



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

To (as per the list at annexure)

विषय: केबल, ट्रांसफार्मर और अन्य इलेक्ट्रो-तकनीकी उत्पादों के निर्माण के लिए उपयोग किए जाने वाले तांबे के उत्पादों और मिश्र धातुओं से संबंधित बी.आई.एस. मानकों और गुणवत्ता नियंत्रण आदेशों के कार्यान्वयन के लिए सलाह के संबंध में।

Sub: Advisory for implementation of the BIS Standards and Quality Control Orders related to copper products and alloys used for the manufacture of cables, transformers and other electro-technical products - reg.

Sir,

To ensure that cables, transformers and other electro-technical products being used in the power systems are of requisite quality, the subject cited advisory is hereby issued for implementation of the BIS Standards and Quality Control Orders related to copper products and alloys used for the manufacturing of these products. The advisory is enclosed herewith for necessary action and compliance by all concerned.

This issue with the approval of Member (PS), CEA.

Encl: As above,

(सुनित कुमार गुप्ता)
निदेशक (ई.टी. एंड आई)

प्रतिलिपि :

1. अध्यक्ष, के.वि.प्रा के विशेष सहायक;

अनुलग्नक

Sr. No	Name (Ms/Shri)	Organization	Association	Email ID
1	Chairman & Managing Director	Power Grid	Powergrid Corporation of India Ltd.,	cmd@powergrid.in ksreekant@powergrid.in
2	Chairman & Managing Director	UPPCL	Uttar Pradesh Power Transmission Corporation Ltd.	cmd@upptcl.org
3	S. K. Jana	Apar Industries	Apar Industries Limited, Mumbai	sk.jana@apar.com
4	Dr. Sandeep Vakhariya	Aashumi Chemicals	Bombay Non-Ferrous Metals Association Ltd.	aashumichemicals@gmail.com
5	Krishnan AV	Adani Enterprises Ltd.	Indian Primary Copper Producers Association	krishnan.av@adani.com
6	Louis Lobo	Adani Enterprises Ltd.	Indian Primary Copper Producers Association	louis.lobo@adani.com
7	Mohanasundaram Natarajan	Adani Enterprises Ltd.	Indian Primary Copper Producers Association	mohan.natarajan@adani.com
8	Dr. Pankaj Tiwari	Adani Enterprises Ltd.	Indian Primary Copper Producers Association	pankajkumar.tiwari2@adani.com
9	Davinder K. Jain	Agarwal Metals	Indian Non-Ferrous Metals Manufacturers Association	dkj2854@hotmail.com
10	Suresh Jain	Ankita Oversees	Bombay Non-Ferrous Metals Association Ltd.	bnfmal@gmail.com
11	Devendra	Bhagyanagar	Material	devendra@surana.co

	Surana	India Ltd.	Recycling Association of India	m
12	Abhishek Mohla	Hindalco Industries Ltd.	Indian Primary Copper Producers Association	abhishek.m.m.mohla@adityabirla.com
13	Jayanta Ranasingh	Hindalco Industries Ltd.	Indian Primary Copper Producers Association	jayanta.ranasingh@adityabirla.com
14	Rohit Pathak	Hindalco Industries Ltd.	Indian Primary Copper Producers Association	rohit.pathak@adityabirla.com
15	Ruchi Kukreja	Hindalco Industries Ltd.	Indian Primary Copper Producers Association	ruchi.kukreja@adityabirla.com
16	Dr. De Sarkar	Indian Copper Development Centre	Indian Copper Development Centre	icdckolkata@gmail.com
17	Mahendra Mehta	Indigo Metal Alloys	Bombay Metal Exchange Ltd.	mkmehta@indigometalloys.co.in
18	U K Jatia	Indoswe Engineers Pvt. Ltd.	Indian Copper Development Centre	
19	Kamlesh Jain	Jain Metal Group	Material Recycling Association of India	kamlesh@jainmetalgroup.com
20	Mayank Pareekh	Jain Metal Group	Material Recycling Association of India	mayank@jainmetalgroup.com
21	Sandeep Jain	Laurel Wires Ltd.	Bombay Metal Exchange Ltd.	president@bme.in
22	Amar Singh	Material Recycling Association of India	Material Recycling Association of India	mail@mrai.org.in
23	Rikab Mehta	Mehta Tubes	Bombay Metal Exchange Ltd.	rikab@mehtagroup.com
24	Pramood Shinde	Metal Recycling	Material Recycling Association of India	
25	Dhawal Shah	Metco Marketing (India) Pvt.	Material Recycling Association of	dhawal@metcoindia.com

		Ltd.	India	
26	Sanjay Mehta	MTC Business Pvt. Ltd.	Material Recycling Association of India	mehtasanjay@mtcgro up.in
27	Milan Mehta	Precision Wires India Ltd.	Winding Wires' Manufacturers' Association of India	milan@pwil.net
28	Jignesh Shah	Rajhans Impex Pvt. Ltd.	Material Recycling Association of India	jfs@rajhansimpex.com
29	Balkrishna Binani	Rashtriya Metal Industries Limited	Indian Copper Development Centre	mail@rashtriyametal.com
30	Divya Pandya	Rashtriya Metal Industries Limited	Indian Copper Development Centre	divya@rashtriyametal.com
31	Shree Gopal Kabra	RR Cabel	Wires and Cables Product Council	shreegopal.kabra@rrglobal.com
32	Vimal Jalan	Slimlites Electricals Pvt. Ltd	Winding Wires' Manufacturers' Association of India	vimal.jalan@seplco.com
33	Puneet Khurana	Sterlite Copper	Indian Primary Copper Producers Association	puneet.khurana@fujairahgold.com
34	I Rajasekhar	Vedanta Limited	Indian Primary Copper Producers Association	i.rajasekhar@vedanta.co.in
35	Anil Tembe	Vedanta Limited	Indian Primary Copper Producers Association	Anil.Tembe@vedanta.co.in
36	Aditya Menon	Vedanta Limited	Indian Primary Copper Producers Association	Aditya.Menon@vedanta.co.in

Advisory for the implementation of BIS Standards and Quality Control Orders related to copper products and alloys used for the manufacturing of cables, transformers and other electro-technical products.

The electric power network is an important infrastructure system that carries the power from generating stations to the ultimate consumers. It is an established fact that the products and equipment used in the construction of this power system should be of high-quality material. Copper products and alloys are used for the manufacturing of cables, transformers and other electro-technical items installed in the power system.

To ensure the quality of these finished products, the DPIIT and Ministry of Mines have issued the following quality control orders (QCOs) on:

(a) Copper Products (Quality Control) Order 2023 (dated 17-10-2023), issued by DPIIT mandating compliance of the following Indian Standards (:

- IS 12444: 2020 – Copper Wire Rods for Electrical Applications.
- IS 613: 2000 – Copper Rods and Bars for Electrical Purposes.
- IS 1897: 2008 – Copper strips for Electrical Purposes.
- IS 4171:1983 - Copper Rods and Bars for General Engineering Purposes.
- IS 1545: 1994 - Solid Drawn Copper and Copper Alloy Tubes for Condensers and Heat Exchangers.
- IS 2501: 1995 - Solid Drawn Copper Tubes for general engineering purposes.
- IS 14810: 2000 - Copper Tubes for plumbing - Specification.
- IS 10773:1995 Wrought Copper Tubes for Refrigeration and Air Conditioning Purposes
- IS 4412:1981 Copper Wires for general engineering purposes.

(b) Copper (Quality Control) Order, 2023 (dated 31-08-2023), issued by Ministry of Mines, mandating compliance of IS 191: 2007 titled “Copper specification”, outlining chemical composition and physical properties of various types of copper in the form of refinery shapes including horizontally, vertically and continuously cast wire bars, cakes, billets and ingots.

2. It is pertinent to mention that if only primary grade copper items conforming to IS 191: 2007, IS 12444: 2020, IS 613: 2000, IS 1897: 2008 (of latest issue) are used for manufacturing of copper wires, rods, bars, strips, billets, ingots etc., and these items are further used for manufacturing downstream products such as

cables, transformers and in other electro-technical products, then only good quality finished products conforming to relevant Indian Standard can be produced by all the manufacturers.

3. It is thus necessary that to ensure the quality of finished electrical and other products, 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 cables, transformers and other electrotechnical products for their power networks. Compliance with QCOs would also be helpful in the resultant reduction in the power losses in the network.

4. Accordingly, it is advised that transmission and distribution licensees shall specify suitable clauses in their tenders that only primary grade copper items conforming to IS 191: 2007, IS 12444: 2020, IS613: 2000, IS 1897: 2008 (of latest issue) are used for manufacturing of the copper wire rods, bars, strips etc for use in electrical and general engineering purposes, and only these items are further used for the manufacturing of downstream products such as cables, transformers and other electrotechnical products conforming to relevant Indian Standard by all manufacturers. Invoices for the procurement of raw materials like horizontally, vertically and continuously cast copper wire bars, cakes, billets and ingots shall be furnished for each consignment of cables, transformers and other products along with the manufacturers' test report for verification. Copper wire bars, cakes, billets and ingots procured from the open market and not bearing the BIS standard mark shall not be used for the manufacture of these items.

5. Further, to ensure the implementation of Indian Standards, these process and quality checks shall be made as mandatory conditions to be fulfilled by the finished equipment suppliers/ manufacturers participating in all 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 copper manufacturers have their own testing facilities and provide their own test/ quality certificates mentioning the elemental analysis of copper wires, rods, bars, strips, cakes, billets and ingots supplied to their customers. The bidder shall produce a valid certificate to the procurer of cables, transformers and other electrotechnical products at the time of participation in the bid.
- (b) Sampling and inspection of cables, transformers and other products 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) The verification of the procurement invoices of raw materials (copper wires, rods, bars, strips, cakes, billets and ingots) and linking them to

the invoices of the final products (cables, transformers and other products) 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.

- (d) The bidder shall be required to submit with the bid the declaration by the manufacturer or supplier revealing the actual source of copper wires, rods bars, strips, cakes, billets and ingots used for making cables, transformers and other products 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 bids issued by procuring entities for the procurement of cables, transformers, and other products to be used in electric power lines.
- (e) 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 contract related to implementation of Indian Standards and QCOs for copper wire bars, cakes, billets and ingots and other applicable guidelines/ orders issued by appropriate authority.

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