



# CORPORATE STANDARD

AA7710103 Rev. No.01

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# CARBON STEEL ELECTRODES FOR SHIELDED METAL ARC WELDING CLASS E6013

#### 1.0 SCOPE

This standard covers Carbon Steel arc welding electrodes of Class E6013 to SFA 5.1 of ASME Section-II Part-C.

#### 2.0 APPLICATION

These electrodes are used for mild and low Carbon Steels of non-radiographic application.

# 3.0 COMPLIANCE TO STANDARD

This standard is made to the Class E6013 of SFA 5.1 of ASME Section-II C.

# 4.0 CHEMICAL COMPOSITION

As per SFA 5.1 of ASME Section-II C.

# 5.0 MECHANICAL PROPERTIES

As per SFA 5.1 of ASME Section-II C.

#### 6.0 FILLET WELD TEST

As per SFA 5.1 of ASME Section-II C.

#### 7.0 METHODS OF MANUFACTURE

The welding consumable may be manufactured by any method which will yield the requirements of this standard.

# 8.0 STANDARD FORMS, TOLERANCES AND FINISH

- **8.1** The standard size shall be 2.0, 2.5, 3.15, 4.0, 5.0, 6.3 mm diameter.
- 8.2 The tolerance on the diameter of core wire shall be as per SFA 5.1 of ASME Section-II C.

#### 8.3 Core Wire & Covering

The electrodes shall meet the requirements of clause 3.2 of SFA 5.02.

#### 8.4 Exposed Core

The electrodes shall meet the requirements of clause 3.3 of SFA 5.02.

Revisions: Clause 19.4 of MOM of MRC-W			APPROVED: INTERPLANT MATERIAL RATIONALISATION COMMITTEE – MRC(W)		
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# 9.0 IDENTIFICATION

All electrodes shall be identified as per SFA 5.1.

# 10.0 TEST REQUIREMENTS

Test requirements as per SFA 5.1 of ASME Section-II C. Batch/Lot classification shall be Class C1 and level of testing shall be Schedule 4 or I as per SFA 5.01.

#### 11.0 TEST CERTIFICATES

The supplier shall submit 3 copies of original test certificates in English giving the following information.

- 1. BHEL Purchase Order No.
- 2. Supplier's Name, Brand Name and Size
- 3. BHEL Standard No: AA7710103 and AWS class
- 4. Batch Number & Quantity
- 5. Test results as per clause 10.0 of this standard

#### 12.0 ACCEPTANCE

Acceptance shall be based on as per the requirement of this standard. Additional requirements if any shall be as agreed between supplier and purchaser.

#### 13.0 PACKING

The electrodes shall be suitably packed to ensure against damage during shipment or storage under normal condition.

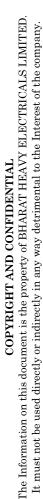
# 14.0 MARKING

Each carton shall have the following information printed on them.

- 1. Brand name
- 2. AWS specification and class
- 3. Size
- 4. Batch No. and Date of manufacture
- 5. Quantity and Net weight
- 6. Electrode drying requirements
- **15.0** For rationalized sizes and material codes, refer CMCC of Welding Consumables (for BHEL reference only)

# **16.0 REFERRED STANDARDS** (Latest Publications including Amendments)

1) ASME Section-II C





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# CARBON STEEL ELECTRODES FOR SHIELDED METAL ARC WELDING CLASS E7018

# 1.0 SCOPE

This standard covers low hydrogen type Carbon Steel arc welding electrodes of Class E7018 to SFA 5.1 of ASME Section-II Part C.

#### 2.0 APPLICATION

These electrodes are used for welding of low and medium carbon steel pressure vessel components, attachments to pressure parts, radiographic quality.

# 3.0 COMPLIANCE TO STANDARD

This standard is made to the Class E7018 of SFA 5.1 of ASME Section-II C.

# 4.0 CHEMICAL COMPOSITION

As per SFA 5.1 of ASME Section-II C.

#### 5.0 MECHANICAL PROPERTIES

As per SFA 5.1 of ASME Section-II C.

#### 6.0 FILLET TEST

As per SFA 5.1 of ASME Section-II C.

#### 7.0 RADIOGRAPHIC TEST

As per SFA 5.1 of ASME Section-II C.

# 8.0 METHODS OF MANUFACTURE

The welding consumable may be manufactured by any method which will yield the requirements of this standard.

# 9.0 STANDARD FORMS, TOLERANCES AND FINISH

- **9.1** The standard size shall be of dia 2.0, 2.5, 3.15, 4.0, 5.0, 6.3 mm.
- 9.2 The tolerance on the diameter of core wire shall be as per SFA 5.1 of ASME Section-II C.

# 9.3 Core Wire & Covering

The electrodes shall meet the requirements of clause 3.2 of SFA 5.02.

Revisions: Clause 19.4 of MOM of MRC-W			APPROVED: INTERPLANT MATERIAL RATIONALISATION COMMITTEE – MRC(W)		
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# 9.4 Exposed Core

The electrodes shall meet the requirements of clause 3.3 of SFA 5.02.

# 10.0 IDENTIFICATION

All electrodes shall be identified as per SFA 5.1.

# 11.0 TEST REQUIREMENTS

Test requirements as per SFA 5.1 of ASME Section-II C. Batch/Lot classification shall be Class C1 and level of testing shall be Schedule 4 or I as per SFA 5.01.

#### 12.0 TEST CERTIFICATES

The supplier shall submit 3 copies of original test certificates in English giving the following information

- 1. BHEL Purchase Order No.
- 2. Supplier's Name, Brand Name and Size
- 3. BHEL Standard No: AA7710112 and AWS class
- 4. Batch Number & Quantity
- 5. Test results as per clause 11.0 of this standard

#### 13.0 ACCEPTANCE

Acceptance shall be based on as per the requirement of this standard. Additional requirements if any shall be as agreed between supplier and purchaser.

# 14.0 PACKING

The electrodes shall be suitably packed to ensure against damage during shipment or storage under normal condition.

#### 15.0 MARKING

Each carton shall have the following information printed on them.

- 1. Brand name
- 2. AWS Specification and Class
- 3. Size
- 4. Batch No. and Date of manufacture
- 5. Quantity and Net weight
- 6. Electrode drying requirements
- **16.0** For rationalized sizes and material codes, refer CMCC of Welding Consumables (for BHEL reference only)

# 17.0 **REFERRED STANDARDS** (Latest Publications including Amendments)

1) ASME Section-II C