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भारतीय मानक ब्यूरो

BUREAU OF INDIAN STANDARDS

(METALLURGICAL ENGINEERING DEPARTMENT)

AGENDA

Name of the Committee	No. of Meeting	Date & Day	Time	Venue
Ores and Feed Stock for Non-Ferrous Industry, their Metals/Alloys and Products (Excluding Aluminium and Copper) Sectional Committee, MTD 9	24 th	19 th November 2024, Tuesday	11:00 h (+05:30 GMT)	Physical, Meeting Venue: NIT Srinagar, Hazratbal Kashmir, Srinagar, Jammu and Kashmir, 190006 Nearest Airport: Sheikh-ul-Alam International Airport Srinagar For venue details contact: Shri Saaqib Raahi Scientist C/Deputy Director, MTD saaqib@bis.gov.in ; 7006607673) & Shri Anand Shankar Soni

				Executive Assistant, MTD 82108450046
<p>HOW TO REACH THE VENUE FROM AIRPORT: https://maps.app.goo.gl/CG1GK4pEEia61SQQ7</p> <p>LOCATION OF NIT SRINAGAR: https://maps.app.goo.gl/3oZcXwm69m4xdB9U6</p> <p>Due to the limitations on the size of file which can be shared through BIS portal, the word file of this agenda can be downloaded from the Google drive the link of which is given below: - https://docs.google.com/document/d/1fiCSwwyhTGRlwBfg0LDUyl5wBTMJGDEM/edit?usp=sharing&oid=102552629546669138023&rtpof=true&sd=true</p>				

Chairperson: **Dr. Abhilash, Principal Scientist & Assistant Professor (CSIR), NML**
Member Secretary: **Shri Saaqib Raahi**

Item 0 WELCOME AND OPENING REMARKS

0.1 Opening Remarks by the Chairperson

Item 1 CONFIRMATION OF MINUTES OF THE PREVIOUS MEETING

- 1.1. The minutes of the 23rd meeting of Ores and Feed Stock for Non-Ferrous Industry, their Metals/ Alloys and Products (Excluding Aluminum and Copper) Sectional Committee, MTD 9 held on 27 May 2024 in

Hybrid mode via Web Ex were circulated vide our letter No. MTD-9/A-2.23 dated 24-07-2024. However no comments were received till the last date i.e. 15-08-2024 to receive the comments.

The committee may consider and approve the minutes of the previous meeting.

Item 2 SCOPE AND COMPOSITION OF SECTIONAL COMMITTEE, MTD 9

2.2 Review of the membership in the Committee - In accordance with the guidelines, the composition should be compact and the membership of the committee shall be reviewed after 3 years and the organizations representing for reasonable long time without participation/contribution may be substituted by new organization that are capable of contributing in the new technologies/area of work.

2.3 Balancing of all interested groups in the Committee - It has been decided that the composition of the Technical Committee should be reviewed to **have at least two third of the committee** members representing **Consumers/Technical Bodies/R&D/Testing Laboratories/ educational institutions/ Govt. Departments** etc, and the representation of the manufacturing industries/Associations of Industries should be not more than one third of the committee members. NGO's and Consumer Organizations may be co-opted in Technical Committees where there is no adequate representation.

2.4 The Size of the Committee - The size of the committee is often a compromise between a reasonably broad basis of representation and the need to restrict membership to workable numbers. Generally, a smaller membership will be appropriate for a committee dealing with detailed aspects of a standard, with wider representation being provided at the more senior committee levels. In order to keep committee to a workable size, the optimum size of a Sectional Committee is 30 and it should have individuals (in personal capacity or as representative of an organisation) with widely acknowledged domain area expertise and experience on the subjects covered by the scope of the Sectional Committee. Whenever an organisation viz. Ministry, Industry

Association or Research and Academic Institutions is included in the Sectional Committee, it should be ensured that the person representing the organisation is clearly specified and has the desired standing.

2.6 Attendance of members in the committee - If a member fails to attend any meeting of the Sectional Committee, communication should be sent to him by member secretary informing him about the absence in the previous meeting. In case the member fails to attend the second committee meeting despite the communications, the letter shall be sent by Head of the Department concerned about his/her termination from the sectional committee with prior approval of committee. The Sectional Committee should review all these cases and the cases of absenteeism of serious nature and make suitable recommendations for their replacement to the Divisional Council.

As per the office order No. PNC09/18/2023-PNC-BIS dated 05-09-2023, the following guidelines are issued for the Effective Implementation of the Process Reforms Aimed at the Strengthening of the Standardisation Ecosystem in the Country:



office order.pdf



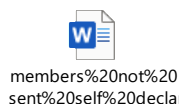
Declaration
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1. Each of the members of a Technical Committee shall be required to sign a declaration concerning the duties and responsibilities of the member of a Technical Committee in the form prescribed by BIS.
2. It shall be mandatory for a member of the Technical Committee to record his comments in regard to a Preliminary Draft Standard. In case, a member feels that the subject the draft deals with is not related to his domain knowledge, he should have it mentioned in his comment.
3. Absence from two consecutive and less than 50 percent of the meetings of the TC held in a year shall invite termination of the membership except in special circumstances acknowledged in the writing by the Divisional Council on the basis of the recommendation of the TC to this effect.
4. The quorum for the TC meeting shall be 10 or one third of the members, whichever is higher.

5. A person whose membership is terminated on the ground of absence from the meetings or not responding to the Preliminary Draft standard shall not be eligible to be reinducted as a member in any of the TCs of BIS for two years from the date of termination

As per the above directions of DG, BIS instructions for the effective implementation of the process reforms aimed at the strengthening of the standardization ecosystem in the country (attached herewith) , "Declaration by the Member of the Technical Committee of BIS" (format is attached herewith) is to be submitted mandatorily by every member (either principal or alternate member) of technical committee, Accordingly members were kindly requested to send the signed copy of the declaration latest by 27th May 2024 vide mail dated 8th May 2024.

List of the members who has not sent the self-declaration yet is enclosed below and the status of the numbers of declaration from the member received are as follows:



No. of Members in TC	No. of Declarations Received	Percentage
58	51	88%

Organizations who have not attended the last two technical committee meeting held in 27 May 2024 is enclosed below and committee may deliberate and decide on their withdrawal (if not attending today):

SI No.	Organization	Representative Principal/Alternate	21 st	22 nd	23 rd	Meetings Attended

1.	Bhabha Atomic Research Centre , Mumbai	Dr. Dhruva Kumar Singh (Principal) Dr. Bhaskar Paul (Alternate) Shri Rajak Syed(Young Professional)	Y	Y	N	2/3
2.	CSIR - Central Electrochemical Research Institute, Karaikudi	Dr. C. Naveen Kumar (Principal) Dr. M. Jayakuma (Alternate 1) Dr. N. Rajasekaran (Alternate 2)	Y	Y	N	2/3
3.	CSIR -National Metallurgical Laboratory, Jamshedpur	Dr. Pratima Meshram (Alternate)	Y	Y	N	2/3
4.	Indiana Gratings Private Limited, Pune (Co-option request accepted by the committee in its 22 nd committee meeting)	Shri Sandesh.A.Nannaware (Principal) Shri Sanjay Bharne (Alternate)	-	.	N	0/1
5.	Nuclear Fuel Complex, Hyderabad	Shri Vijay Kaushik (Principal) Smt. G Samyuktha(Alternate)	Y	Y	N	2/3

6.	Naval Materials Research Laboratory, Ambarnath, Distt. Thane, Maharashtra.	Mr. V.P. Deshmukh (Principal) Dr. A. Gourav Rao (Alternate)	N	Y	N	1/3
7.	RITES Limited, Gurugram	Shri V.K. Dwiwedi (Principal) Shri Sandeep Gupta (Alternate)	N	Y	N	1/3
8.	The Tinsplate Company of India Limited, Jamshedpur	Dr. Sourajyoti Dey (Principal) Shri Subrata Sadhu(Alternate)	Y	Y	N	2/3
9.	Nile Limited, Hyderabad	Shri KHK Srinivas (Principal) Shri S Mahesh Babu (Alternate)	Y	Y	N	2/3

The committee may please note and decide.

2.7 Further action taken with respect to the decision of the committee in its previous (23rd) meetings regarding the withdrawal of the organizations listed below are as follows:

SL. No	Organization Name	Decision of the committee in its previous meeting	Action taken
1.	Directorate General of Aeronautical Quality Assurance, Ministry of Defence, New Delhi Latest nomination details have received vide mail dated 27th September 2023.	As the organization is not responding to the multiple letters send to them regarding the active participation in the proceedings of the committee and also the organization has not been not participated in the last two consecutive meetings even after providing the fresh nomination, hence the committee after deliberation decided to withdraw the membership of this organization and requested member secretary to send them the termination letter. If they responded and are interested to participate further in the proceedings of the committee than re-co-opting of this organization into the committee will be discussed in the upcoming committee meetings.	Accordingly as per the decision of the committee in its previous meeting the same and has been put up for MTDC Approval whose meeting is scheduled on 19 November 2024. After the same is approved termination letters will be sent. The committee may please note.
2.	Mishra Dhatu Nigam Limited (MIDHANI), Hyderabad	As the organization is not responding to the multiple letters send to them regarding the active participation in the proceedings of the committee and also the organization has not been not participated in the last two consecutive meetings, the committee after deliberation decided to withdraw the membership of this organization and	-----DO-----

		<p>requested member secretary to send them the termination letter. If they responded and are interested to participate further in the proceedings of the committee than re-co-opting of this organization into the committee will be discussed in the upcoming committee meetings.</p>	<p>The committee may please note.</p>
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2.8 The present composition of sectional committee is given at [ANNEXURE-1](#).

The committee may note and review the composition of the committee in accordance with the above guidelines.

2.9 The committee after deliberation on the panels in previous meeting decided to revamp the composition of Panel 1 and constituted the following panels:

PANEL-1 FOR LEAD AND LEAD ALLOYS (BOTH PRIMARY AND SECONDARY)

1. Shri K Sridhar of M/s ILZDA (Panel convener)
2. Shri KHK Srinivas, of M/s NILE lead Ltd.
3. Dr. Sagar Sengupta, of M/s Exide Industries Ltd
4. Shri Amrendra K.Jha of M/s Arya Alloys
5. Shri Himmat Hadiya of M/s HZL.
6. Tarush Jain M/s Saru Smelting Private Limited, Meerut

Accordingly, as per the decision of the committee in its previous meeting, letters to co-opt into the panel is yet to be sent once again to induct the organizations, M/s Jain Metal Group, Chennai; SILMA (South Indian Lead Manufacturers Association), Coimbatore; Pilot Industries, Rajasthan which were co-opted in the previous meetings as the details of contact details of relevant persons are awaited from Shri K. Sridhar of M/s ILZDA. These nominations are important to discuss and review the Indian Standards- one related to Lead and Lead Alloys and another on the sampling of lead and lead alloys.

The committee may please deliberate and decide.

PANEL-2 FOR ZINC AND ZINC ALLOY (BOTH PRIMARY AND SECONDARY) INGOTS AND THEIR PRODUCTS (EXCLUDING DIE CASTINGS ALLOY INGOTS AND DIE CASTINGS)

1. Shri Himmat Hadiya of M/s HZL (Panel Convener),
2. Dr Rahul Sharma of M/s IZA and
3. Shri K Sridhar of M/s ILZDA
4. Shri Vivek Noronha, of M/s Southern Metals
5. Shri Vishal Kothari of M/s Kothari Metsol Pvt. Ltd , Pune
6. Shri Satish Tailor of M/s Metallizing equipment. Co. Pvt. Ltd.

It is to inform to the committee that, since the revision of base metal standards is over and members of M/s Madhav KRG Group have no further role in formulation of new indigenous standard on CGG , hence the committee in its previous meeting decided to remove them from this panel, accordingly the nominations were withdrawn. Further Shri Himmat Hadiya of M/s Hindustan Zinc Limited, Udaipur was requested to share the contact details of the relevant persons of the organizations M/s Tata Steel, M/s JSW Steel, M/s POSCO, M/s SAIL, M/s Nippon Steel to the Member Secretary to be contacted to get the nominations of the expert/member to get them onboard in the Panel-2 for formulation of new standard on CGG alloys. **However, the reply is awaited.** It is further proposed to panel that a separate working group may be created (members will be nominated by Panel Itself) under this Panel

can be assigned the task of drafting the final draft standard on CGG Zinc alloys ingots by reviewing the reports and rough draft submitted by BIS Intern and by taking assistance from relevant international standards like ASTM B852 and keeping in view the Indian industry requirements.

The committee may please deliberate and decide.

PANEL-3 FOR ZINC ALLOY DIE CASTINGS

1. Dr Rahul Sharma of M/s IZA (Panel Convener) and
2. Shri K Sridhar of M/s ILZDA
3. Shri Sandeep Tandon of M/s DST Industries Ltd, Haryana.
4. Shri Himmat Hadiya of M/s HZL
5. Shri Nitin Salvi of M/s Phoenix Industries Limited, Masat

It is to inform to the committee that as per the decision of the committee in its previous meeting the nomination of the organization M/s Sundaram Dynacast Private Limited was withdrawn from panel 3 and the organization M/s Pheonix Industries (MSME), Mumbai was inducted into the panel and into the committee (being manufacturer of Zinc and zinc alloys) for discussion on revision of IS 713 and IS 742. It is further proposed to change its type from Panel to Working Group with scope and title as follows:

Title: MTD 09 : WG 01 ZINC ALLOY INGOTS AND DIE CASTINGS

Scope: Formulation of revised drafts of IS 713 and IS 742 by taking assistance from relevant ASTM and ISO standards.

The committee may please deliberate and decide.

PANEL 6 FOR THE REVISION OF IS 1921: 2005

1. **Shri V. S. Prasanna of M/s Macdermid Alpha Electronic Solutions India Private Limited, Chennai (Convener)**
2. **Shri Francis Joseph of M/s Hiflo Solders**
3. **Shri Ramesh of M/s BT Solders**
4. **Shri Vishal Kothari of M/s Kothari Metsol Pvt. Ltd, Pune**
5. **Shri Arun Gupta of M/s Saru Smelting**
6. **Shri Adil P Babaadam of M/s Persang Alloy Industries Pvt Ltd, Vododera**
7. **Dr. S. K. Khanna of M/s Khanna Traders and Engineers, New Delhi**

The committee is requested to create a Working Group under this Panel (members will be nominated by panel) who will draft the standard/ submit recommendations on the adoption/modification of IEC standard for solder pastes and flux classification by studying the reports submitted by BIS intern and relevant international standards like IPC, IEC JIS ETC and also considering the current industrial practices. It is further proposed to add name of Ms. Vaishali Kachhia from Persang Alloys as another member in the panel to recognize his contribution also in drafting the specifications of IS 1921.

It is further requested to recommend the solder paste users which can be co-opted into this panel/working Group and the details may be provided by the committee.

It is also requested to change the title of Panel as **Soldering Products (Soldering alloys, Solid and flux cored Solder wire, soldering Pastes and Soldering Fluxes)**

The committee may please deliberate and decide.

2.10 It is to inform to the committee that as per the decision of the committee in its previous meeting letter for co-option was once again sent to M/s Galbaro Ispat, Thane which was co-opted in the previous meetings. **However, the reply is awaited.**

The committee may please deliberate and decide.

2.11 It is to inform to the committee that as per the decision of the committee with respect to the organizations co-opted in the previous meetings listed below and not responding to the multiple co-option request, the nominations of the same were withdrawn and has been sent to MTDC for approval.

Sl. No.	Name of the Organization/ personal capacity
1.	Gravita India Ltd, Jaipur
2.	DMRL, Hyderabad
3.	M/s High Energy Projectile Factory



The committee may please note.

Item 3 ACTION TAKEN REPORT

The summary of action taken on the decisions of the previous meeting of MTD-9 is reported below.

Sl. No.	Subject	Decision of the Committee during previous meetings and action taken	Decision of the Committee in its previous meeting	Action taken
1	IS 713 : 1981 Specification for zinc base alloy	The committee in its 19th meeting requested Shri M. Nambi of M/s HZL to review the standard and submit the review report to the committee	The committee noted the information given in Annexure-2 Sl No 1 of the agenda of the meeting and after deliberation	Co-option request was accepted by Phoenix Alloys and nominations were received. After the receipt of

	<p>ingots for die casting</p>	<p>within 1 month along with the draft standard (in case revision is being proposed) to the committee. On receipt of the recommendation,, the same has to be circulated to the committee members for 3 Weeks' time for their views/comments Shri M. Nambi of M/s HZL was requested vide multiple emails to submit the report. However recommendations are awaited. It is to inform to the committee that the following International standard exist on the subject matter: ISO 301 BSEN 1774 GB/T 8738 JIS H 2201 ASTM B240 All of these standard does not specify only die casting but for general Foundry purposed. For instance, say ISO 301, it specifies the designations, chemical compositions, marking and other requirements for zinc alloys, in ingots (or liquid form), produced for</p>	<p>decided that there is no need for R&D to revise the standard as the new grades are well established and the newer grades are well documented in the international standards like ISO and ASTM and lot of R&D study is already available to take assistance thereof. The committee further requested the panel 3 to the review the standard IS 713 and IS 742 and submit the recommendations for aligning it with ISO 301 and ISO 15201 respectively or otherwise submit the revised draft in case the panel recommends for non-harmonization with ISO standards before the next committee meeting. The committee further decided to withdraw M/s Sundaram Dynacast Private Limited and Co-opt the organization M/s Pheonix Industries (MSME), Mumbai into the panel and into the committee</p>	<p>nominations following panel meetings were held and recommendation came thereof: 2nd Panel meeting of MTD09: Panel 3: The Panel 3 held its second meeting on 4th October 2024 and recommended to include HF Alloys and Alloy 7 based on ASTM B 989 and ASTM B 240 instead of adopting ISO 301 in case of IS 713. In case of IS 742, the panel decided to take assistance from ASTM B 1013 and ASTM B 86 instead of adopting ISO 15201. The Panel requested member secretary to modify the draft based on above points already shared to BIS by Dr. Rahul Sharma of IZA, New Delhi for IS 713 and the same will be discussed in the next panel meeting. The minutes of the panel meeting is enclosed below.</p>
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		<p>foundry purposes. Another example is ASTM B240-17, Standard Specification For Zinc And Zinc-Aluminum (ZA) Alloys In Ingot Form For Foundry And Die Castings</p> <p>The committee in its 20th meeting requested the panel-2 for Primary Zinc & Zinc Alloys consisting of Shri M Nambi (Panel Convener) ,Dr Rahul Sharma and Shri K Sridhar to review the standard and also take into consideration the information shared by BIS Secretariat and submit the recommendations to the committee till 31st December 2022. On receipt of the recommendation,, the same has to be circulated to the committee members for 3 Weeks' time for their views/comments. In case no comments are received, the same would be sent for Wide circulation for a period of one month.</p> <p>Action Taken Combined Panel meeting of Panel2 and Panel 4:</p>	<p>(being manufacturer of Zinc and zinc alloys)</p>	<p>3rd Panel meeting of MTD09: Panel 3:</p> <p>The panel in its 3rd meeting held on 25th October 2024 after detailed deliberation with respect to IS 713 draft prepared by member secretary finalized the draft below</p> <p style="text-align: center;">  IS 713 New draft .docx </p> <p>And further requested the Shri Himmat Hadiya and Shri Nitin Salvi to give a final review on the document finalized in the meeting submit their recommendations via WhatsApp within 2 days to the member secretary. Since no objections were raised by the two members the draft finalized after the recommendations is enclosed below.</p> <p style="text-align: center;">  IS 713 New draft .docx </p>
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The panel2 and Panel 4 in its 1st combined meeting of MTD Panel 2 and Panel 4 held on 20th March 2023, after detailed deliberation recommended to **adopt ISO 301** which specifies for all zinc alloy ingots general Foundry purposes and not only for die castings as in the case of IS 713.

The Panels further recommended to **adopt ISO 20081** sampling of zinc and zinc alloys which is indispensable reference in the standard ISO 301.

The minutes of the combined panel meeting is given below:



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However, the panel 3 on die casting during its meeting held on 8th May 2023, recommended to modify the ISO 301 and ISO 15201 and while keeping the grades as it is as of ISO and further it was also recommended to incorporate (HF

The Committee may please deliberate and decide on P-Circulation.

With respect to IS 742, the panel 3 requested Shri Sandeep Tandon to draft the revised standard by modifying ISO 15201 (word file is attached herewith)



ISO 15201 (1).docx

taking assistance from ASTM B1013-22 and ASTM B86-22 and by incorporating the HF alloys in the format similar to that of IS 713 draft within a week and submit the same to member secretary. The minutes of 3rd Panel meeting is enclosed below :



minutes of 3rd panel
meeting.docx

		<p>)Zinc-Aluminum Alloy alloys as an informative Annex with its required chemical composition and properties with a note mentioning that “these alloys does not form an integrate part of the standard and these alloys are not much widely used and currently under research. . The grades given and the properties defined are informative in nature which will later form the part of standard when its considerable commercial use and research is established etc. The panel will submit the draft before 26-june-2023 and will be further discussed in the next panel meeting.</p> <p>3rd Panel meeting of Panel 2: The panel 2 in its 3rd meeting held on 13 June 2023, after detailed deliberation on the recommendations of Panel-3 requested to MS that on receipt of the drafts from panel 3, a combined panel meeting of panel 2, and panel 3 may be held to finalize the IS 713</p>		<p>As informed by Sandeep Tandon Ji via Whatsapp , he is outside India and will reach India on 10th Nov 2024 and will submit the draft after that. The committee may please deliberate and decide.</p>
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and IS 742 for circulation among the committee members.



MINUTES 2ND
PANEL MEETING PAN

Decision of the committee in its 21st meeting

The committee in its 21st meeting after deliberation requested Panel 3 (Shi Sandeep Tandon, Director, DST Tech Private Limited) to submit the both the revised drafts of IS 713 and IS 742 by modifying ISO 301 and ISO 15201 respectively to Member Secretary within 1 months' time period. .Also the committee requested Shri M Nambi of M/s HZL & Shri K. Sridhar to suggest members related to die castings (Manufacturers Of Die Cating Alloy Ingots, Die Castings And Users Of Die Castings) to get them onboard in the panel to also have their point of view in the revision of this standard. The drafts so finalized in the panel meeting shall be sent for WC for a period of two month. In case no

		<p>comments received/comments received are editorial in nature send it for printing</p> <p>Action taken:</p> <p>Accordingly as per the decision of the committee the revised draft was submitted by Dr. Rahul Sharma of M/s International Zinc Association and Shi Sandeep Tandon, of M/s DST Tech Private Limited vide mail dated 13-07-2023 attached below .It is to inform to the committee that the draft submitted is more or less same as that of ISO 301except the informative annex on HF alloy. Hence it is proposed to adopt ISO in total and incorporate the informative annex as an additional feature or we could revise the standard as per ISO 713, also we have adopted ISO 10081 for sampling zinc and zinc alloys which may be directly referred for sampling. Further we have adopted ISO 3815-1:2005 Zinc and zinc alloys — Part 1: Analysis of solid samples by optical emission spectrometry</p>		
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which gives the sampling procedure for solid OES. For wet analysis we can refer to various parts of IS 2600 .Further it is to inform to the committee that cooption request was send to the organization M/s Sundaram Dyena Cast Pvt Ltd dealing with die casting to induct them into the panel 3 to also have their views on this revision vide mail dated 15th September 2023. However reply is awaited.



Email IS 713.pdf



IS 713 draft 1.docx

Decision taken by the committee in its 22nd meetings:

The committee in its meeting after deliberation requested member secretary to write a letter for cooption once again to M/s Sundaram Dyena Cast Pvt Ltd. Upon the receipt of nominations, recommendations of the panel shall be sought that is whether to adopt ISO 301 in case of

		<p>IS 713 and ISO 15201 in case of IS 742 directly or to revise existing Indian Standard taking assistance from ISO standard. In case the indigenous standard are desired, the committee requested the panel to submit the same before next committee meeting.</p> <p>Action taken:</p> <p>Accordingly as per the decision of the committee a letter for co-option was sent once again to M/s Sundaram Dyena Cast Pvt Ltd via mail dated 19th April 2024.However no reply was received.</p>		
2	<p>IS 742 : 1981 Specification for zinc base alloy die castings (Second Revision)</p>	<p>The committee in its 20th meeting after detailed deliberations decided to constitute the panel-3 consisting of :</p> <ol style="list-style-type: none"> 1. DST Industries (Details of point of contact to be given by Dr. Rahul Sharma) 2. Shri M. Nambi 	<p>-----DO-----</p>	<p>-----DO-----</p>

		<p>3. Dr. Rahul Sharma (Panel Convener)</p> <p>The committee requested the panel to review the standard and submit their recommendations/revised draft to the committee till 31st December 2022.</p> <p>Action Taken:</p> <p>1st Panel meeting of Panel-3:</p> <p>1. The panel3 for die casting in its 1st meeting held on 8th May 2023, after detailed deliberation recommended to include the different grades of Zinc alloys which are currently not present in 713 and IS 742 from ISO 301 and ISO 15201 respectively or modify the ISO as per our requirements. Also it was recommended to incorporate (HF) Zinc-Aluminum Alloy alloys as an informative Annex with its required chemical</p>		
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composition and properties with a note mentioning that “these alloys does not form an integrate part of the standard and these alloys are not much widely used and currently under research. The grades given and the properties defined are informative in nature which will later form the part of standard when its considerable commercial use and research is established etc”.**The draft so formulated shall be discussed further in the next panel meeting.** The minutes of the panel meeting are enclosed below:



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2. Also it is recommended to include more members in the panel related to alloy ingots and die castings. It was requested to Shri Nambi Ji to provide the name and details

of the important stakeholder and get them on board in the next panel meeting.

3. It was also requested to the member secretary to provide the word documents of ISO 15201 and ISO 301 so that the same can be edited.

4. The panel further discussed regarding the formulation of standard in the field of Continuous Galvanizing Grade (CGG) Zinc Alloys for Hot-Dip Galvanizing and it was put forward that following are the important stakeholders in the formulation of the standard:

- A. Tata steel
- B. JSW
- C. POSCO
- D. SAIL

The standards for GALAFAN, ZINC-AL-Mg, and Zinc-Al alloys for hot dip coatings may also be taken into the consideration at later stages.

		<p>Action taken: Accordingly the word documents of ISO 15201 and ISO 301 was shared with the panel members vide mail dated 06- June -2023 to draft/modify the standards and submit it to member secretary before 26-june 2023. Shi Sandeep Tandon, Director, DST Tech Private Limited vid email dated 07-June 2023 assured to give both the drafts of ISO 301 and ISO 15201 by 22-June 2023. However no drafts were recieved.</p> <p>Final status/recommendations of Panel:</p> <p>A. The panel recommended to modify ISO 301 and ISO 15201 and submit the modified drafts by 26 June 2023.</p> <p>B. The drafts are awaited.</p> <p>Decision of the committee in its 21st meeting:</p>		
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		<p>The committee in its 21st meeting after deliberation requested Panel 3 (Shi Sandeep Tandon, Director, DST Tech Private Limited) to submit the both the revised drafts of IS 713 and IS 742 by modifying ISO 301 and ISO 15201 respectively to Member Secretary within 1 months' time period. .Also the committee requested Shri M Nambi of M/s HZL & Shri K. Sridhar to suggest members related to die castings (Manufacturers Of Die Cating Alloy Ingots, Die Castings And Users Of Die Castings) to get them onboard in the panel to also have their point of view in the revision of this standard. The drafts so finalized in the panel meeting shall be sent for WC for a period of two month. In case no comments received/comments received are editorial in nature send it for printing.</p>		
3	Formulation of indigenous	<p>During the 21st meeting, brief presentation on Continuous Galvanizing Grade (CGG) Zinc</p>	<p>The committee once again requested Shri Himmat Hadiya of M/s Hindustan Zinc Limited,</p>	<p>Shri Himmat Hadiya of M/s Hindustan Zinc Limited, Udaipur was requested to</p>

	<p>standard on Continuous Galvanizing Grade (CGG) Zinc Alloys for Hot-Dip Galvanizing of Sheet Steel.</p>	<p>Alloys for Hot-Dip Galvanizing of Sheet Steel was given by Shri M. Nambi, In his presentation he addressed that while importing the zinc for galvanizing, the importers follow ASTM standard and the domestic manufactures supply zinc as agreed between purchaser and manufacturer so we need one standard to follow for manufacturing and supply of zinc for galvanizing. Hence he proposed to formulate new standard as a small R&D project on Continuous Galvanizing Grade (CGG) Zinc Alloys for Hot-Dip Galvanizing. The committee after deliberation finalized to formulate new standard on Continuous Galvanizing Grade (CGG) Zinc Alloys under R&D project and decided to form a new panel (namely Panel-6 For formulating news standard on CCG Zinc alloys) consisting of below members with Shri M Nambi of M/s HZL, Udaipur as the project leader/Convener. The committee further requested Nambi</p>	<p>Udaipur to share the proper details of the relevant persons of the organizations M/s Tata Steel, M/s JSW Steel, M/s POSCO, M/s SAIL, M/s Nippon Steel and M/s NML to the Member Secretary to be contacted to get the nominations of the expert/member to get them onboard in the panel-2 and not to create any new Panel for the same as the panel is having the desired composition for formulating this standard.</p>	<p>share the proper details of the relevant persons of the organizations M/s Tata Steel, M/s JSW Steel, M/s POSCO, M/s SAIL, M/s Nippon Steel to the Member Secretary to be contacted to get the nominations of the expert/member to get them onboard in the Panel-2 for formulation of new standard on CGG alloys. However, the reply is awaited.</p> <p>It is further proposed to committee that a separate working group may be created (members will be nominated by Panel Itself) under this Panel which can be assigned the task of drafting the final draft standard on CGG Zinc alloys ingots by reviewing the report submitted by BIS Intern and by taking assistance from relevant international standards like ASTM B852 and keeping in view the Indian</p>
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		<p>Ji to share the proper details of below organization and the relevant persons to the Member Secretary of the below organizations to be contacted for getting the nominations and inducting them into the panel.</p> <p>M/s Tata Steel M/s JSW Steel M/s POSCO M/s SAIL M/s Nippon Steel M/s NML</p> <p>Action taken :</p> <p>As per the decision of the committee he was requested to share the proper details of the organization mentioned above and the relevant persons to be contacted for getting the nominations and inducting them into the panel to the Member Secretary. But as he left the organization no reply was received from him.</p>		<p>industry requirements. The other standards on ZAM, Galfan, Zn-Alloy Ingots Standards may also be taken into formulation at later stage.</p> <p>The committee may please deliberate and decide.</p>
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		<p>Decision of the committee in its 22nd meeting:</p> <p>The committee in its 22nd meeting after deliberation requested Shri Himmat Hadiya of M/s Hindustan Zinc Limited, Udaipur to share the proper details of the relevant persons of the organizations M/s Tata Steel, M/s JSW Steel, M/s POSCO, M/s SAIL, M/s Nippon Steel and M/s NML to the Member Secretary to be contacted for getting the nominations and to form a panel (namely Panel-7 For formulating new standard on CCG Zinc alloys for Hot-Dip Galvanizing of Sheet Steel).</p> <p>Action taken:</p> <p>Accordingly as per the decision of the committee Shri Himmat Hadiya sir was requested to share the proper details of the relevant persons of the organizations M/s Tata Steel, M/s JSW Steel, M/s POSCO, M/s SAIL, M/s Nippon Steel and M/s NML to the Member</p>		
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		<p>Secretary to be contacted for getting the nominations and to form a panel via mail dated 24th April 2024.</p> <p>However the reply was awaited.</p>		
4	<p>14688:1999 “Lead - Antimony alloy bricks for radiation shielding – Specification ”</p>	<p>The committee in its 21st meeting after deliberation decided to discuss it in the next committee meeting.</p> <p>Decision of the committee in its 22nd meeting: The committee agreed to the request from Shri Tarush Jain of M/s Saru Smelting Private Limited, Meerut during the meeting to contribute in the review of IS 14688:1999 “Lead - Antimony alloy bricks for radiation shielding - Specification to induct them into panel 1 and decided to allocate him the ARP for review of IS 14688.</p> <p>Action taken:</p>	<p>The committee noted the information given in <u>Annexure-2 SI No 8</u> of the agenda of the meeting regarding the revision of IS 14688 and after deliberation requested to Shri Tarush Jain of M/s Saru Smelting Private Limited, Meerut to submit the revised draft of IS 14688 to member secretary before the next committee meeting. The draft so received will be discussed in the next committee meeting.</p>	<p>The revised draft of IS 14688 along with the ARP report is awaited from Shri Tarush Jain of M/s Saru Smelting Private Limited, Meerut.</p> <p>The committee may please deliberate and decide.</p>

		<p>As per the decision of the committee in its previous (22nd) meeting it is to inform to the committee that Shri Tarush Jain of M/s Saru Smelting Private Limited, Meerut is inducted into panel 1 and also the ARP for the review of IS 14688:1999 is allocated to him and the relevant ISO and international standards were shared with him vide email dated 6th May 2024 on his request. The details of such standards and the mail is given below. The recommendation/revised draft was however awaited.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  ISO 9404-1;1991 ed.1 - id.17102 PubImage_600_PDF_doc </div> <div style="text-align: center;">  ISO_7212_1986(E)-I </div> </div> <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 10px;"> <div style="text-align: center;">  Email to tarush jain.pdf </div> <div style="text-align: center;">  _tmp_1715319704.p df </div> </div>		
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Item 4 DRAFT STANDARDS/AMENDMENTS FOR FINALIZATION

The Actions taken on the Draft Standards/Amendments that were finalized in its previous meeting is given below:

SI No.	Draft Indian Standard / Amendment	Decision of the Committee in its previous meetings and Action taken	Decision of the committee in its previous meeting	Action taken
1.	<p>IS 1921: 2005 Flux cored solder wire – Specification (Second Revision)</p>	<p>The committee while deliberating over the representation of solid solder wire and Flux cored solder wire manufacturers requested Shri Vivek Noronha Jee of M/s Southern Metals and Shri Vishal Kothari Jee of M/s Khosla Engineering to provide the details of the manufacturers and users to induct them into the new panel for solders for revising IS 1921 and IS 11516. However no inputs were received from them.</p> <p>Decision of the committee in its 22nd meeting:</p> <p>The committee in its 22nd meeting held on 10th November 2023 after deliberation decided to formulate the Panel 6 which will discuss whether to amend Indian Standard 1921:2005 as of now (which covers only lead end flux cored solder wire) to cover lead free</p>	<p>The committee noted the information given <u>in Item 3, SI No. 6 of the Agenda</u> of the meeting and after deliberation requested member secretary to modify the draft finalized by panel 6 as per IS 12 and P- circulate the revised draft among the committee members for a period of 21 days for their comments. The committee further decided that and if no comments/comments received are editorial in nature the same shall be sent for Wide Circulation for a period of 2 months.</p>	<p>Accordingly, as per the decision of the committee in its previous meeting the revised draft enclosed below was sent for P circulation on 11 June 2024 for a period of 21 days and comments were received from 4 committee members in favor of the draft</p> <p>Since, no comments were received against the draft the draft enclosed below was sent for wide Circulation for a period of two months on 08 August 2024. Comments were received from Shri Aditya Das (Sc-E/H(HRD)) of BIS regarding the test frequencies, alloy grade designations, reference to</p>

grades by referring directly to ISO 9453 :2020 “Soft solder alloys Chemical compositions and forms” which is presently under revision in the ISO, also which is presently under adoption and harmonizing our Indian Standard IS 193:2000 “Soft solder - Specification (Fifth Revision)” under dual numbering system with ISO 9453:2020 and subsequently revise Indian Standard IS 1921 as per ISO 9453 :2020 “Soft solder alloys Chemical compositions and forms” and ISO 12224 (Part 1 and Part 2) “Solder wire, solid and flux cored — Specification and test methods”.

The composition of the panel as per the decision of the committee is given below :

- 1) Shri V. S. Prasanna of M/s Macdermid Alpha Electronic Solutions India Private Limited, Chennai (Convener)
- 2) Shri Francis Joseph of M/s Hiflo Solders Private Limited , Chennai

test methods for halogen content on mainly.



4th PANEL MEETING OF Mtd09: Panel 6:

The comments were discussed at length and following changes/recommendations were provided.



The Panel also modified the draft, and the changes are highlighted in red in the revised draft in the minutes of the 4th Panel meeting enclosed below.



	<p>3) Shri Ramesh of M/s BT Solders Private Limited, Bengaluru</p> <p>4) Shri Vishal Kothari of M/s Kothari Metsol Pvt. Ltd, Pune</p> <p>5) Shri Arun Gupta of M/s Saru Smelting Private Limited, Meerut</p> <p>6) Shri Aadil J. Bavaadam of M/s Persang Alloy Industries Pvt. Ltd. Vadodara.</p> <p>Action taken:</p> <p>Decision of the 1st panel meeting: The panel in its meeting after deliberation decided to review the amendment to IS 1921 : 2005 enclosed below prepared by the member secretary, and requested Shri Prasanna Somasundaram of M/s Macdermid Alpha Electronic Solutions India Private Limited, Chennai to modify the draft amendment.</p> <p> amendment No 3 MS.docx</p> <p>The panel further decided to undertake the full revision of the standard</p>		<p>Subsequently, approval for acceptance of recommendation of Panel 6 and the approval for Wide Circulation of draft again for 1 month was obtained from the committee vide email dated 21 October 2024. After the approval, the draft enclosed at below was finally sent for wide circulation on 28 October 2024 for a period of 30 days inviting comments from public domain till 28 Nov 2024. So far, no comments have been received.</p> <p></p> <p>The committee may please deliberate and decide.</p>
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simultaneously and requested Shri Vishal Kothari of M/s Kothari Metsol Private Limited , Pune to prepare/draft the classification and characterization of fluxes and the test methods required for their characterization and the submit the same to BIS by 5th January 2024 after discussing and finalizing it with other panel members .

Kindly refer to the minutes of 1st panel meeting for more details below:



Minutes of 1st
panel meeting (1).doc

Decision of the 2nd panel meeting:

The panel requested Adil Ji to review the test methods on SIR, ECM and include a simple internationally well accepted suitable test method like ISO9455-17 for same and also review Halide content test methods given in the draft along with the other requirements and submit a final draft to BIS for discussion.

The draft enclosed below was received from Persang Alloys Industries Pvt. Ltd. Vadodara and the same was circulated among the panel members for their review and comments.

Kindly refer to the minutes of 2nd meeting for more details given below:



Minutes of 2nd panel Meeting of IS 1921 04-03-2024
Draft after 2nd panel

Decision of the 3rd panel meeting:

The 3rd panel meeting was held on 17-05-2024 in physical mode at Manak Bhawan BIS New Delhi to discuss and finalize the draft. The Panel finalized the draft given below which was received from Persang Alloys in which the test methods pertaining to SIR , ECM and Halide Content were included. Refer to the minutes for more





Minutes of 3RD panel Meeting of
details.



draft after 3rd pnel
meeting.docx

Further while deliberating on the frequency of tests to be performed decided that a clause similar to IS 814 which classifies the various test methods in terms of their frequencies etc, shall be inserted into the main draft as some of the test methods like SIR and ECM are very complex methods and takes a minimum of 7 days to perform and also the equipment are not readily available with industry. These test methods are not a routine regular test which can be performed but they are done at the development of the flux at the initial stage. Accordingly the following recommendations on test frequencies were received from the Panel convener vide email dated 24 May 2024 after discussion with other

		panel   Gmail - Solder Wire Solid- Flux Cored Test Requirements- Solder Wire-Test Re	members.		
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Item 5 REVIEW OF PRE 2000 STANDARDS

It is to inform to the committee that a total of 37 pre 2000 standards were taken for review from mid-2022 onwards of MTD 9.

Total revised standard: 17 (5 Base metal standards merged into 2 standards for Tin and Zinc)

Withdrawn standards: 1

Transferred to relevant committee: 3

Archived and reaffirmed: 8 (Will be taken for review at later stage when appropriate shown below in yellow highlighted color- 2 standards for bearing alloys will be taken in next AAP, 1 standard of sampling lead and lead alloys to be taken in next years AAP). The details of stakeholders related to bearing alloys.



Under revision: 3 (IS 713, IS 742, IS 114688)

Under R&D: 1

Pending: 4 (2 Molybdenum, 1 Nb-Ti super conducting wire and 1 for general sampling) –Sampling will be taken in next AAP



The Committee may please note

Item 6 NEW SUBJECTS FOR STANDARDIZATION

The formulation of new standards on below subjects were approved by the committee in its last meeting and is to be approved by MTDC in its meeting on 19 Nov 2024. Also, As per the decision of the committee in its previous meeting with respect to the formulation of the new indigenous standard mentioned below was assigned to panel - 6.

1. New Standard on Classification and characterization of fluxes used in solders.
2. New Standard on Solder Paste-Specifications

The solder paste standard was allocated to the BIS Intern Shri Sachin Kumar from NIT Rourkela. He has submitted the below reports and a rough draft on solder pastes.

In the report it has been recommended that almost all the industries he has visited are following the IPC standards which is almost identical to IEC except the SIR testing in which JIS standards are followed. He has also provide recommendations on adoption of IEC standard for soldering fluxes.

The work has already been allocated to the panel. But, it is now proposed to committee to create a Working Group of 2-3 members (members will be nominated by panel) under the panel 6 who will draft the standard/ submit recommendations on the adoption/modification of IEC standard for solder pastes and flux classification by studying the reports submitted by BIS intern and relevant international standards like IPC, IEC JIS etc and also considering the current industrial practices which will then be discussed in the Panel.

The Committee may please deliberate and decide

Item 7 R&D PROJECTS FOR ESTABLISHMENT/REVISION OF INDIAN STANDARDS

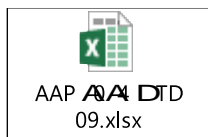
Study of grades, chemical, mechanical and physical properties and applications of Pure Molybdenum and Molybdenum alloy plate, sheet, strip, and foil.



Three proposals were received on the above R&D project from IIT Jammu, IIT Patna and NIT Trichi. The projects were evaluated by REC first for technical evaluation in which IIT Patna didn't qualify the minimum passing marks. Subsequently after the financial proposals were opened, the project was allocated to Prof Kumaresh Babu , NIT Trichi with the approved budget of 9.667 Lacs. The First installment of 2,60,929/= has been made and the second installment after the midtime review. It is proposed to committee to constitute a working group who will do the review of the progress made. Based on the progress of the project the remaining funding can be released.

The Committee may please note and formulate a working group to review the progress of R&D allotted.

Item 8 The Rolling Annual Action Plan for the year 2024-2025



Total standards under revision/archive/reaffirmation = 8

Due for review =0

No of reaffirmations = 0

No. of archive=0

withdraw = 0

Total no. of revisions= 8 (2 PUBLISHED, 1 UNDER WC , 2 UNDER WORKING DRAFT STAGE, 1 archives, 1 under review)

No. of New Subjects =3 (Under consideration with Panel)

1. Tentative Annual Calendar of Technical Committee Meetings.

Quarterly meeting schedule 2023-24											
April ,2024	May ,2024	June ,2024	July ,2024	August ,2024	September ,2024	October ,2024	November ,2024	December ,2024	January ,2025	February ,2025	March ,2025

-	27 th May 2024	-	-	-	-		19 th November 2024	-	-	28 th February 2025	-
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[ANNEXURE-1](#)

Scope and Composition of Ores and Feed Stock for Non-Ferrous Industry, their Metals/ Alloys and Products (Excluding Aluminum and Copper) Sectional Committee, MTD09

SCOPE: Standardization in the field of Non-Ferrous Ores and other feed stock for Non-Ferrous Industry and Standardization in the field of Non-Ferrous Metals, their alloys and products. (Excluding Standardization in the field of Ores and Feed Stock for Aluminium and Copper Industry and their Metals, Alloys and Products)

ISO Liaison - To co-ordinate with the work of ISO TC- 18 - MTD 9 (P): Zinc and Zinc Alloys

Chairman: Dr. Abhilash, Principal Scientist & Assistant Professor (CSIR), CSIR -NML, Jamshedpur

Previous Meetings:

Meeting	Date	Place
Twentyfirst,21 st	26 th June,2023	Hybrid type (Physical+virtual)
Twenty second,22 nd	10 th November, 2023	Hybrid type (Physical+virtual)
Twenty third, 23 rd	27 May, 2024	Hybrid type (Physical+virtual)

Composition of the Sectional Committee:

SI No.	Organization	Representative Principal/Alternate	21st	22ⁿ d	23rd	Meetings Attended
1.	Arya Alloys Private Limited, New Delhi	Shri Amrendra K Jha	Y	Y	Y	3/3
2.	B.T. Solders Pvt Ltd., Bangalore	Shri S. Ramesh	N	Y	Y	2/3
3.	Bhabha Atomic Research Centre , Mumbai	Dr. Dhruva Kumar Singh (Principal) Dr. Bhaskar Paul (Alternate)	Y	Y	N	2/3

		Shri Rajak Syed(Young Professional)				
4.	Bombay Non Ferrous Metals Association Limited, Mumbai	Shri Sandeep Vakharia (Principal)	-	-	Y	1/1
5.	CSIR - Central Electrochemical Research Institute, Karaikudi	Dr. C. Naveen Kumar (Principal) Dr. M. Jayakuma (Alternate 1) Dr. N. Rajasekaran (Alternate 2)	Y	Y	N	2/3
6.	CSIR -National Metallurgical Laboratory, Jamshedpur	Dr. Pratima Meshram (Alternate)	Y	Y	N	2/3
7.	Directorate General of Quality Assurance, Ministry of Defense, Ichapur <u>(Fresh nomination received on 30-11-2023)</u>	Shri Rupesh Banait (Principal) Shri E Suman Kumar (Alternate)	Y	Y	Y	3/3
8.	Eveready Industries India Ltd, Kolkata	Shri G. Prahalathan (Principal) Shri Senthil R Pandian (Alternate)	Y	Y	Y	3/3

9.	Exide Industries Ltd., Kolkata	Dr. Sagar Sengupta (Principal) Mr. Surajit Chandra Deb (Alternate)	N	Y	Y	2/3
10.	Hindustan Zinc Ltd, Udaipur	Mr. Himmat Hadiya (Principal) Ms. Maninee Manasmita Nayak (Alternate)	Y	Y	Y	3/3
11.	Indian Bureau of Mines, Nagpur	Dr. D.R Kanungo (Principal) Dr. Jyoti Shrivastava (Alternate)	N	Y	Y	2/3
12.	Indian Institute of Technology, Roorkee	Prof. Nikhil Dhawan (Principal) Prof. Ujjwal Prakash (Alternate)	N	Y	Y	2/3
13.	India Lead Zinc Development Association, New Delhi	Mr. K. Sridhar (Principal) Mr. L. Pugazhenty (Alternate)	Y	Y	Y	3/3
14.	Indian Rare Earths Ltd, Mumbai	Shri D Singh (Principal) Shri B R Mishra (Alternate)	Y	Y	Y	3/3
15.	Indiana Gratings Private Limited, Pune	Shri Sandesh.A.Nannaware (Principal) Shri Sanjay Bharne (Alternate)	-	-	N	0/1

16.	Kothari Metsol Pvt. Ltd, Pune	Shri Vishal Kothari	N	Y	Y	2/3
17.	MSME Testing Centre, New Delhi	Sh. D.D.Gajbhiye (Principal Member) Sh. Gyarsi Prasad (Alternate Member)	N	Y	Y	2/3
18.	Nuclear Fuel Complex, Hyderabad	Shri Vijay Kaushik (Principal) Smt. G Samyuktha(Alternate)	Y	Y	N	3/3
19.	Phoenix Industries Limited, Masat	Mr. Nitin Salvi (Principal) Mr. Amit Sangai (Alternate)	-	-	-	0/0
20.	National Test House, Kolkata	Shri D. Rajagopala Rao (Principal Member) Shri Suhas D Pingale (Alternate Member)	Y	Y	Y	3/3
21.	Naval Materials Research Laboratory, Ambarnath, Distt. Thane, Maharashtra.	Mr. V.P. Deshmukh (Principal) Dr. A. Gourav Rao (Alternate)	N	Y	N	1/3

22.	Power Grid Corporation of India, Gurugram	Shri K. N. M. Rao (Principal) Dr. Satish Kumar (Alternate)	Y	Y	Y	3/3
23.	Research Designs and Standards Organization (RDSO), Lucknow <u>(Fresh nomination received on 8- 11-2023)</u>	Shri. R. K. Vijay (Principal) Shri. Anoop Singh Dagur (Alternate)	N	Y	Y	2/3
24.	RITES Limited, Gurugram	Shri V.K. Dwiwedi (Principal) Shri Sandeep Gupta (Alternate)	N	Y	N	1/3
25.	Saru Smelting Pvt Ltd., Meerut	Shri Shashank Jain (Principal) Shri Arun Gupta (Alternate) Shri Tarush Jain (Young Professional)	N	Y	Y	2/3
26.	Southern Metals & Alloys Private Limited, Mumbai	Shri Vivek Noronha (Principal) Shri Vinod Noronha(Alternate)	Y	Y	Y	3/3
27.	The Tinsplate Company of India Limited, Jamshedpur	Dr. Sourajyoti Dey (Principal) Shri Subrata Sadhu(Alternate)	Y	Y	N	2/3
28.	National Mineral Development Corporation, Hyderabad	Dr. G. Venkateswara Rao (Principal)	Y	Y	Y	3/3

29.	Nile Limited, Hyderabad	Shri KHK Srinivas (Principal) Shri S Mahesh Babu (Alternate)	Y	Y	N	2/3
30.	IZA India (International Zinc Association), New Delhi	Dr Rahul Sharma (Principal) Dr Kenneth de Souza (Alternate)	N	Y	Y	2/3