

I/34701/2024



भारत सरकार / Government of India  
विद्युत मंत्रालय / Ministry of Power  
केन्द्रीय विद्युत प्राधिकरण/ Central Electricity Authority  
ई.टी. एवं आई. प्रभाग / ET & I Division

\*\*\*\*\*

सं. के.वि.प्रा./पी.एस./ई.टी. एवं आई./MII/2024/

दिनांक: 27.03.2024

To (All Stakeholders).

**विषय:** कंडक्टर/केबल के निर्माण के लिए प्रयुक्त एल्यूमिनियम सिल्लियां, वायर रॉड और तारों से संबंधित बीआईएस मानकों और गुणवत्ता नियंत्रण आदेशों के कार्यान्वयन के लिए एडवाइजरी।

**Sub:** Advisory for implementation of the BIS Standards and Quality Control Orders related to aluminium ingots, wire rods and wires used for the manufacture of conductors / cables - reg.

Sir,

In order to ensure that conductors/ cables being used in the power sector are of requisite quality, an advisory is hereby issued for implementation of the BIS Standards and Quality Control Orders related to aluminium ingots, wire rods and wires used for the manufacturing of conductors / cables. The advisory is enclosed herewith for necessary action and compliance by all concerned.

यह सदस्य (पी.एस.), के.वि.प्रा. के अनुमोदन से जारी किया जाता है।

Encl: As above,

भवदीय

Signed by Sunit Kumar  
Gupta

Date: 27-03-2024 14:34:26

Reason: Approved  
(सुनित कुमार गुप्ता)

निदेशक (ET&I)

प्रतिलिपि:

1. अध्यक्ष, के.वि.प्रा. के विशेष सहायक;
2. सदस्य (पी.एस.), के.वि.प्रा. के विशेष सहायक;
3. मुख्य अभियन्ता (PSE&TD), CEA.

I/34701/2024

## **Advisory for implementation of the BIS Standards and Quality Control Orders related to aluminium ingots, wire rods and wires used for the manufacture of conductors / cables**

The electric power lines are important system elements carrying the power from generating stations to the ultimate consumers. It is an established fact that the conductors used in the construction of electric power lines should be of high quality material. Aluminum ingots, wire rods and wires are used in manufacturing of the conductors. To ensure the quality of conductors, the Bureau of Indian Standard (BIS) along with Ministry of Mines and DPIIT had brought out the quality control orders (QCOs) on:

(a) Aluminium and Aluminium Alloy Products (Quality Control) Order 2023 (dated 25-09-2023) mandating the compliance of IS 5484 titled "EC grade Aluminium Rod produced by Continuous Casting and Rolling" and IS 2067 titled "Wrought Aluminium wire for electric purposes".

(b) Aluminium and Aluminium Alloys (Quality Control) Order, 2023 (dated 31-08-2023) mandating the compliance of IS 4026 titled "Aluminium ingots billets and wire bars (EC GRADE)".

2. It is pertinent to mention that if the primary grade aluminium ingots conforming to IS 4026 and aluminum wires and rods conforming to IS 5484 and IS 2067 are used for manufacturing of the aluminium conductors/ cables, then only the good quality conductors/cables conforming to relevant Indian Standard could be produced by all manufacturers.

3. It is thus necessary that in order to ensure the quality of aluminium conductors/cables, all the stakeholders follow the above mentioned quality control orders. It is hereby advised that all the utilities should invoke the compliance of the aforesaid quality control orders in their tender specifications for the procurement of conductors/cables for electric power lines. Compliance to QCOs would be helpful in acquiring the quality conductors/ cables and in the resultant reduction in the power losses in the lines. All entities procuring aluminium conductors/ cables are hereby advised to take following measures for effective enforcement of the above referred Orders /Standards to ensure quality of the conductors/ cables:

4. Accordingly, in compliance of Indian Standards and the above mentioned Orders, it is advised that transmission and distribution licensees shall specify suitable clauses in their tenders, that Aluminium ingots, wire rods and wires used for the manufacture of conductors / cables shall be made only from primary aluminium from the producers who have registered their wires, wire rods and aluminium ingots with BIS and are eligible as per the "Preference to Make in India Order" issued by relevant authorities under Ministry of Power, in line with the Department for Promotion of Industry and Internal Trade's (DPIIT's) Public

I/34701/2024

Procurement Order 2017 and its subsequent revisions. Invoices for the procurement of raw materials like aluminium wires, wire rods and ingots shall be furnished for each consignment of conductors/ cables to be supplied along with the manufacturers' test report for verification. Aluminium wires, wire rods and ingots procured from open market and not bearing the BIS mark shall not be used for the manufacture of conductors/cables.

5. Further, to ensure the implementation of Indian Standards, the following process and quality checks shall be made as mandatory conditions to be fulfilled by conductor and cable suppliers/manufacturers participating in the tenders issued by all Transmission and Distribution Licensees:

6. All the procuring entities are advised to incorporate following in their tender documents:

- (a) All primary aluminium manufacturers have their own testing facilities and provide their own test/ quality certificates mentioning the elemental analysis of aluminium wires, wire rods and ingots supplied to their customers. The bidder shall produce the certificate to the procurer of conductors/ cables at the time of participation in the bid.
- (b) Sampling and inspection of conductors and cables shall be conducted at the site of delivery mentioned during the award of contract. Such sampling and inspections shall be over and above the existing on-site inspection(s) and testing at facility of manufacturer or supplier.
- (c) Instead of restricting the measurement of Direct Current (DC) resistance at 20 degree Celsius ( $^{\circ}\text{C}$ ) only at lab, such measurement of DC resistance of conductors shall also be undertaken at the site post installation, over and above the existing on-site inspection and testing at supplier facility.
- (d) The verification of the procurement invoices of raw materials (aluminium wires, wire rods and ingots) and linking them to invoices of final products (conductors/cables), shall be undertaken through a digital or mechanical mechanism for stamping/verification by the transmission or distribution licensees, to prevent any re-use or duplication of raw material invoices.
- (e) The bidder shall be required to submit with the bid the declaration by the manufacturer or supplier revealing the actual source of aluminium wires, rods, and ingots used for making the conductors /cables through a certification from their Statutory Auditor/Cost Auditor. The submission of such certification from their Statutory Auditor or Cost Auditor shall be a pre-condition for participation in the bid for procurement of conductors or cables to be used in electric power lines.
- (f) A Standing Committee shall be constituted by respective transmission and distribution licensees to address the grievances arising out of the non-compliance or violations of any condition of tender document or

I/34701/2024

contract related to implementation of Indian Standards and QCOs for aluminium wires, wire rods and ingots and other applicable guidelines/orders issued by appropriate authority.

A Quarterly compliance report relating to the above shall be furnished by the procuring entities to the Member (PS), CEA.

\*\*\*\*\*