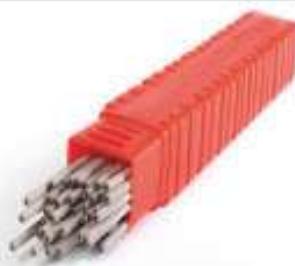


SUPRATHERME(MOD)



Codification :

AWS SFA 5.1	E7018
IS 814	EB5426H,JX
EN ISO 2560-A	E423B32H5



Characteristics & Applications :

Supratherme(Mod) is a basic coated, iron powder, hydrogen controlled, all conventional position electrode, produces radiographic quality welds, having excellent cracking resistance. The electrode ideally suited for welding carbon steels used in the construction of equipment subject to heavy dynamic load impact and severe service conditions in sour gas service.

Typical Chemical Composition Of All Weld Metal (%) :

Element	C	Mn	Si	S	P
Typical	0.06	1.02	0.44	0.006	0.013

Typical Mechanical Properties Of All Weld Metal :

Properties	UTS(MPa)	YS(MPa)	%El (L=5d)	CVN Impact Strength (J)	Weld Metal Hardness (HV5)
				- 30°C	
Typical	545	460	30.0	100	180

Corrosion Test : Passes corrosion test as per NACE standard TM-01-77-96 (SSCC) and TM-02-84-96(HIC).

Diffusible Hydrogen Content : 5ml /100 gms of weld metal Max.

Welding Positions :



Current And Packing Data: AC / DC(+) :

Size (mm)	Dia x Length	6.3x450	5x450	4x450	3.15x450	2.5x350
Current Range (Amps)		270-320	200-250	150-190	100-140	70-100
Qty (Pcs/Carton)		25	30	50	75	100

Approvals : CE, EIL

Precautions :

1. Ensure the electrodes are dry. Re-dry the electrodes at 300°C for 2 hours.
2. Use short arc, minimize heat input.





SUPRATHERME(SPL)MOD-H4R



Codification :

AWS SFA 5.1	E7018-1H4R
IS 814	EB5626H,JX



Characteristics & Applications :

Moisture resistant hydrogen controlled basic coated electrode for producing tough and ductile weld of radiographic quality in Boilers, Pressure vessels, Medium carbon steels, Cast steel and problematic steels. The weld metal is clean and has low level of impurities, thus having unique properties. The electrode can be used in all conventional positions of welding. It is ideally suited for welding carbon steels used in the construction of equipment subjected to heavy dynamic load, impact and severe service conditions in sour gas service.

Typical Chemical Composition Of All Weld Metal (%) :

Element	C	Mn	Si	S	P
Typical	0.06	1.40	0.30	0.010	0.015

Typical Mechanical Properties Of All Weld Metal :

Properties	UTS(MPa)	YS(MPa)	%El (L=4d)	CVN Impact Strength (J)
				- 45°C
Typical	540	430	29.0	80

Corrosion Test : The weld metal meets the requirements as per NACE: TM-01- 77- 96 (SSCC) and TM-02-84-96 (HIC).

Diffusible Hydrogen Content: 4 ml / 100 gms of weld metal Max.

Moisture As Conditioned: 0.30 Max.

Moisture As Exposed (80% RH, 27°C For 9 Hrs): 0.40 Max.

Advantage: Electrodes are Vacuum packed, no need of drying and can be used straight on the job.

Welding Positions :



Current And Packing Data: AC / DC (+)

Size (mm)	Dia x Length	5x450	4x450	3.15x450	2.5x350
Current Range (Amps)		190-250	140-200	90-140	70-100
Qty (Pcs/Carton)		20	30	45	80

Precautions :

1. Restrict the heat input, use short arc and stringer bead.
2. Re-dry the electrodes at 250°C for 1 hour, if expose to atmosphere.



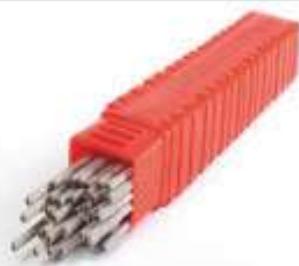


SUPRATHERME-H4R



Codification :

AWS SFA 5.1	E7018H4R
IS 814	EB5426H ₄ JX
EN ISO 2560-A	E 42 3 B 3 2 H5



Characteristics & Applications :

Supratherme-H4R is a moisture resistant hydrogen controlled basic coated electrode for producing tough and ductile weld of radiographic quality in boilers, pressure vessels, medium carbon steels, cast steel and problematic steels. The weld metal is clean and has low level of impurities, thus having unique properties. Some typical applications include maintenance welding of all types of C-Mn steels, heavy tensile steels, heavy structures, plants & equipments subjected to static or dynamic loading. Typical Applications Include: Coaches, Wagons, Penstocks, Boilers & Pressure vessels, Earth moving machines etc.

Typical Chemical Composition Of All Weld Metal (%) :

Element	C	Mn	Si	S	P
Typical	0.065	1.00	0.40	0.019	0.020

Typical Mechanical Properties Of All Weld Metal :

Properties	UTS(MPa)	YS(MPa)	%El (L=5d)	CVN Impact Strength (J)
				- 30°C
Typical	540	460	29	70

Diffusible Hydrogen Content: 4 ml / 100 gms of weld metal Max.

Moisture As Exposed (80% RH, 27°C For 9 Hrs): 0.40 Max.

Advantage: Electrodes are Vacuum packed, no need of drying and can be used straight on the job.

Welding Positions :



Current And Packing Data: AC / DC (+)

Size (mm)	Dia x Length	5x450	4x450	3.15x450	2.5x350
Current Range (Amps)	200-280	150-180	100-135	80-100	
Qty (Pcs/Carton)	20	30	45	80	

Approvals : BV, CE

Precautions :

1. Restrict the heat input, use short arc and stringer bead.
2. Re-dry the electrodes at 250°C for 1 hour, if expose to atmosphere.



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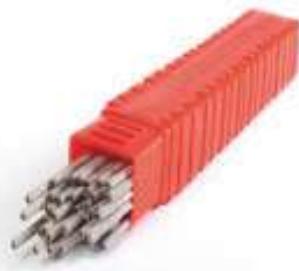
SUPRATHERME-P2



Codification :

AWS SFA 5.5

E8018-P2



Characteristics & Applications :

Supratherme-P2 is designed primarily for the welding of the hot, fill, and cap passes in high strength pipe butt joints in the vertical position, in upward progression. The low hydrogen nature of the covering of these electrodes makes them especially suited for joining crack-sensitive high strength pipe. Typical applications of these electrodes are the welding of API 5L pipe steels up to and including Grade X80, along with many other high strength medium and high carbon, and low-alloy steels.

Typical Chemical Composition Of All Weld Metal (%) :

Element	C	Mn	Si	S	P	Cr	Ni	Mo	V
Typical	0.07	1.30	0.40	0.018	0.018	0.10	0.60	0.20	0.02

Typical Mechanical Properties Of All Weld Metal :

Properties	UTS(MPa)	YS(MPa)	%El (L=4d)	CVN Impact Strength (J)
				- 30°C
Typical	580	500	21.0	45

Welding Positions :



Current And Packing Data: AC / DC (+)

Size (mm)	Dia x Length	5x450	4x350	3.15x350	2.5x350
Current Range (Amps)		220-280	160-190	110-135	80-100
Qty (Pcs/Carton)		35	55	75	100

Precautions :

1. Re-dry the electrodes at 300°C for 01 hour, as per our standard recommended practice.
2. Use short arc and stringer bead.



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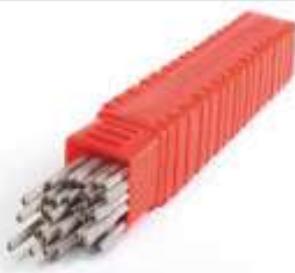


TENSAL



Codification :

AWS SFA 5.5	E9018-G
EN ISO 18275-B	E 62 18-G A H5



Characteristics & Applications :

A low hydrogen, iron powder type electrode for welding steels having tensile strength up to 680Mpa. Ideally suited for welding fine-grained steels, high tensile steels used in bridges, penstocks, tanks, etc. The weld metal possesses excellent toughness at sub-zero temperatures down to -50°C. Typical applications include welding of grain-refined steels, Q&T steels, HSLA steels, pressure vessels, structural fabrication, etc.

Typical Chemical Composition Of All Weld Metal (%) :

Element	C	Mn	Si	Ni	Mo	S	P
Typical	0.065	1.20	0.40	1.20	0.50	0.025	0.025

Typical Mechanical Properties Of All Weld Metal :

Properties	UTS(MPa)	YS(MPa)	%El (L=5d)	CVN Impact Strength (J)
				-51°C
Typical	673	584	22	40

Welding Positions :



Current And Packing Data : DC(+)

Size (mm)	Dia x Length	6.3x450	5x450	4x450	3.15x450	2.5x350
Current Range (Amps)		280-350	200-250	140-190	100-140	70-100
Qty (Pcs/Carton)		25	35	55	75	125

Approvals : CE, CIB-MP, PDIL

Precautions :

1. Ensure the electrodes are dry. Re-dry the electrodes at 300°C for 2 hours.
2. When welding grain refined and Q&T steels, control the heat input by using: (a) Stringer bead. (b) Control over preheat and interpass temperature. (c) Short arc.





TENSAL-H4R



Codification :

AWS SFA 5.5

E9018-G H4R



Characteristics & Applications :

Tensal-H4R is basic coated, extra low hydrogen, moisture resistance type electrode for welding high strength steels. It is suited for welding steels having tensile strength up to 690 MPa. The weld metal possesses excellent toughness at sub-zero temperatures down to -50°C. Typical applications include welding of grain refined steels, Q&T steels, HSLA steels, pressure vessels, structural fabrication, bridges, penstocks, tanks, etc.

Typical Chemical Composition Of All Weld Metal (%) :

Element	C	Mn	Si	S	P	Ni	Mo
Typical	0.06	1.20	0.40	0.020	0.021	0.80	0.50

Typical Mechanical Properties Of All Weld Metal :

Properties	UTS(MPa)	YS(MPa)	%El (L=4d)	CVN Impact Strength (J)
				- 50°C
Typical	650	580	22	40

Moisture

- As Conditioned : 0.15% Max.
- As Exposed : 0.40% Max. (27°C and 80% Relative Humidity for 9 Hours).

Diffusible Hydrogen Content: 4 ml/100 gms of weld metal Max.

Welding Positions :



Current And Packing Data: DC(+)

Size (mm)	Dia x Length	5x450	4x450	3.15x450	2.5x350
Current Range (Amps)		200-250	140-190	100-140	70-100
Qty (Pcs/Carton)		20	30	45	90

Advantage : Electrodes are Vacuum packed, no need of drying and can be used straight on the job.

Precautions :

- Use short arc and stringer bead.
- Re-dry the electrodes at 250°C for 1 hour, if expose to atmosphere.





TENSAL(MOD)



Codification :

AWS SFA 5.5

E9018-G



Characteristics & Applications :

Tensal(Mod) is a low hydrogen type electrodes depositing a high strength and tough weld metal. The electrode possesses excellent operating characteristics and is suitable for welding in all positions. The weld metal possesses high strength together with good notch toughness even at sub-zero temperatures down to -50°C. Ideally suited for welding fine-grained steels, high strength steels. Q&T steels used in the fabrication of structures, bridges, penstocks, earth moving equipments, etc.

Typical Chemical Composition Of All Weld Metal (%) :

Element	C	Mn	Si	P	S	Cr	Ni	Mo	Cu	Co
Typical	0.05	1.00	0.20	0.012	0.010	0.20	1.80	0.25	0.03	0.02
	Max	1.80	0.60	Max	Max	Max	Max	0.65	Max	Max

Typical Mechanical Properties Of All Weld Metal :

Properties	UTS(MPa)	YS(MPa)	%El (L=4d)	CVN Impact Strength (J)	
				- 50°C	
Typical	620	530	17 Min	27 Min	

Welding Positions :



Current And Packing Data: DC(+)

Size (mm)	Dia x Length	5x450	4x350	3.15x350	2.5x350
Current Range (Amps)		200-250	140-180	100-140	70-100
Qty (Pcs/Carton)		35	55	75	100

Precautions :

1. Ensure the electrodes are dry. Re-dry the electrodes at 300°C for 01 hour.
2. Use short arc, low current and stringer beads.



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TENSAL-MH



Codification :

AWS SFA 5.5	E9018-M
EN ISO 18275-B	E 62 18-N3M1 A H5



Characteristics & Applications :

Extra low hydrogen type electrodes depositing a high strength weld metal. Ideally suited for welding fine-grained steels, high strength steels, Q&T steels used in the fabrication of structures, bridges, penstocks and other components.

Typical Chemical Composition Of All Weld Metal (%) :

Element	C	Mn	Si	Ni	Mo	S	P
Typical	0.06	1.20	0.35	1.60	0.30	0.018	0.018

Typical Mechanical Properties Of All Weld Metal :

Properties	UTS(MPa)	YS(MPa)	%El (L=5d)	CVN Impact Strength (J)
				- 50°C
Typical	644	554	26	50

Welding Positions :



Current And Packing Data : DC(+)

Size (mm)	Dia x Length	6.3x450	5x450	4x450	3.15x450	2.5x350
Current Range (Amps)	280-350	200-250	140-190	100-140	80-100	
Qty (Pcs/Carton)	25	35	55	75	125	

Approvals : CE, CIB-MP

Precautions :

1. During welding keep the heat input to a minimum.
2. Ensure the electrodes are dry. Re-dry the electrode at 400°C for 01 hour.





TENSAL-MH(R)



Codification :

AWS SFA 5.5

E9018M H4R



Characteristics & Applications :

Tensal-MH(R) is hydrogen controlled, basic coated, moisture resistant electrode, depositing a high strength weld metal. The electrode possesses excellent operating characteristics and is suitable for welding in all positions. The extra low hydrogen content reduces susceptibility from hydrogen induced cracking. The weld metal possesses high strength together with good notch toughness. Ideally suited for welding fine-grained steels, high strength steels. Q&T steels used in the fabrication of structures, bridges, penstocks and other components.

Typical Chemical Composition Of All Weld Metal (%) :

Element	C	Mn	Si	P	S	Ni	Mo
Typical	0.06	1.30	0.35	0.018	0.018	1.70	0.30

Typical Mechanical Properties Of All Weld Metal :

Properties	UTS(MPa)	YS(MPa)	%El (L=4d)	CVN Impact Strength (J)
				- 50°C
Typical	650	560	26	75

Diffusible Hydrogen Content : 4 ml / 100 gms of weld metal Max.

Moisture As Conditioned : 0.15 Max.

Moisture As Exposed (80% RH, 27°C For 9 Hrs) : 0.40 Max.

Advantage : Electrodes are Vacuum packed, no need of drying and can be used straight on the job.

Welding Positions :



Current And Packing Data: DC(+)

Size (mm)	Dia x Length	6.3x450	5x450	4x450	3.15x450	2.5x350
Current Range (Amps)		280-350	200-250	140-190	100-140	80-100
Qty (Pcs/Carton)		15	20	30	45	80

Precautions :

1. Restrict the heat input, use short arc and stringer bead.
2. Re-dry the electrodes at 250°C for 1 hour, if expose to atmosphere.



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TENSAL(SPL)



Codification :

AWS SFA 5.5	E10018-D2
EN ISO 18275-B	E 69 18-4 M2 P H5



Characteristics & Applications :

A basic coated low hydrogen iron powder type electrode for welding high tensile steels. The weld metal is of radiographic quality. Ideally suited for welding high tensile steels, Q&T steels, castings, etc. with UTS range of 711Mpa. The weld metal possesses high strength combined with excellent toughness at sub-zero temperatures.

Typical Chemical Composition Of All Weld Metal (%) :

Element	C	Mn	Si	Mo	Ni	S	P
Typical	0.06	1.85	0.45	0.40	0.30	0.018	0.018

Typical Mechanical Properties Of All Weld Metal :

(PWHT: 620°C for 1 HR)

Properties	UTS(MPa)	YS(MPa)	%El (L=5d)	CVN Impact Strength (J)	
				- 50°C	
Typical	711	653	22	30	

Welding Positions :



Current And Packing Data : DC(+)

Size (mm)	Dia x Length	6.3x450	5x450	4x450	3.15x450	2.5x350
Current Range (Amps)		280-350	200-250	140-190	100-140	70-100
Qty (Pcs/Carton)		25	35	55	75	125

Approvals : CE

Precautions :

1. Ensure the electrodes are dry. Re-dry the electrodes at 300°C for 2 hours.
2. When welding grain refined and Q&T steels, control the heat input by using:
(a) Stringer bead. (b) Control over preheat and interpass temperature. (c) Short arc.





TENSAL-SPL(R)



Codification :

AWS SFA 5.5

E10018-D2H4R



Characteristics & Applications :

Basic coated, low hydrogen, moisture resistant electrode for welding high tensile steels. The weld metal is of radiographic quality. The electrode possesses excellent operating characteristics and is suitable for welding in all positions. The extra low hydrogen content reduces susceptibility from hydrogen induced cracking. The weld metal possesses high strength together with good notch toughness. Ideally suited for welding fine-grained steels, high strength steels. Q&T steels, castings used in the fabrication of structures, bridges, penstocks and other components.

Typical Chemical Composition Of All Weld Metal (%) :

Element	C	Mn	Si	P	S	Ni	Mo
Typical	0.06	1.85	0.45	0.018	0.018	0.30	0.40

Typical Mechanical Properties Of All Weld Metal :

(PWHT: 620°C for 1 HR)

Properties	UTS(MPa)	YS(MPa)	%El (L=4d)	CVN Impact Strength (J)
				- 51°C
Typical	710	650	22	30

Advantage : Electrodes are Vacuum packed, no need of drying and can be used straight on the job.

Diffusible Hydrogen Content : 4 ml/100 gms of weld metal Max.

Moisture As Conditioned: 0.15 % Max.

Moisture As Exposed (80% RH, 27°C & 9 Hrs) : 0.40 % Max.

Welding Positions :



Current And Packing Data: DC(+)

Size (mm)	Dia x Length	6.3x450	5x450	4x450	3.15x450	2.5x350
Current Range (Amps)	280-350	200-250	140-190	100-140	70-100	
Qty (Pcs/Carton)	25	35	55	75	125	

Precautions :

- During welding keep the heat input to a minimum.



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ULTRATENSAL(SPL)H4R



Codification :

AWS SFA 5.5

E11016-G H4R



Characteristics & Applications :

Ultratensal(SPL)H4R is a moisture resistant hydrogen-controlled type electrode ideally suited for welding high strength steels, fine-grained steels, HSLA, Q&T steels, etc. The weld metal possesses high strength combined with good toughness properties. Ideal for welding high strength steels used in earth moving industry and Hydral application etc.

Typical Chemical Composition Of All Weld Metal (%) :

Element	C	Mn	Si	Mo	Ni	Cr	S	P
Typical	0.06	1.35	0.25	0.50	2.20	0.20	0.018	0.018

Typical Mechanical Properties Of All Weld Metal :

(PWHT: 620°C for 1 HR)

Properties	UTS(MPa)	YS(MPa)	%El (L=4d)	CVN Impact Strength (J)	
				- 40°C	
Typical	782	683	19		30

Diffusible Hydrogen content : 4ml/100 gm of weld metal.

Welding Positions :



Current And Packing Data: DC(+)

Size (mm)	Dia x Length	5x450	4x450	3.15x450	2.5x350
Current Range (Amps)		200-260	140-190	100-150	70-100
Qty (Pcs/Carton)		20	30	45	80

Precautions :

1. Ensure the electrodes are dry. Re-dry the electrodes at 250-300°C for 1 hour.
2. Use short arc and minimize heat input during welding.

Advantages :

Electrodes are vacuum packed no need of redrying & can be used straight on the job.

Moisture as Conditioned: 0.15Max.

Moisture as Exposed: 0.4Max.



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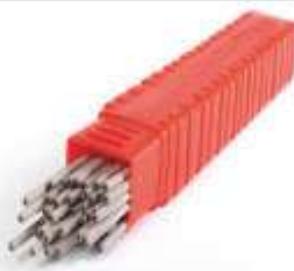
ULTRATENSAL



Codification :

AWS SFA 5.5

E11018-G



Characteristics & Applications :

ULTRATENSAL electrode is low hydrogen, iron powder type electrode for welding high strength steels. The weld deposits of this electrode have high strength with excellent toughness. It is ideally suited for welding high tensile steels, grain refined Q&T steels such as USS-T1, SA 517 grades and their equivalents, Fabrication of penstocks, heavy structures, earth moving equipments, etc.

Typical Chemical Composition Of All Weld Metal (%) :

Element	C	Mn	Si	S	P	Ni	Cr	Mo
Typical	0.06	1.50	0.40	0.018	0.020	2.30	0.25	0.42

Typical Mechanical Properties Of All Weld Metal :

(PWHT: 620°C for 1 HR)

Properties	UTS(MPa)	YS(MPa)	%El (L=4d)	CVN Impact Strength (J)	
				- 50°C	
Typical	775	695	20		40

Welding Positions :



Current And Packing Data: DC(+)

Size (mm)	Dia x Length	6.3x450	5x450	4x450	3.15x450	2.5x350
Current Range (Amps)		270-320	180-240	140-180	90-140	50-90
Qty (Pcs/Carton)		25	35	55	75	125

Precautions :

1. Re-dry the electrodes at 300-350 C for 01 hour.
2. Use low current, short arc and stringer beads.



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ULTRATENSAL-1000

Established 1969
D&H
 sécheron
 Complete Welding Support



Characteristics & Applications :

Ultratensal-1000 is a basic coated electrode. The weld metal displays good crack resistance and produces sound weld metal possessing excellent strength combined with good impact properties at sub-zero temperature. Welds are of radiographic quality. It is suitable for joining high strength, low alloy or micro alloyed steels to themselves or to lower strength steels, including carbon steels. Ideally suited for welding earth moving equipments and other heavy equipments.

Typical Chemical Composition Of All Weld Metal (%) :

Element	C	Mn	Si	Cr	Ni	Mo	S	P	V
Range	0.04-0.10	1.6-2.0	0.5Max	0.7-1.2	2.0-3.0	0.70-1.10	0.02 Max	0.02 Max	0.08 Max
Typical	0.08	1.8	0.40	1.0	2.5	0.90	0.015	0.015	0.06

Typical Mechanical Properties Of All Weld Metal :

Properties	UTS(MPa)	YS(MPa)	%El (L=4d)	CVN Impact Strength (J)	
				RT	- 51°C
Range	1000 Min	930 Min	15 Min	70 Min	27 Min
Typical	1100	960	18	100	50

Welding Positions :



Current And Packing Data: DC(+)

Size (mm)	Dia x Length	5x450	4x450	3.15x450	2.5x350
Current Range (Amps)		200-260	150-200	100-150	80-110
Qty (Pcs/Carton)		35	55	75	125

Precautions :

1. Ensure the electrodes are dry. Re-dry the electrodes at 300°C for 2 hours.
2. Use short arc and stringer beads.
3. Use a carefully formulated welding procedure with preheat and post weld heat treatment.



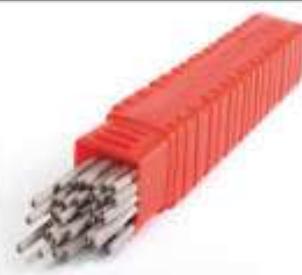


ULTRATENSAL-1050



Codification :

AWS SFA 5.5 E14018M-H4



Characteristics & Applications :

Ultratensal-1050 is a basic coated and very low hydrogen electrode producing high strength weld metals. The weld metal displays good crack resistance and produces sound weld metal possessing excellent strength combined with good impact properties at sub-zero temperature. Welds are of radiographic quality. It is suitable for joining high strength, low alloy or micro alloyed steels to themselves or to lower strength steels, including carbon steels. Ideally suited for welding earth moving equipments and other heavy equipments.

Typical Chemical Composition Of All Weld Metal (%) :

Element	C	Mn	Si	Cr	Ni	Mo	S	P	V
Range	0.04-0.10	1.0-2.0	0.5Max	0.5-1.2	2.5-5.0	0.8-1.5	0.12 Max	0.010 Max	0.08 Max
Typical	0.08	1.3	0.30	0.7	3.7	1.2	0.010	0.008	0.06

Typical Mechanical Properties Of All Weld Metal :

Properties	UTS(MPa)	YS(MPa)	%El (L=5d)	CVN Impact Strength (J)	
				- 40°C	
Range	1000 Min	950 Min	15.0 Min	27 Min	
Typical	1050	980	18	50	

Diffusible Hydrogen Content : 4 ml/100 gms of weld metal Max.

Welding Positions :



Current And Packing Data: DC(+)

Size (mm)	Dia x Length	5x450	4x450	3.15x450	2.5x350
Current Range (Amps)		200-260	150-200	100-150	80-110
Qty (Pcs/Carton)		35	55	75	125

Precautions :

1. Ensure the electrodes are dry. Re-dry the electrodes at 350°C for 2 hours.
2. Use short arc and stringer beads.



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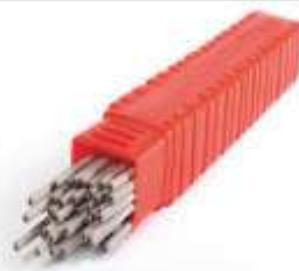
ULTRATENSAL-MH(H4R)

Established 1969
D&H
sécheron
Complete Welding Support

Codification :

AWS SFA 5.5

E11018M- H4R



Characteristics & Applications :

Ultratensal-MH(H4R) is moisture resistant hydrogen controlled basic coated electrode. The weld metal displays excellent crack resistance and produces sound weld metal possessing excellent strength combined with good impact properties at sub zero temperature. The electrode possesses excellent operating characteristics and is suitable for welding in all positions. The extra low hydrogen content reduces susceptibility from hydrogen induced cracking. It is suitable for welding high strength Q&T steels like WEL-TEN 80, SA 517 grades and their equivalents. Ideally suited for welding highly restrained joints in high strength steels under site conditions with high relative humidity.

Typical Chemical Composition Of All Weld Metal (%) :

Element	C	Mn	Si	S	P	Cr	Ni	Mo	V
Typical	0.06	1.40	0.30	0.012	0.015	0.25	2.10	0.40	0.03

Typical Mechanical Properties Of All Weld Metal :

Properties	UTS(MPa)	YS(MPa)	%El (L=4d)	CVN Impact Strength (J)
				- 50°C
Typical	790	700	22	40

Diffusible Hydrogen Content : 4 ml / 100 gms of weld metal Max.

Moisture As Conditioned: 0.15 Max.

Moisture As Exposed (80% RH, 27°C For 9 Hrs) : 0.40 Max.

Advantage : Electrodes are Vacuum packed, no need of drying and can be used straight on the job.

Welding Positions :



Current And Packing Data: DC(+)

Size (mm)	Dia x Length	5x450	4x450	3.15x450	2.5x350
Current Range (Amps)		180-240	140-180	90-140	50-90
Weight/Carton (kgs)		2	2	2	2

Precautions :

1. Re-dry the electrodes at 250°C for 01 hour, if expose to atmosphere.
2. Restrict the heat input, use short arc and stringer bead.



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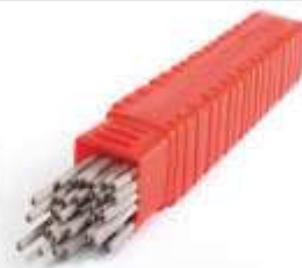
ULTRATHERME-H



Codification :

AWS SFA 5.5

E10016-G



Characteristics & Applications :

Basic coated, extra low hydrogen electrode ideally suited for welding high strength steels, Q&T steels. The weld metal is of radiographic quality and possesses excellent strength combined with good toughness. Ideal for welding high strength steels under the site conditions having high relative humidity and higher joint restraints, as the extra low hydrogen levels ensure freedom from hydrogen induced cracking.

Typical Chemical Composition Of All Weld Metal (%) :

Element	C	Mn	Si	S	P	Cr	Ni	Mo	V	Cu
Typical	0.06	1.20	0.30	0.020	0.022	0.25	1.90	0.35	0.05	0.12

Typical Mechanical Properties Of All Weld Metal :

(PWHT: 690°C FOR 1 HR)

Properties	UTS(MPa)	YS(MPa)	%El (L=4d)	CVN Impact Strength (J)	
				- 50°C	
Typical	740	650	19		50

Diffusible Hydrogen Content : 3 ml/100 gms of weld metal Max.

Moisture Content : 0.15 % Max.

Welding Positions :



Current And Packing Data: DC(+)

Size (mm)	Dia x Length	5x350	4x350	3.15x350	2.5x350
Current Range (Amps)		190-260	140-190	100-150	70-100
Weight/Carton (kgs)		2.5	2.5	2.5	2.5

Approvals : Indian Navy

Precautions :

1. Ensure the electrodes are dry. Re-dry the electrode at 400°C for 01 hour.
2. Keep the minimum heat input during welding.
3. Controlling preheat and inter pass temperatures between 120-150°C.
4. Use stringer beads and minimize weaving.



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ULTRATENSAL-Cu



Codification :

AWS SFA 5.5

E9018-G



Characteristics & Applications :

Basic coated extra low hydrogen electrode. The weld metal displays excellent crack resistance and produces sound weld metal possessing excellent strength combined with good impact properties at sub-zero temperature. Ideally suited for welding of high strength Q&T steels, like WEL TEN 80, SA 517 grades, WB36 pipes, and their equivalent grades. Welding highly restrained joints in high strength steels under site conditions with relative humidity since the extra low hydrogen content of the weld metal helps preventing hydrogen induced cracking.

Typical Chemical Composition Of All Weld Metal (%) :

Element	C	Mn	Si	Cu	Ni	Mo	Cr	Nb	Al	S	P
Typical	0.08	1.0	0.4	0.6	1.2	0.4	0.2	0.02	0.02	0.014	0.018

Typical Mechanical Properties Of All Weld Metal :

Properties	UTS(MPa)	YS(MPa)	%El (L=4d)
Typical	680	590	22

Welding Positions :



Current And Packing Data: AC / DC(+)

Size (mm)	Dia x Length	5x350	4x350	3.15x350	2.5x350
Current Range (Amps)	180-240	140-180	90-140	50-90	
Weight/Carton (kgs)	2.5	2.5	2.5	2.5	

Approvals : Adani Infra, CIB-MP

Precautions :

1. Ensure the electrodes are dry. Re-dry the electrodes at 400°C for 01 hour.
2. Ensure cleanliness of the surface to be welded.
3. Use short arc and minimum heat input. The preheat and Inter pass temperature shall never be more than 150°C



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ULTRATENSAL-MC



Codification :

AWS SFA 5.5	E10018M
IS 1395	E 68 B M2 2 6 Fe



Characteristics & Applications :

Ultratensal-MC is a basic coated extra low hydrogen electrode. Weld metal displays excellent crack resistance and produces sound weld metal possessing excellent strength combined with good impact properties at sub zero temperature. It is ideally suited for welding high strength Q&T steels like WEL-TEN 80, WEL-TEN 690 RE-A, WEL-TEN 690 RE-B, RDE-S-70, SA 517 grades and their equivalents. The electrodes are ideally suited for welding highly restrained joints in high strength steels under site conditions with high relative humidity since the extra low hydrogen content of the weld metal helps preventing hydrogen induced cracking.

Typical Chemical Composition Of All Weld Metal (%) :

Element	C	Mn	Si	S	P	Cr	Ni	Mo	V
Typical	0.06	1.35	0.45	0.020	0.020	0.25	2.0	0.30	0.01

Typical Mechanical Properties Of All Weld Metal :

Properties	UTS(MPa)	YS(MPa)	%El (L=4d)	CVN Impact Strength (J)	
				- 50°C	
Typical	790	680	22.0	50	

Diffusible Hydrogen Content: 4.0 ml/100 gms of weld metal Max.

Welding Positions :



Current And Packing Data : DC(+)

Size (mm)	Dia x Length	5x450	4.0x450	3.15x450	2.5x350
Current Range (Amps)		180-240	140-180	90-140	50-90
Weight/Carton (kgs)		2	2	2	2

Precautions :

1. Ensure the electrodes are dry. Re-dry the electrodes at 400°C for 01 hour.
2. Use short arc and stringer bead.





ULTRATENSAL-MH

Established 1969
D&H
sécheron
Complete Welding Support

Codification :

AWS SFA 5.5	E11018M
EN ISO 18275-B	E 76 18 N4M2 A H5



Characteristics & Applications :

Basic coated, extra low hydrogen electrode ideally suited for welding high strength Q&T steels like Welten 80, SA517 grades and their equivalents. The weld metal has excellent crack resistance and displays high strength combined with good sub-zero impact strength. Ideal for welding high strength steels under site conditions having high relative humidity and higher joint restraints as the extra low hydrogen levels ensure freedom from hydrogen induced cracking.

Typical Chemical Composition Of All Weld Metal (%) :

Element	C	Mn	Si	Ni	Mo	Cr	S	P
Typical	0.06	1.35	0.36	2.10	0.40	0.25	0.015	0.015

Typical Mechanical Properties Of All Weld Metal :

Properties	UTS(MPa)	YS(MPa)	%El (L=5d)	CVN Impact Strength (J)	
				- 50°C	
Typical	782	693	21		40

Diffusible Hydrogen Content: 3ml/100gms of weld metal or less.

Welding Positions :



Current And Packing Data : DC(+)

Size (mm)	Dia x Length	6.3x450	5x350	4x350	3.15x350	2.5x350
Current Range (Amps)		270-320	180-240	140-180	90-140	50-90
Weight/Carton (kgs)		3	3	3	3	3

Approvals : BHEL, CE, Indian Navy

Precautions :

1. Ensure the electrodes are dry. Re-dry the electrodes at 400°C for 01 hour.
2. Keep the heat input during welding to a minimum by controlling the preheat and interpass temperatures between 120-150°C.
3. Use stringer bead and minimise weaving.



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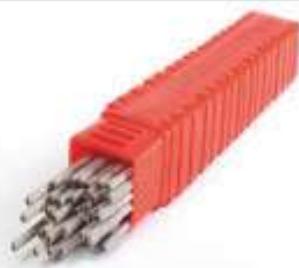


ULTRATHERME



Codification :

AWS SFA 5.5 E11018-G



Characteristics & Applications :

Ultratherme is a low hydrogen type electrode ideally suited for welding high strength steels, fine-grained steels, HSLA, Q&T steels, etc. The weld metal possesses high strength combined with good toughness properties. Ideal for welding high strength steels used in earth moving industry, etc.

Typical Chemical Composition Of All Weld Metal (%) :

Element	C	Mn	Si	Mo	Ni	Cr	S	P
Typical	0.06	1.4	0.25	0.50	2.20	0.20	0.018	0.018

Typical Mechanical Properties Of All Weld Metal :

Properties	UTS(MPa)	YS(MPa)	%El (L=4d)	CVN Impact Strength (J)
				- 40°C
Typical	782	683	19	30

Welding Positions :



Current And Packing Data: AC / DC(+)

Size (mm)	Dia x Length	6.3x450	5x450	4x450	3.15x450	2.5x350
Current Range (Amps)		280-350	200-260	140-190	100-150	70-100
Qty (Pcs/Carton)		25	35	55	75	125

Precautions :

1. Ensure the electrodes are dry. Re-dry the electrodes at 250-300°C for 01 hour.
2. Use short arc and minimise heat input during welding.





ULTRATHERME-H



Codification :

AWS SFA 5.5 E10016-G



Characteristics & Applications :

Basic coated, extra low hydrogen electrode ideally suited for welding high strength steels, Q&T steels. The weld metal is of radiographic quality and possesses excellent strength combined with good toughness. Ideal for welding high strength steels under the site conditions having high relative humidity and higher joint restraints, as the extra low hydrogen levels ensure freedom from hydrogen induced cracking.

Typical Chemical Composition Of All Weld Metal :

Element	C	Mn	Si	S	P	Cr	Ni	Mo	V	Cu
Typical	0.06	1.20	0.30	0.020	0.022	0.25	1.90	0.35	0.05	0.12

Typical Mechanical Properties Of All Weld Metal :

Properties	UTS(MPa)	YS(MPa)	%El (L=4d)	CVN Impact Strength (J)	
				- 50°C	
Typical	740	650	19.0		50

Diffusible Hydrogen Content : 3 ml/100gms of weld metal Max.

Moisture Content : 0.15 % Max.

Welding Positions :



Current And Packing Data : DC(+)

Size (mm)	Dia x Length	5x350	4x350	3.15x350	2.5x350
Current Range (Amps)	190-260	140-190	100-150	70-100	
Weight/Carton (kgs)	2.5	2.5	2.5	2.5	

Approvals : Indian Navy

Precautions :

1. Ensure the electrodes are dry. Re-dry the electrode at 400°C for 01 hour.
2. Keep the minimum heat input during welding.
3. Controlling preheat and inter pass temperatures between 120-150°C.
4. Use stringer beads and minimize weaving.





ULTRATHERME-M



Codification :

AWS SFA 5.5	E11018M
EN ISO 18275-B	E7618-N4M2 A H5



Characteristics & Applications :

Basic coated hydrogen control electrode with a stable and smooth arc that is easy to strike and restrike. Low spatter and good bead finish. Welds are of radiographic quality. The weld metal displays good crack resistance and produces sound weld metal possessing excellent strength combined with good impact properties at subzero temperature. It is ideally suited for welding high strength Q & T steels like WEL-TEN 80, SA 517 grades and their equivalents. The electrodes are ideally suited for welding restrained joints in high strength steels.

Typical Chemical Composition Of All Weld Metal (%) :

Element	C	Mn	Si	S	P	Cr	Ni	Mo
Typical	0.060	1.50	0.40	0.020	0.020	0.20	2.00	0.40

Typical Mechanical Properties Of All Weld Metal :

Properties	UTS(MPa)	YS(MPa)	%El (L=5d)	CVN Impact Strength (J)
				- 50°C
Typical	790	705	22	30

Welding Positions :



Current And Packing Data: DC(+)

Size (mm)	Dia x Length	5x450	4x450	3.15x450	2.5 x 350
Current Range (Amps)		180-240	140-180	90-140	50-90
Qty (Pcs/Carton)		35	55	75	125

Approvals : CE

Precautions :

1. Redry the electrodes at 300°C for 01 hour.
2. During welding the heat input should be kept to a minimum. Preheat and interpass temperature shall never be more than 120-150°C.
3. Use stringent beads and minimize weaving.





CNM(SPL)



Codification :

AWS SFA 5.5	E12018-G
EN ISO 18275-B	E 83 18-G A H5



Characteristics & Applications :

CNM(SPL) is a special formulated electrode to deposit a very high strength weld metal. The weld metal possesses high strength and toughness and is ideally suited for welding high strength steels.

Typical Chemical Composition Of All Weld Metal (%) :

Element	C	Mn	Si	Cr	Ni	Mo	S	P
Typical	0.07	1.0	0.35	1.0	2.2	0.95	0.025	0.025

Typical Mechanical Properties Of All Weld Metal :

Properties	UTS(MPa)	YS(MPa)	%El (L=5d)	CVN Impact Strength (J)	
				0°C	
Typical	970	861	16.0	50	

Welding Positions :



Current And Packing Data : DC(+)

Size (mm)	Dia x Length	6.3x450	5x450	4x450	3.15x450	2.5x350
Current Range (Amps)	270-320	200-250	150-190	100-140	60-90	
Qty (Pcs/Carton)	25	35	55	75	125	

Approvals : CE

Precautions :

1. Ensure the electrodes are dry. Re-dry the electrodes at 300°C for 2 hours.
2. Use short arc and stringer beads.
3. Use a carefully formulated welding procedure with preheat and post weld heat treatment.



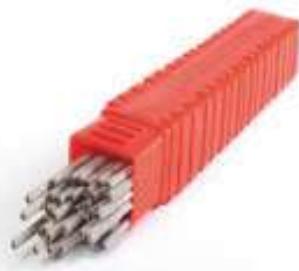


CNM(SPL)M



Codification :

AWS SFA 5.5	E12018M
EN ISO 18275-B	E 83 18 N4C2M2 A H5



Characteristics & Applications :

Basic coated electrode with a stable and smooth arc, easy to strike and restrike. Low spatter and good bead finish. Welds are of radiographic quality. The weld metal displays good crack resistance and produces sound weld metal possessing excellent strength combined with good impact properties at subzero temperature. It is suitable for joining many high strength, low alloy or micro alloyed steels to themselves or to lower strength steels, including carbon steels. Ideally suited for welding earth moving equipments and other heavy equipments.

Typical Chemical Composition Of All Weld Metal (%) :

Element	C	Mn	Si	Cr	Ni	Mo	S	P	V
Typical	0.07	1.6	0.35	1.0	2.2	0.40	0.012	0.020	0.03

Typical Mechanical Properties Of All Weld Metal :

Properties	UTS(MPa)	YS(MPa)	%El (L=5d)	CVN Impact Strength (J)	
				- 50°C	
Typical	901	792	20.0		40

Welding Positions :



Current And Packing Data : DC(+)

Size (mm)	Dia x Length	6.3x450	5x450	4x450	3.15x450	2.5x350
Current Range (Amps)		270-320	200-250	150-190	100-140	70-100
Qty (Pcs/Carton)		25	35	55	75	125

Approvals : CE

Precautions :

1. Ensure the electrodes are dry. Re-dry the electrodes at 300°C for 2 hours.
2. Use short arc and stringer beads.
3. Use a carefully formulated welding procedure with preheat and post weld heat treatment.

