

No.: SPV/ENGG/MPR2016002 / Dated: 18.10.2016

Item : Aluminium Frame and Corner Block for ARC Glass – 4 mm Thick

Qty.: 36,750 Sets

	A. PRE-QUALIFICATION CRITERIA	Bidder's Confirmation (Please indicate deviations, if any)
1	The offer shall be quoted only by the original Aluminium Frame and Corner Block Manufacturers. However OEMs can also quote through their authorized channel partners/ dealers / representatives with a valid authorization certificate	Manufacturing Plant Location: (Complete Address & Contact Details)
2	Vendors should have a minimum of 17, 000 sets (Seventeen thousand Sets) per annum production capacity for Aluminium Frame and Corner Block.	Annual in-house manufacturing capacity for Aluminium Frame and Corner Block.....Sets Vendors should provide certificate of conformance and the latest company annual report, indicating their physical output.
3	Vendors should have supplied solar Aluminium Frame and Corner Block of minimum 5 MW equivalent per annum to reputed SPV Module manufacturers. The reputed module manufacturer should have manufactured module of rating 250 Wp or above and shall be IEC certified in the last three years.	Vendors should provide purchase order copies and satisfactory performance certificate from their customer's viz., PV module manufacturers for supply of Aluminium Frame and Corner Block.
BHEL RESERVES THE RIGHT FOR INDEPENDENT VERIFICATION OF THE CLAIMS MADE FOR CONFORMANCE TO THE PRE-QUALIFICATION CRITERION. BIDDERS TO ENSURE PROVIDING AUTHENTIC CERTIFICATES / DOCUMENTATION AND CREDENTIALS IN ORDER TO QUALIFY FOR BHEL TENDER PROCESS.		
	B. TECHNICAL	
1.	Aluminium Frame and Corner Block offered shall comply with BHEL Technical Specification and following Drawing Numbers & Purchase specification are : 3 988 04 003 10 (Rev00), 4 988 04 001 10 (Rev 00), 4 988 04 002 10 (Rev 00) and refer Purchase specification No. PS 901 01 0001, (Rev. 01) for Anodisation coating on Aluminium. Test / Inspection Certificate to be issued for each lot for the following: i) Aluminium extrusion material certificate for aluminium alloy 63400 WP as per IS:733 (OR) AA6063-T6 II) Dimensional Inspection report after fabrication as per BHEL Drawing No.39880400310 (Rev.00). iii) Anodising thickness of 18±3 microns as per BHEL Specification No.PS9010010001 (Rev 01)	Acceptable/Not Acceptable Acceptable/Not Acceptable Acceptable/Not Acceptable
2.	Certificate of conformance to the specification/drawings shall be provided with each lot mentioning BHEL Purchase Order number and quantity supplied.	
3.	Supplier has to replace defective item found during opening of the package at the time of actual use at BHEL.	
	C. Price Basis (PV Clause)	

2	NALCO Ingot IE07 price (as per NALCO India website) prevailing as on BHEL RFQ Issue date less existing NALCO product wise flat discount for ingots w.e.f. 01.07.2016 (as per NALCO India website) shall be taken as the basis for the calculation of the initial prices by the vendors at the time of submitting the offer.	
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Annexure – I PR

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Qty.: 36,750 Sets

	NALCO Ingot IE07 Price prevailing as of tender issue date (i.e., 31.08.2016) is Rs.130.00 per kg. Existing product wise flat discount for ingot as per NALCO website is Rs.7.00 per kg. Hence, net NALCO ingot IE07 price as of RFQ issue date is = Rs.130.00 – Rs.7.00 = Rs.123.00 per kg Total nominal weight of Aluminium required per set of Aluminium frames and corner blocks is 2.88 kg. Hence, price per set of Aluminium frames with corner blocks is = Cost of Aluminium ingot + Conversion Cost = Net NALCO Ingot IE07 price x Nominal weight of Aluminum frames and corner blocks / set + Conversion cost = Rs.123.00 x 2.88 + Conversion Cost. = Rs. 354.24 + Conversion Cost Conversion cost shall include conversion of Aluminium Ingot to extrusion, anodizing, fabrication, wastages, packing and forwarding and all other associated costs and profit margin for manufacturing Aluminium frames and corner blocks. Conversion cost shall remain firm till the completion of entire quantity of Purchase Order. Price variation is applicable on the net NALCO Ingot IE07 price as of actual invoice date over the net NALCO Ingot IE07 price as of BHEL RFQ Issue date. Net NALCO Ingot IE07 price as of actual invoice date shall be derived as below: a. For early & on-time delivery as per BHEL Purchase Order: Net Nalco Ingot IE07 price less flat discount as per prevailing NALCO website 2 (two) weeks prior to invoice date shall be applicable. b. For delayed delivery beyond the delivery as per BHEL purchase order: Net Nalco Ingot IE07 Price less flat discount as per prevailing NALCO website 2 (two) weeks prior to Purchase Order delivery date or 2 weeks prior to invoice date whichever is lower shall be applicable. <u>PVC shall be calculated as below:</u> Price Variation = (Net Nalco Ingot IE07 price as of invoice date – Net NALCO Ingot IE07 price as of RFQ issue date) x 2.88 = (Net Nalco Ingot IE07 price as of invoice date – Rs.123) x 2.88 Basic Billing Price = Basic price as per BHEL PO (Offered basic price at the time of initial submission of prices by the vendor and after negotiation if any) + price variation. Note: The interpretation of PVC clause shall be at the sole discretion of BHEL. The equivalent values in foreign currencies will be calculated by SBI TT Selling rate.	
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ANODIC COATING FOR ALUMINIUM

1. SCOPE: This specification covers the requirement of electrolytically formed anodic coatings on Aluminum & Al alloy parts which are exposed to direct action of climatic elements (viz sun, wind, rain, dust, salt, and water).

2. GENERAL:

- Aluminum parts to be anodized are made of Al alloy (63400/6063) as per IS-733 and supplied in W P /T6 (temper) condition.
- End use of component is for Solar Photovoltaic module framing.
- Anodizing process as per Type-I: IS-7088
- Type of sealing as per IS-7088 (Clause 7)

3. VISUAL REQUIREMENTS:

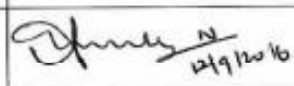
The anodic coating shall be continuous, smooth, adherent, uniform in appearance and shall be free from powdery areas, loose films, and discontinuities such as breaks, scratches or other damage.

4. DIMENSIONAL REQUIREMENTS:

After anodic coating, the parts shall comply with dimensional requirements of the applicable drawings.

- Extent of surface to be anodized : All over
- Anodic Coating Thickness: 18 ± 3 microns as per IS:1868 (AC 15 grade), Table 1
- Surface Texture: Natural matte finish
- Continuity: As per IS-8375
- Insulation: As per IS-8554, when anodic parts are checked, the break down potential of the coating is to be not less than 500 V DC.
- Corrosion resistance: Each anodized and sealed member when tested as per IS-9000 (part XI) as per procedure 1(5% salt solution) shall not show more than 5 isolated spots or pits (0.8 mm dia max).

Note: Supplier shall produce test certificate from reputed labs for Sl. nos. 4(d), (e) and (f) which shall not be older than one year as on the date of material supply.

Prepared By: PK	Reviewed By: NAR	Approved By: CNP	Date of Issue
	 12/9/2016		12.09.2016



Electroporcelains Division
Bengaluru – 560012, India

PS 901 01 0001

Rev No : 01

Purchase Specification
Group : Photovoltaic Module

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5. TEST METHODS:

VISUAL AND DIMENSIONAL

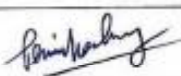
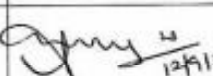
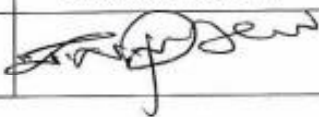
Parts selected in accordance with the sampling plan and tested for visual and dimensional checks shall comply with clause 3.

6. COATING THICKNESS:

Parts selected as per sampling plan and tested for coating thickness in accordance with IS-6012 shall comply with clause 4(b).

7. SAMPLING PLAN:

Sampling Size: Single Sampling Plan as per IS-10673, Special Inspection Level S-4, AQL 1.0

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	 12/9/2016		12.09.2016