

Document No. :		FABRICATION DIVISION Welding Development & Technology BHEL, BHOPAL				
FBM/WD&T/TS20 Rev 00						
Technical Purchase Specification of E81T1-K2C FCAW wire						
P.I No.		Date:15-05-2020				
S. No	Description	Requirement*	Vendor to Confirm	Offered	Deviation	Remarks
1	Scope	This specification prescribes requirements for the classification of low-alloy steel electrodes for flux cored arc welding (FCAW).				
2	Application	The consumable shall be used for welding of Carbon and Low Alloy Steel material .				
2.1	Classification	The electrode shall meet all the requirements of ASME Sec II - Part C, SFA 5.29 — E81T1-K2C classification and alongwith that modified requirements specified in this specification shall also be adhered to.	OCM to Confirm			
2.2	Standard sizes	As per Table 10 of SFA 5.29 of ASME Sec II C.				
2.3	Finish and Uniformity	As per clause 18 of SFA 5.29 of ASME Sec II C.				
2.4	Standard Package Forms	As per clause 19 of SFA 5.29 of ASME Sec II C.				
2.5	Winding Requirements	As per clause 20 of SFA 5.4 of ASME Sec II C.				
2.6	Electrode Identification	As per clause 21 of SFA 5.29 of ASME Sec II C.				
2.7	Packaging	As per clause 22 of SFA 5.29 of ASME Sec II C.				
2.8	Marking of Packages	As per clause 23 of SFA 5.29 of ASME Sec II C.				
4	Tests Required	The wire shall meet the requirements of relevant tests as per Table 3 of SFA 5.29 of ASME Sec II C and additional tests mentioned in S. No. 4 of this specification. The wire shall meet the requirements of S. No. 4.3 and 4.4 in both as-welded as well as after PWHT (as per S. No. 5) also.	Refer Note 2** of this specification			
4.1	Chemical Analysis	As per clause 10 of SFA 5.29 of ASME Sec II C.				
4.2	Radiographic Test	As per clause 11 of SFA 5.29 of ASME Sec II C.				
4.3	Tension Test	As per clause 12 of SFA 5.29 of ASME Sec II C.				
4.4	Imapact Test	As per clause 13 of SFA 5.29 of ASME Sec II C. [Temperature for Impact Test: -30°C and Impact energy 27 J (minimum).]				
4.5	Fillet Weld Test	As per clause 14 of SFA 5.29 of ASME Sec II C. Fillet Weld Test shall be done in both the vertical and overhead positions.				
4.6	Diffusible Hydrogen Test	Diffusible Hydrogen content to be tested according to one of the methods given in AWS A4.3 and shall not exceed 5 mL/100g of deposited weld metal.	OCM to Specify			
5	PWHT	PWHT Temperature shall be 595-615°C and soaking time shall be 2 hour -0 + 15 minutes.	Refer Note 2** of this specification			
6	Test Assembly	The Test Assembly for tests mentioned in S. No. 4 shall be as per clause 9 of SFA 5.29 of ASME Sec II C except that the additional test coupons shall be prepared as per clause 9 of SFA 5.29 for test mentioned at S. No. 4.3 and 4.4 (for conducting tests in PWHT condition).	OCM to Confirm			
7	Quality Considerations					
7.1	Information to be supplied in the bid	At the time of bidding the welding consumable supplier shall furnish all the relevant technical information regarding his product which shall include the recommended welding parameters.	OCM to Confirm			
7.2	Deviations	The bidder shall clearly state, if there are any deviations to the requirements of this specification.	OCM to Confirm			
*All ASME standards referred in this specification shall be of Ed 2019						

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7.3	Reports / Certificates	Test certificates (for the specific batch of product being despatched to BHEL) of all the tests as specified in S. No. 4 of this specification shall be submitted to BHEL prior to despatch of material against BHEL PO.	OCM to Confirm				
8	Authorization and Correspondence	In case of authorized vendor quotes for the tender then the following must be met: 1. Vendor to provide authorized dealer certificate valid for atleast 1 year, and the OCM to take guarantee of the product quoted, failing this the offer will be rejected. 2. All Technical correspondence and confirmation shall be done with their principal supplier (OCM). Contact details of OCM to be provided with the offer. 3. All liability shall be of principal in the event of default by the authorized agent/dealer.	OCM to Confirm				
9	QUALIFYING CONDITIONS :						
9.1	Only those makes and brand combination shall be quoted of which atleast 3 ton quantity is cumulatively supplied to a single or multiple fabrication plants in the past 3 years (from enquiry due date). The following information (S. No. 9.2 to 9.8) shall be furnished with respect to S. No.9.1.		Vendor to confirm				
9.2	Purchase order copy (hiding the price) and invoice copy (hiding the price) is to be submitted by the vendor about the companies where the quoted wire has been supplied.		Vendor to specify				
9.3	Name of the customer / company where wire has been supplied.						
9.4	Complete postal address of the customer.						
9.5	Year of supply.						
9.6	Name and designation of the contact person of the customer.						
9.7	Phone, FAX no. and email address of the contact person of the customer.						
9.8	BHEL reserves the right to verify information provided by vendor. In case the information provided by vendor is found to be false/incorrect, the offer shall be rejected.						
10	Note :	1. BHEL reserves the right to call free sample spool (of size as required in PO) of minimum 12 kgs for further technical evaluation and testing at recommended parameters. The test results of BHEL will be final. Vendor to submit samples within 7 days after intimation by BHEL. 2**. OCM to confirm and provide TC along with offer. TC must have specific mention of all properties as required in S. No. 4. TC can be a standard TC of any batch produced in the past. 3. OCM to provide recommended welding parameters.	OCM to Confirm				
		Legends : 1. OCM- Original Consumable Manufacturer					
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