

### Technical Specifications

SL. No	Description and Technical Specification of the item	QTY	UNIT	Delivery
1	E 7018-1 SMAW ELECTRODE DIA 4.00 MM ASME.SEC.II.C, SFA-5.1 E7018-1 SMAW ELECTRODE AS PER WCPI-207/09. DIA-4.0 mm X 450 mm LONG.	3,00,000.00	NO	60 DAYS
2	E 7018-1 SMAW ELECTRODE DIA 5.00 MM ASME.SEC.II.C, SFA-5.1 E7018-1 SMAW ELECTRODE AS PER WCPI-207/09. Diameter 5.00 mm X 450 mm LONG.	2,00,000.00	NO	60 DAYS



**WELDING CONSUMABLE PURCHASE INSTRUCTION (WCPI)**  
**FOR ASME SEC.II.C, SFA-5.1 E7018-1**

**1.0 SCOPE:**

- 1.1 The electrodes shall comply with requirements specified in the latest edition (applicable on the date of issue of purchase order) of ASME Sec.II.C.SFA-5.1, E7018-1. All tests, acceptance criteria shall be in accordance with this. Additional requirements specified in this document shall also be complied.
- 1.2 The electrodes shall be supplied in quantities as specified in the purchase order. The brand of SMAW Electrodes to be supplied shall be approved by the concerned IBR Authorities of the state. Every batch to be supplied should have been manufactured during the period when IBR approval for the brand was valid.

**2.0 CHEMICAL COMPOSITION:**

The chemical composition of the undiluted weld metal using this electrode shall conform to ASME SEC IIC SFA-5.1, E7018-1 for each size of electrode supplied.

**3.0 MECHANICAL PROPERTIES:**

The mechanical properties of the weld metal deposited using this electrode after stress relieving the test plate assembly at  $620 \pm 10^\circ\text{C}$  for 300 minutes shall meet the requirements of impact test as per ASME SECII.C SFA-5.1, E7018-1 and other properties as below for each size of electrode supplied.

Yield Strength at 0.2% Offset	410 MPa Minimum
Tensile Strength	540 MPa Minimum
Elongation in 50.8mm	22% Minimum

**4.0 RADIOGRAPHIC SOUNDNESS:**

The electrode shall be suitable for radiography quality butt joint welding of boiler pressure parts of SA299, SA106GrB, SA106GrC pipe material. The radiographic test shall meet the requirements of ASME SECII.C SFA-5.1, E7018-1 for each size of electrode supplied.

**5.0 FILLET WELD TEST:**

Fillet weld test done using this electrode shall meet requirements as per ASME SECII.C SFA-5.1, E7018-1 for each size of electrode supplied. The electrodes shall exhibit smooth running characteristics with soft and stable arc with ease of striking. The spatter level shall be negligible. Weld bead appearance shall be smooth with fine ripples and slag shall be self-peeling.

**6.0 SIZE:**

The electrodes shall be supplied in diameters and lengths as specified in the purchase order. The tolerance on diameter and length shall be as per SFA-5.1 for each size of electrode supplied.

Prepared:

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Reviewed and approved:

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**Welding Consumable Purchase Instruction for  
ASME SEC.II.C, SFA-5.1 E7018-1**

WCPI - 207

Revision No.: 09

**7.0 CORE WIRE, COVERING, EXPOSED CORE, IDENTIFICATION, METHOD OF MANUFACTURE:**

The electrodes shall meet the requirements of clause 3.2, 3.3, 3.4 of SFA 5.02 and clause 19 of SFA 5.1 for each size of electrode supplied.

**8.0 MOISTURE CONTENT OF COVERING AND DIFFUSIBLE HYDROGEN CONTENT:**

Moisture content of the electrode covering shall not exceed the limit specified in ASME Sec II C, SFA 5.1 E7018-1 for each size of electrode supplied. Diffusible hydrogen content of weld metal deposited using the electrode shall be maximum 4ml/100g. Test to be done as per ASME Sec IIC, SFA 5.1 E7018-1 for each size of electrode supplied.

**9.0 PACKAGING:**

9.1 Electrodes packed in standard quantity shall be wrapped tightly in a corrugated paper with moisture proof packing in polythene bags and sealed. These shall be further packed either in hermetically sealed containers or in cardboard packets and then packed with polythene bags and sealed. The number of electrodes per packet shall be such that the net weight of each packet does not exceed 5Kg. Packets shall be further packed in cardboard cartons each weighing not more than 25kg. The cartons shall be packed in waterproof boxes with crates so as to ensure no damage to electrodes during shipment and normal storage conditions.

9.2 Weight of each crate shall not exceed 1000kg.

9.3 Markings of packages shall be as per clause 3.6 of SFA-5.02.

**10.0 TESTING AND CERTIFICATION:**

10.1 Each consignment of electrodes supplied shall preferably be from one batch only.

10.2 Batch or lot classification shall be Class C1 as per SFA-5.01 filler metal procurement guidelines of ASME Sec IIC. (Latest edition).

10.3 The level of testing shall be Schedule K as per SFA-5.01 filler metal procurement guidelines of ASME Sec IIC. (Latest edition).

10.4 Three copies of original certified material test report in English signed by the manufacturer giving details of tests done in compliance with this WCPI and ASME Sec II C, SFA-5.1, E7018-1 shall be sent.

10.5 The manufacturer shall certify that supplies made against the batch conforms to the requirements of the latest edition (applicable on the date of issue of purchase order) of ASME Sec IIC SFA-5.1, E7018-1.

10.6 A copy of valid IBR approval certificate for the brand being supplied shall be sent along with every consignment.

10.7 Every packet supplied shall be exhibited with details in the below mentioned format through a seal or securely affixed label.

**"Certified by -----  
(Mention the concerned IBR authority of the state)  
Under periodic check test dated: XX-XX-XXXX.  
Brand approval valid till : XX-XX-XXXX."**

Sl. No.	Pre –Qualification Criteria for E7018-1	Bidder remark
1	<p>Bidder shall be a manufacturer of the Quoted Welding Consumables / an authorized dealer of the same.</p> <p>If the offer is quoted by agent, letter of authorization and agreement duly signed by the manufacturer is required to consider the offer.</p> <p>(Specify: Manufacturer / Authorized dealer)</p>	
2	<p>Bidder (Principle Supplier) shall have successful experience for supplying of Welding Consumables ( E7018-1 as per ASME Section IIC) to any govt. Organizations/ PSUs/ Public Ltd./ Company/Reputed Industries etc.</p> <p>Purchase orders copies/ related documents to be submitted along with offer to consider the offer.</p> <p>Note: Successful experience means – supplied and accepted.</p>	
3	<p>Kindly provide the self-declaration for “successfully supplied and accepted by customer” on Principle Supplier letter head regarding document SI . No. 2.</p> <p>In self-declaration document, kindly provide the following details:</p> <ul style="list-style-type: none"> <li>I. PO number</li> <li>II. PO date</li> <li>III. PO items description</li> <li>IV. Brand Name</li> <li>V. Supplied Quantity</li> </ul>	
4	<p>Quoted Welding Consumables brand name shall be provided along with offer.</p>	
5	<p>Mill address (manufacturing address) shall be provided along with offer.</p>	
6	<p>Mill capacity for Quoted Welding Consumables (By Principle Supplier) shall be provided along with offer.</p>	
7	<p>Manufacturer shall submit manufacturing process flow chart (Raw material to finished product).</p>	
8	<p>Manufacturer (Principle Supplier) shall submit a valid ISO 9001 certificate or Quality management system certificate or Quality management system or Written down procedure for ISO 9001 or Written down procedure for “Quality control”</p>	

Sign and seal of authorized person

  
**ADITYA KUMAR**  
 Deputy Manager  
 Welding Technology Centre  
 BHEL, Trichy - 620014.

Sl. No.	Pre –Qualification Criteria for E7018-1	Bidder Remark.
9	Shall confirm to Technical Specifications as per WCPI 207-09	
10	<p>Vendor should give confirmation to BHEL's Technical Specification (as per WCPI 207-09).</p> <p>Any deviation from the Specification are to be mentioned in the "Bidder remark Space".</p> <p>If There is no deviation vendor should indicate "No Deviation".</p>	
11	The manufacturer shall certified that supplies made against the batch conforms to the requirements of the latest edition(applicable on the date of issue of purchase order) of ASME Sec IIC SFA-5.1,E7018-1.	

  
**ADITYA KUMAR**  
 Deputy Manager  
 Welding Technology Centre  
 BHEL, Trichy - 620014.

**Annexure – A- Additional Terms and Conditions for GeM Enquiry**

The terms and condition mentioned in this document are applicable in addition to the GeM General Terms and Conditions. Bidders shall furnish pointwise confirmation/details.

<i>To be filled by bidder</i>		
<b>Description of the Equipment:</b>		
<b>GeM Tender No. &amp; Date</b>		
<b>Name of the firm (Bidder)</b>		:
<b>Address</b>		:
<b>Contact person 1</b>		<b>Contact person 2</b>
<b>Name:</b>		<b>Name:</b>
<b>Designation:</b>		<b>Designation:</b>
<b>Office Phone:</b>		<b>Office Phone:</b>
<b>Mobile:</b>		<b>Mobile:</b>
<b>e-mail:</b>		<b>e-mail:</b>
<b>Offer/Quotation reference with date</b>		:
Sl	Terms and conditions	Vendor's confirmation
1.	Inspection by BHEL/as per Technical specification(if any).	
2.	<p><b>Payment terms:</b></p> <ol style="list-style-type: none"> <li>1. Payment terms for Non MSME Suppliers: Within 90 days after CRAC</li> <li>2. Payment terms for Micro &amp; Small Enterprises (MSEs): Within 45 days after CRAC. The supplier should upload UDYAM Registration Certificate in proof of MSE.</li> <li>3. Payment terms for Medium Enterprises: Within 60 days after CRAC. The supplier should upload UDYAM Registration Certificate in proof of Medium Enterprises.</li> </ol> <p><b>Note:</b> Deviation in above payment terms is not acceptable. In case of Auto PRC/CRAC, Payment due date shall be calculated from CRAC date or material acceptance date by BHEL whichever is later.</p>	
3.	Response to Tenders for Indigenous supplier will be entertained only if the vendor has a valid GST registration number which should clearly mentioned in the offer. Indicate the GST registration number. If any specific exemption is available, a declaration with due supporting documents need to be furnished for considering the offer.	GST Registration No. _____
4.	<b>Performance Bank Guarantee:</b> Not Applicable	
5.	Kindly Indicate the HSN Code for all items	HSN CODE : _____
6.	Rate quoted in GeM portal should be on FOR destination basis inclusive of all taxes, P&F, freight etc. Transit Insurance is under Supplier scope.  Please indicate how much GST percentage is included in quoted price.	GST in %: _____

Vendor's Seal & Signature

## / On Bidder's office letter pad /

Self-Declaration

Enquiry No.	
Enquiry Date	

In line with Government public procurement order Number P-45021/2/2017-B.E-II dated 15.06.2017, and further modified order dt. 28.05.2018, 29.05.2019 & order 04.06.2020 issued by DPIIT

I / We hereby declare that I / We are a "Local Supplier" meeting the requirement of minimum local content (..... %) defined in the above government notification for the goods against above mentioned enquiry Number.

Details of location at which local value addition will be made is as follows:

Door No.	
Street / Address 1	
Street / Address 2	
District	
State	
Country	
PIN Code	

We also understand that the false declarations will be in breach of the code of Integrity under rule 175(1)(i)(h) of the General financial rules for which a bidder or its successors can be debarred for up to two years as per Rule 151(iii) of the General Financial Rules along with such other actions as may be permissible under law.

For Company Name:

Seal:

Signature:

Date:

Place:

**Note:**

" Local Content "means the amount of value added in India which shall ,unless otherwise prescribed by the Nodal Ministry, be the total value of the item procured(excluding net domestic indirect taxes) minus the value of imported content in the item(including all customs duties) as a proportion of the total value, in percent. "Local Supplier "means a supplier or service provider whose product or service offered for procurement meets the minimum local content.

# The above declaration shall be submitted mandatorily along with the offer in company letter head with seal & signature.

(Please fill all the yellow color field)