



BHARATH HEAVY ELECTRICALS LIMITED
TIRUCHIRAPALLI-620 014
WELDING TECHNOLOGY CENTRE

Welding Consumable Purchase Instruction

Doc. Number:

WCPI – 009

Revision:

04

Date: 11/08/2007

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**PURCHASE INSTRUCTION FOR LOW ALLOY STEEL SUBMERGED ARC
WELDING WIRE TO ASME SEC.II.C, SFA-5.23MM EG.**

1.0 SCOPE:

- 1.1 This purchase instruction prescribes the requirements for Low Alloy Steel Bare Solid Wire for Submerged Arc Welding that conforms to ASME, SEC II.C, SFA- 5.23M Class EG

2.0 GENERAL:

The wire shall comply with the requirements called for in the Latest Edition and addenda (applicable on the date of issue of purchase order) of ASME Sec II.C, SFA- 5.23M EA4. All tests, acceptance criteria etc. referred in this document shall be in accordance with this. Additional requirements specified in this document are also to be complied.

- 2.2 The wire shall be supplied in sizes and quantity specified in the purchase order.

- 2.3 Every batch of wire shall be inspected & test certificates shall be countersigned by Inspecting Authority approved by IBR for the country of origin (Latest)

3.0 CHEMICAL COMPOSITION:

The chemical composition of the wire shall be as follows.

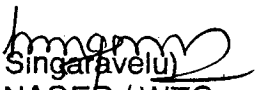
Carbon	0.07-0.12 %	Molybdenum	0.45 – 0.60%
Manganese	1.25-1.80 %	Copper	0.30 % Max
Silicon	0.05 % Max	Nickel	0.25 %Max
Sulphur	0.025 % Max.	Chromium	0.15 %Max
Phosphorus	0.025 % Max		

4.0 FORM, SIZE, AND FINISH:

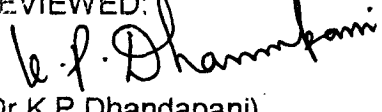
4.1 FORM :

The Wire shall be appropriately layer wound in coils with hardboard liner support of dimensions and weight as given below.

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- a) Inner Diameter of Liner : 305 + 10 / - 0 mm
- b) Width of Coil (maximum) : 100.00 mm
- c) Net Weight of Coil : 25/30 Kg.

The wire in coil form along with liner shall be so designed & constructed to prevent distortion of the wire coil / unwinding of the wire/ contamination of the wire during transportation, storage and use under normal conditions.

4.2 SIZE:

The Wire shall be supplied in Diameter 3.20, 4.00 or 4.80 mm as specified in the Purchase Order. The tolerance on diameter shall be ± 0.06 mm.

4.3 FINISH AND UNIFORMITY:

The wire shall be copper coated by an appropriate process that results in uniform coating thickness without any flaking providing a bright and glossy finish that ensures prevention from rusting in long duration storage.

The Wire surface shall be entirely free from slivers, depressions, scratches, scales, seams, laps, drawing compounds or any other foreign matter that would adversely affect the welding characteristics or properties of Weld metal.

The wire shall be of a single continuous length made from a single heat/melt without any splices.

5.0 WINDING, TEMPER, CAST, & HELIX:

The Wire shall be layer wound in coils so that kinks, waves, sharp bends, overlapping or wedging are not encountered leaving it free to unwind without any restriction.

The outside end of the wire (The end with which welding is to begin) shall be identified so it can be located readily. This end shall be fastened to avoid unwinding.

The inner end of the wire shall be affixed to the hardboard liner so as to ensure unrestricted layer by layer unwinding of the wire in the wire feed sprocket.

The temper, cast and helix of wire on coils shall ensure unrestricted layer by layer unwinding and easy straightening in the wire feed system and shall render itself to accurate tracking to the Weld groove as it issues out of the current contact tube.



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5.0 IDENTIFICATION:

5.1 Adhesive labels containing following product information shall be securely affixed in a prominent location on the hardboard liner of the coil. The Label shall be so affixed that it stays in place during usage of the coil under normal conditions.

- a) Specification & Classification Designation.
- b) Brand Name.
- c) Batch/Lot Number.
- d) Size & Net Weight.

6.0 PACKAGING:

6.1 The Wire Coils completely devoid of moisture or any other foreign material shall be adequately sealed in suitable cartons to ensure against any deterioration in the Wire quality during transportation by sea or long duration storage.

6.2 The cartons shall have product information as required in Clause 5 above legibly marked so as to be visible from the outside of each carton.

6.3 The Appropriate precautionary information as specified in ASME Section II.C.SFA-5.23M shall be prominently displayed in legible print on all individual cartons.

6.4 The cartons shall be packed in wooden crates lined with waterproof material so as to ensure against damage during transportation by sea and storage under normal conditions. Net Weight of each crate shall not exceed 1000 Kg

7.0 TESTING AND CERTIFICATION:

7.1 Each consignment of Wire Coils rods supplied shall preferably be from one batch only.

7.2 Batch/Lot classification shall be Class S1 as per section 5.0 of SFA 5.01 filler Metal Procurement Guidelines of ASME Sec.II.C.

7.3 The level of testing shall be Schedule "I" of Section 6.0 of SFA 5.01 Filler Metal Procurement Guidelines of ASME Sec II.C.

7.4 Three copies of Original Test certificates in English countersigned by Inspecting Authority (Latest) approved by IBR for the country of origin giving details of following tests done for compliance to this Purchase Instruction and ASME Sec.II.C, SFA-5.23M EG shall be sent.

7.5 The testing authority shall certify that supplies made against the batch conforms to the requirements of the latest Edition and addenda (Applicable on the date of issue of Purchase order) of ASME Sec.II.C, SFA-5.23M EG

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