For BIS Use Only

भारतीय मानक ब्यूरो
BUREAU OF INDIAN STANDARDS

AGENDA

Name of the Committee	No. of Meeting	Day	Date	Time	Venue
Ores and Feedstock for Iron and Steel Industry Sectional Committee, MTD-13	25	Friday	20th September 2024	10:30 am	Hybrid Meeting Venue:- Online VC Meeting URL: https://bismanak.webex.com/bismanak/j.php?MTID=mfd32f9c69087e24ea143e7725268a538 Meeting Password: MTD13
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/1ItUikQ_caAlt4BS8fqxGsoJ5dJHAkT5Q/edit?usp=sharing&ouid=102552629546669138023&rtpof=true&sd=true					

Chairperson: Shri Rajan Kumar

Member Secretary: Shri Saaqib Raahi

ITEM 0 GENERAL

0.1 Inaugural address by Head of Metallurgical Engineering Department.

0.2 Opening Remarks by the Chairperson.

ITEM 1 CONFIRMATION OF MINUTES OF LAST MEETING

1.1 The minutes of the **24th** meeting of Ores and Feedstock for Iron and Steel Industry Sectional Committee, MTD-13 held on **11th August 2023** via Hybrid mode (through WebEx for VC) were circulated vide our letter No. MTD-13/A-2.24 dated 19.09.2023 through BIS portal. However no comments were received till the last date of comments.

The committee may formally approve the minutes of the previous meeting.

ITEM 2 SCOPE AND COMPOSITION OF SECTIONAL COMMITTEE, MTD 13

2.1 **Review of 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.

2.2 **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.

2.3 **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. 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.

2.4 **Attendance of members in the committee** - If a member fails to attend two consecutive meetings of the Sectional Committee, communication should be sent to him by the Head of the Department concerned seeking his cooperation in the functioning of the Committee. If the member concerned fails to attend the Sectional Committee meeting even after the communication was sent, his/her membership shall be liable to be terminated. 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 Standardization Ecosystem in the Country:


office order (1).pdf


Declaration New.docx

a) 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.

b) 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 draft deals which is not related to his domain knowledge, he should have it mentioned in his comment.

c) 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.

d) The quorum for the TC meeting shall be 10 or one third of the members, whichever is higher.

e) 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 of technical committee. Accordingly it is requested to the committee members to send the same to the BIS as soon as possible who have not yet submitted.

2.6 Composition of the panels

2.6.1 Composition of previously constituted panels

i) MTD 13 : P2 - Review of new Draft document on Iron Ore Pellets –Specification

Sl No.	Organization	Member Name	Member Email	Member Phone
1.	National Mineral Development Corporation, Hyderabad	Rajan Kumar (**Convener)**	rajankr@nmdc.co.in	9490760017
		Vibhuti Roshan	vibhutiroshan@nmdc.co.in	9490760042
2.	CSIR - National Metallurgical	Dr Manoj Kumar Mohanta	mohanta@nmlindia.org	9431382068

	Laboratory, Jamshedpur			
3.	Essar Steel India Limited, Mumbai	Srinivasa Satya Prasad Koduri	satyaprasad.koduri@essar.com	9885188011
4.	JSW Steel Limited, Bellary	Shri C. R. Pramod Kumar	pramodkumar.chittor@jsw.in	9480693875
5.	Jindal Steel and Power Limited, Raigarh	Shri Chakkirala N. V. Prasad	chakkirala.prasad@jindalsteelodisha.com	
6.	Kudremukh Iron Ore Company Limited, Bengaluru	P. Palani	magmp@kioclltd.com	9449861685
		M. A. Salam	msmpt@kioclltd.com	9449871538
7.	Pellet Manufacturers Association of India, New Delhi	Shri. Depak Bhatnagar	deepas1949@gmail.com	9910018504
8.	Steel Authority of India, Centre for Engineering and Technology, Ranchi	Shri Brajesh Kumar	brajesh.kumar@sail.in	8986880534
		Dilip Kumar Jagani	dk.jagani@sail.in	8986880523

ii) MTD 13 : P3 - Panel to review IS 2109 "Methods of sampling dolomite, limestone and other allied materials (First Revision)" and Formulation of new standard on measurement of angle of repose.

Sl No.	Organization	Member Name	Member Email	Member Phone
1.	Mitra SK Private Limited, Kolkata	Shri P.L. Bose (Convener)	plbose@mitrask.co.in	9007002750
2.	CSIR - National Metallurgical Laboratory, Jamshedpur	Dr Manoj Kumar Mohanta	mohanta@nmlindia.org	9431382068
3.	National Mineral Development Corporation, Hyderabad	Shri Vibhuti Roshan	vibhutiroshan@nmdc.co.in	9490760042

Since IS 2109 was dealt by **MTD 13:P6 and was handled by single person, this panel may made a working group under Panel 3 with the title of "Formulation of new standard on angle of repose".**

iii) MTD 13 : P4 - Panel for the revision of IS 14795 "Method for determination of clustering of iron oxide feedstock for direct reduction processes.

Sl No.	Organization	Member Name	Member Email	Member Phone

1	Arcelor Mittal and Nippon Steel India Limited, Vishakapatnam	Dr. Atanu Ranjan Ojha	atanu.ojha@amns.in	7381007054
		CH V S ND Hariprasad	chvsnd.hariprasad@amns.in	7381009534
2	CSIR - National Metallurgical Laboratory, Jamshedpur	Dr Manoj Kumar Mohanta	mohanta@nmlindia.org	9431382068
3	JSW Steel Limited, Mumbai	Shri P. C. Mahapatra	pradipta.mahapatra@jsw.in	9449598259
		Shri N. Sairam Krishna	sairama.krishna@jsw.in	9994895146
		Shri C. R. Pramod Kumar	pramodkumar.chittor@jsw.in	9480693875
4	Jindal Stainless Limited, New Delhi	Shri Ashish Goyal	ashish.goyal@jindalstainless.com	9717444656
		Shri Suyash Trivedi	suyash.trivedi@jshl.in	8053782777
5	Kudremukh Iron Ore Company Limited, Bengaluru	Shri P. Palani	magmp@kioclltd.com	9449861685
		M. A. Salam	msmpt@kioclltd.com	9449871538
6	National Mineral Development Corporation, Hyderabad	Shri Vibhuti Roshan	vibhutiroshan@nmdc.co.in	9490760042
7	Pellet Manufacturers Association of India, New Delhi	Shri. Depak Bhatnagar	deepas1949@gmail.com	9910018504
		Shri Vijay Dwivedi	pmaioffice@pmai.co.in	

Note - The Panel had compared IS 14795 and ISO 11256 : 2015 Iron ore pellets for shaft direct-reduction feedstocks — Determination of the clustering index and had recommended to adopt the ISO 11256 and revise the Indian standard as the ISO standard procedure is more elaborated test method.

iv) MTD 13 : P6 - Panel for the revision of IS 2109, 2245 & 8562

Sl No.	Organization	Member Name	Member Email	Member Phone
1	Mitra SK Private Limited, Kolkata	P.L. Bose	plbose@mitrask.co.in	9007002750

Since the panel is dealt by single person and the drafts are to be sent in WC, the committee is requested to disband the panel.

2.6.2 It is proposed to disband/reconstitute the panels on the basis of classification of standards into: **Iron Ore and Processed Ores** (Sampling/Physical Test Methods/Specification); **DRI/HBI/CBI** (Raw material Specification/physical test methods of DRI and raw materials/Sampling of HBI); **Other Raw materials**(Specification/Sampling) ; **Mineralogy and other panels and working groups as and when required**.

It is being proposed to recompose the panel as mentioned below. The panels can create n number of working groups not necessarily the members shall be from committee but the convenor for those working groups shall be from the Panel itself who can report their results/recommendations etc to the main panel:

1) PANEL ON TERMINOLOGY:

Panel 1: Panel on Terminology of Iron Ore (Lump and processed ore) and DRI.

2) PANELS FOR LUMP IRON ORE AND PROCESSED IRON ORE (FEEDSTOCK FOR DRI AND BLAST FURNACE):

Panel 2: Panel for the sampling of feed stock for blast furnace and DRI — Lump ore; processed ore (sinter and pellets) and slurries.

WG-1 For reviewing ISO 3084 (QUALITY VARIATION) and ISO 3085 (PERCISION OF SAMPLING) for adoption and also nominating all of these experts from this panel in ISO WG-5 for revision of ISO 3084 and for revision of ISO 3085 at ISO level.

WG-2 For revision of ISO 16742: 2014 (Sampling of Slurries) already adopted by India (BIS) as IS 16750: 2018 and nominate the experts in ISO Ballot.

WG-3 **For the review of IS 11284: 1985** "Method Of Rotary Tube Test For Iron Bearing Materials For The Manufacture of Sponge Iron direct Reduced Iron DRI" **vis-à-vis ISO standard ISO 11257:2022** "Iron ores for shaft direct-reduction feedstock's — Determination of the low-temperature reduction-disintegration index and degree of metallization " **and ISO 11258:2015** "Iron ores for shaft direct-reduction feedstock's — Determination of the reducibility index, final degree of reduction and degree of metallization" and nominate the experts in SG 28 after it will be created at ISO for the review of ISO11258 investigation of mass measurement during reduction.

Panel 3: Panel for the Physical test methods of feed stock for blast furnace and DRI in the form of Iron oxides i.e. lump ore and processed ore (sinter and pellets).

Panel 4: Panel for the Classification/specification of lump ore and processed ore (sinter and pellets) for blast furnace.

"MTD 13 : P2 above may be reviewed and recomposed along with the modified scope as given"

3) PANELS FOR DRI/HBI/CBI:

Panel 5: Panel for sampling of Direct reduced iron/ Hot briquetted iron(HBI)/ Cold briquette iron (CBI)

Panel 6: Panel for Physical Test Methods for Direct reduced iron/ Hot briquetted iron(HBI)/ Cold briquette iron (CBI)

"MTD 13 : P4 above may be reviewed and recomposed along with the modified scope as given"

Panel 7: Panel for the specification of raw materials (lump ore/ pellets) for direct reduction processes.

4) PANELS FOR RAW MATERIALS OTHER THAN IRON BEARING MATERIALS SUCH AS DOLOMITE, LIMESTONE, CHROMITE, WOLFRAMITE ETC

Panel 8: Panel for the specification of raw materials other than iron bearing raw materials for use in iron and steel making

Panel 9: Panel for the sampling of raw materials other than sinter and pellets for use in iron and steel making

5) WORKING GROUP FOR MINERALOGY

WG1- Review of IS 11897 "Guidelines for methods to be adopted for identifying the mineralogy of iron oxides; lump ores, sinters and pellets" and IS 12595 "Classification of terminology for exploration of mineral deposits".

The committee may please deliberate and decide

2.6.2.1 Proposed Scope of Work of Panels/WG's

The scope of the work of the Panel so formulated will be:

1. To do comparative analysis of Indian standards visa-vies ISO standards and give recommendations regarding the adoption of ISO standard in the case of not having any Indian standard for the particular subject, harmonizing of our Indian standard with the ISO standard existing on the same subjects and the revision of Indian standard in case of not feasible to adopt ISO standard or to raise views to revise ISO standard as per Indian standard or as per our current industrial practices/requirement and also propose new subjects to ISO from our existing Indian Standards or New subjects.

2. Review of the existing Indian standard and suggest which standard becomes out dated as per our current industrial practices/requirement and needs revision/withdrawal/archive/reaffirmation.

3. To review the ballots received from ISO and give our comments as per the scope of the panel. Further if required or recommended by the panel formulated mentioned above, the working groups under each panel may be formulated in sync with ISO WG's which will assist the corresponding panel for its assigned work.

The committee may please deliberate and decide.

2.6.3 Working Groups/Study Groups/Ad-hoc Groups in ISO

Currently the ISO TC 102/SC1 and SC3 is having following working groups/Study Groups in which work is in progress:

TC/SC	SG/WG	Title	Remark
SC1	WG3	Revision of ISO 3082 (Sampling and sample preparation procedures)	ISO has re-established the working group in 2023 at Tokyo meeting and has decided to start the revision of ISO 3082 particularly wrt comments made by brazil (N 1204, N1213 and presentation by brazil) India had abstained to the move via ballot received in January 2024 which had established 2 working groups WG 3 for ISO 3082 and WG 5 for revision of ISO 3084. It is proposed to nominate at least one expert from the panel 2 constituted as above. **The committee may please deliberate and decide.**
SC1	**WG5**	Revision of ISO 3084 (Iron ores —Experimental methods for evaluation of quality variation)	Ms L Joncew (Brazil) presented a proposal (doc. SC 1 N 1208) for an early revision of ISO 3084 (Iron ores – Experimental methods for evaluation of quality variation) together with a Working Draft for the revision. The delegates present agreed to reestablish WG 5 to conduct the revision with Brazil as the Convenor. Australia, China, Canada, Netherlands, and Sweden agreed to participate in the revision, the target being to complete the revision in 24 months. It is proposed to nominate at least one expert from the panel-2 constituted as above. **The committee may please deliberate and decide.**

SC1	**WG11**	Revision of ISO 16742 ((Iron ores— Sampling of slurries)	The delegates present agreed that comments provided by Brazil in 2019 (doc. SC 1 N1182) on ISO 16742 (Iron ores – Sampling of slurries) need to be taken into account during the forthcoming systematic review of the standard in June 2024. Brazil agreed to submit the comments to the SC 1 Committee Manager for circulation to SC 1 committee members. The delegates present agreed to reestablish WG 11 to conduct the revision with Mr R Novaes (Brazil) as the Convenor. Australia, Netherlands and Sweden agreed to participate in the revision. In view of the same ISO circulated the SR ballot and we are to nominate at least one expert the panels/working groups constituted as above in the WG 11 and comment whether the standard needs to be revised/withdrawn/confirmed. And India (BIS) has adopted this standard. **The committee may please deliberate and decide.**
SC1	**AHG 1 (ISO 3087)**	Experimental study on moisture Determination	The Convener of Study Group SG 8 (Experimental testing for iron ore moisture determination), Dr K Engstrom (Sweden), presented the findings of the international testwork program that had been conducted (doc. SC 1 N 1209), which indicated that there was a small but statistically significant positive bias between drying samples with combined water of 8% and above at 105 ± 5°C for 24 hours and drying the same samples at 105 ± 5°C to constant mass using criteria of less than both 0.05% and 0.025% of their initial mass. Mr S Ishikawa (Japan) presented the results of a Japanese study on an alternative method for **potential future revision of ISO 3087** (doc. SC 1 N 1210) indicating that the moisture content value obtained for samples with combined water content above 8% at a drying temperature of 115°C (not sample temperature but oven temperature) with a 0.05% constant mass criterion is equivalent to the value obtained for drying at 105°C for 24 hours at a sample layer thickness of 10 mm. The delegates present agreed to establish an Ad Hoc Group (AHG1) to further study the Japanese

			results on using an oven temperature of 115°C as a reference method with Mr S Ishikawa (Japan) as the Convenor. Australia, China, Netherlands and Brazil agreed to participate in the work on ores containing more than 8% combined water following the test conditions in ISO/TC 102/SC 1 standards. In response to same ISO had circulated a ballot on call for experts and voted and agreed to participate in the AHG 1 project. Also, we nominated Shri PL Bose of M/s Mitra SK Private Limited, Kolkata. **The committee may please note.**

SC3	SG25 (ISO 8371)	Effect of the heating rate on decrepitation índex determination	The new standard of **ISO 8371** has been published on decrepitation index in 2024. The delegates present agreed to accept the convener´s report of SG25 - Effect of the heating rate for decrepitation index determination, doc. 3 N 1396.The proposed changes were voted and rejected by the subcommittee members. The convener offered to re-evaluate the existing data. An interlaboratory trial with the proposed test conditions is necessary to introduce technical changes in the existing standard. Mr. de Castilho (Brazil) offered to support the design of experiment to fulfil the requirements for the necessary statistical evaluation. Mr Nobutoshi Sakahashi (Japan) is confirmed as the SG convener. Members are Australia, Brazil, Canada, China, Germany, Japan and South Africa. Also the call for experts in April in SG25 was abstained by BIS and no experts were nominated. The committee may nominate the same. **The committee may please deliberate and decide.**
SC3	SG26	Revision of ISO 3271 (Tumbler Test) to evaluate possible inclusion of new products,	BIS had received ballot in April for call on experts a The delegates present agreed to create SG26 – Revision of ISO 3271 to evaluate possible

		such as briquettes and extrudates	inclusion of new products, such as briquettes and extrudates. Mrs Simonny Guachalla (Brazil) is confirmed as the SG convener. Members are Australia, Brazil, Canada, China, Germany, Japan, South Africa and Sweden. A call forexperts shall be conducted by the CM so that members not present may indicate their experts and **BIS had nominated 3 experts** for the same in the ballot on call on experts. **The committee may please note.**
SC3	SG28	Investigation of mass measurement methods in reducibility tests	The delegates present agreed to create SG 28 – Investigation of mass measurement during reduction. The convener is to prepare and conduct a survey on the performance of mass measurement in the reducibility tests. Dr Liming Lu (Australia) is confirmed as the SG convener. Members are Australia,Brazil, Canada, China, Germany, South Africa and Sweden. A call for experts shall be conducted by the CM so that members not present may indicate their experts. **The ISO may soon issue a ballot asking for experts**. Committee may nominate some experts from both DRI and Iron ore panels in a proactive approach. The following ISO standards are involved in mass measurement: • ISO4695 Determination of the reducibility by the rate of reduction index • ISO7215 Determination of the reducibility by the final degree of reduction index • ISO7992 Determination of reduction under load • ISO11258 Determination of the reducibility index, final degree of reduction and degree of metallization **The committee may please deliberate and decide.**

2.6.4 Already nominated experts in ISO TC WG/SG/AHG

Sl No.	Ballot type	ISO Ballot reference	Title	Question Asked	Vote casted and comments given to the ballot received
1.	ISO/TC 102/SC 1 CIB (Date over)	TC102_SC1_AHG1_PP and WS_N1225	TC 102/SC 1/AHG 1_Call for experts In accordance with the resolution 7 of the Tokyo meeting below, the convener created a project plan and work schedule for AHG 1 (N 1225). SC 1 members are invited to actively participate in the project. If you wish to participate, please nominate an expert(s) and provide their email address.	Do you wish to participate actively in the AHG 1 project?	We are agree to participate in the AHG 1 project. Also we nominate Shri PL Bose of M/s Mitra SK Private Limited, Kolkata having mobile no : +91 9007002750 and Email ID: plbose@mitrask.co.in as an expert to participate in this project. **POSTFACTO APPROVAL IS DESIRED FROM THE COMMITTEE.**
2.	ISO TC102 / SC3 CIB	ISO TC102 / SC3 / SG26	- ISO TC102 / SC3 / SG26 – Call for experts – SG26 – Revision of ISO 3271 Iron ores for blast furnace and direct reduction feedstocks – Determination of the tumble –nd abrasion indices to evaluate possible inclusion of new products.		"Yes, and We are nominating 3 experts and their details are enclosed below: 1.Name: Mr Gyanaranjan Pothal Organization- Tata Steel Sponge Iron Joda Phone no- 9238883282 Email-gyanaranjan.pothal@tatasteel.com 2. Name: PL Bose Designation : Executive Director Organization; Mitra S.K. Private Limited Shrachi Centre, 5th Floor, 74B AJC Bose Road, Kolkata 700016, West Bengal, India. Email: plbose@mitrask.co.in Mob: +(91)9007002750 4. Name : Dr Vibhuti Roshan DGM(M.P), NMDC Ltd Email : vibhutiroshan@nmdc.co.in Mobile no: +91-9490760042"

					POSTFACTO APPROVAL IS DESIRED FROM THE COMMITTEE.
3.	ISO/TC 102/SC 1 SR	ISO 4701:2019 (Ed 5)	Iron ores and direct reduced iron — Determination of size distribution by sieving		"Confirm and nominated Name : Mr. P.L. Bose Organization : Mitra SK Private Limited, Kolkata Email : plbose@mitrask.co.in Mobile : 9007002750 Designation : Director" **POSTFACTO APPROVAL IS DESIRED FROM THE COMMITTEE.**

The committee may please note and approve.

2.6.5 ISO Ballots Received

Further we have received following ISO ballots and nominated following members in the ballots, the details of which is given below:

<table>
<tr><th>Sl No.</th><th>Ballot type</th><th>ISO Ballot reference</th><th>Question Asked</th><th>Vote casted and comments given to the ballot received</th></tr>
<tr><td>1</td><td>SR ISO/TC 102/SC 1</td><td>ISO 3085:2019 (Ed 5)
Iron ores — Experimental methods for checking the precision of sampling, sample preparation and measurement

ISO_3085_2019_ed.5_-_id.72160_Publica</td><td>
<table>
<tr><th>No.</th><th>Questions</th><th>Possible Ansers</th></tr>
<tr><td>1</td><td>Recommended action</td><td>Withdraw *
Revise/Amend *
Confirm
Abstain due to lack of consensus
Abstain due to lack of national expert input</td></tr>
<tr><td>2</td><td>Has this document been adopted or is it intended to be adopted in the future as a national standard or other publication?</td><td>Yes *
No *</td></tr>
</table>
</td><td>The committee may please deliberate and decide on the ballot.</td></tr>
</table>

			3	Is the national publication identical to the document or was it modified?	Identical Modified *	
			4	If this document has not been nationally adopted, is it applied or used in your country without national adoption or are products/processes/ services used in your country based on this document?	Yes * No	
			5	Is this document, or its national adoption, referenced in regulations in your country?	Yes * No	
			6	If the committee decides to revise or amend, do you propose an expert and/or project leader for the development of that project?	Yes (name(s) and proposed role(s): expert or project leader) * No	
			(*) A Comment is required for this answer value.			
2.	SR ISO/TC 102/SC 1 WG 11	ISO 16742:2014 (vers 2) Iron ores — Sampling of slurries ISO_16742_2014_ed.1_-_id.57567_Public	----Do----			India (BIS) has adopted this standard. The committee may nominate experts in WG 11 of ISO.

The committee may please deliberate and decide.

ITEM 3 ACTION TAKEN REPORT

4.1 The summary of action taken on the decisions of the previous meeting of MTD-13 are as follows:

Sl No.	Subject	Decision of the committee in its previous meetings /Action taken	Decisions taken by the committee in its previous meeting	Action taken
1)	Revision of **IS 8562:1977** Methods of sampling chrome ore.	The committee in its 19th meeting held on 6 January 2017 requested Shri P.L.Bose of M/s Mitra.S.K.Pvt.Ltd. and Dr. A. K. Mukherjee of M/s Tata Steel Limited to prepare the document for the revision of the standard keeping in view the comments of the 18th Meeting agenda and requested them to submit their recommendation by 15th April 2017. The Committee again in 20th meeting held on 14th Mar 2019 had prepared a panel with M/s TATA steel ltd. – (Convenor), M/s FACOR Alloys, M/s Indian Metals and Ferro Alloys (IMFA), M/s Mitra S K Pvt Ltd and requested to submit their recommendations within 3 months. In the 21st meeting, decided to continue with existing panel, which will submit their recommendation within one month. The Panel Meeting is held on 15-03-2022. The panel Finalized their suggestions and proposed for revisions including the finalized changes. Based on the changes proposed, a draft document has been prepared by BIS and shared to conveynor vide email dated 4th April 2022 for his views/suggestions. The Draft prepared by BIS is as follows:	The committee after detailed deliberation decided to circulate the document as **Wide Circulation for views/ comments**. If no comments were received within one month, it can be sent for printing.	It is to inform to the committee that as per the decision of the committee in its previous meeting the WC draft was prepared along with certain comments and remarks raised in the revised draft enclosed below by the member secretary and was shared with Shri P.L.Bose of M/s Mitra.S.K. Pvt. Ltd to discuss and address the same vide email dated 5-09-2024. However reply is awaited.  IS 8562 MODIFIED.docx **The committee may please deliberate and decide.**

		IS8562 1.docx The decision of the conveyner is still awaited. In 22nd TC Meeting, The committee decided to circulate the document as P-draft among the members for one month for their views/comments. In 23rd TC Meeting, The committee decided to send the document for wide Circulation for their views/ comments for one month. If no comments were received, it can be sent for printing. **Action Taken:** The Draft was prepared by BIS based on the comments received from Shri P.L. Bose of M/s Mitra S.K. Pvt. Ltd. is Placed below: IS 8562 03-07-2023wc.docx Accordingly, a panel meeting was held on 12/07/2023 and resolve the doubts related to IS 8562. Further, changes are included and mentioned in the foreword.		
2)	Revision of **IS 2109:1982** Method of sampling of dolomite.	The committee in its 19th meeting held on 6 January 2017 requested Dr.A.K.Mukherjee of M/s Tata Steel Limitedand Shri P.L.Bose of M/s Mitra.S.K.Pvt.Ltd. to prepare the document for the revision of the standard and submit the same by 15th April 2017. The Committee again in 20th meeting held on 14th Mar 2019	The committee after detailed deliberation and decided to circulate the document as **Wide Circulation for views/ comments.** If no comments were received within	It is to inform to the committee that as per the decision of the committee in its previous meeting, the draft was sent for on 18 Oct. However certain comments and remarks were raised in the revised draft enclosed below by the member secretary and was shared with Shri P.L.Bose of M/s Mitra.S.K. Pvt. Ltd to discuss and address the same vide email dated

		requsted meber secretary to refer the subject to Light Metals and alloys Sectional Committee, MTD 7. In 21st meeting, The Committee after deliberation decided to keep the Standard in MTD 13 TC and further decided that again request Shri P.L.Bose of M/s Mitra.S.K.Pvt. Ltd. and Dr.A.K.Mukherjee of M/s Tata Steel Limited to submit their recommendation on the subject within 2 months. The committee decided that, a word file of IS 2109 will be provided by BIS to Shri P.L.Bose of M/s Mitra S.K.Pvt.Ltd. and Dr. A.K.Mukherjee of M/s Tata Steel Ltd. Further, committee requested the panel to submit their views/recommendations in the Draft provided within 2 months. In 23rd Meeting, The committee decided to send the document for wide Circulation for their views/ comments for one month. If no comments were received, it can be sent for printing. **Action taken :-** The Draft prepared by BIS based on the comments received from Shri P.L.Bose of M/s Mitra S.K. Pvt.. Ltd. is Placed below:  IS 2109 revision proposed. (1).docx Accordingly, panel meetings were held on 12-07-2023 and 20-07-2023 to resolve the doubts related to IS 2109.	one month, it can be sent for printing.	5-09-2024. However reply is awaited.  IS 2109 modified.docx **The committee may please deliberate and decide.**

		The draft finalized by panel is placed below:  IS 2109 (05.07.23) (WC).docx		
3)	Revision of IS 2245:1962 Methods of sampling of Quartz/Quartzite.	The committee in its 19th meeting held on 6 January 2017 requested Shri P.L.Bose of M/s Mitra. S.K.Pvt.Ltd. and Dr. A. K. Mukherjee of M/s Tata Steel Limited to prepare the document for the revision of the standard keeping in view the comments of the 18th Meeting agenda and requested them to submit their recommendation by 15th April 2017. The Committee again in 20th meeting held on 14th Mar 2019 had prepared a panel with M/s Mitra S K Pvt Ltd. – (Convenor), M/s Tata steel, M/s NMDC & M/s IBM and requested to submit their recommendations within 3 months. In 21st meeting, The Committee after deliberation decided to prepare a draft based on the comments received by Shri P.L.Bose of M/s Mitra.S.K.Pvt.Ltd. Further it is decided that member secretary is requested to submit the word file to Shri P.L. Bose and request to submit the draft within 2 months. In 22nd TC Meeting, The committee decided to incorporate the comments received and circulate among the members for their views/comments for one month.	The committee after detailed deliberation requested PL Bose to give the IS Sieve Size in Fig 2 Stages in reducing in gross sample and further requested the MS to incorporate the same in the standard and circulate the document as **Wide Circulation for views/ comments.** If no comments were received within one month, it can be sent for printing.	It is to inform to the committee that certain comments and remarks were raised in the revised draft enclosed below by the member secretary and was shared with Shri P.L.Bose of M/s Mitra.S.K. Pvt. Ltd to discuss and address the same vide email dated 5-09-2024. Further he was requested to modify IS sieve size data in Fig 2 as per the new IS 460 parts. However the reply is awaited.  IS 2245 modified.docx **The committee may please deliberate and decide.**

		In 23rd TC Meeting, The committee decided for little change in the title of IS 2245 as Method of sampling of quartzite to Method of sampling of quartz/quartzite and The committee decided to send the document for wide Circulation for their views/ comments for one month. If no comments were received, it can be sent for printing. **Action taken:-** The Draft prepared by BIS based on the comments received from Shri P.L.Bose of M/s Mitra S.K. Pvt. Ltd. and Dr. A. K. Mukherjee of M/s Tata Steel Limited is Placed below:  IS 2245 (23-06-2023).docx Accordingly, a panel meeting held on12-07-2023 to resolve the doubts related to IS 2245. Panel after detail deliberation and requested to member secretary to check the sizes mentioned in Fig. 2. **IS Sieve 320, 160, 80 and 15** should be check respective sizes to be in co-operated into the standard.		
4)	Revision of **IS 12595:1989** Classification of terminology for exploration of mineral deposits.	The committee in the 19th meeting held on 06 January 2017 at New Delhi advised following Panel to submit their recommendation for revision of the standard by 30th April 2017. 1.Shri Vibhuti Roshan of M/s NMDC-Convener 2.M/s Indian Bureau of Mines 3.M/s Geological Survey of India 4.M/s Federation of Indian Mineral Industries 5. M/s Tata Steel Limited	The committee after detail deliberation decided to include the Dr Manoj Kumar Mohanta of NML Jamshedpur in the panel and hold the panel meeting and finalise the draft with 2 months.	The document is proposed to be dropped at this stage take this standard for review in next AAP (2025-2026). **The committee may please deliberate and decide.**

		6. M/s Mineral Exploration Corporation Limited. 7.M/s M.N. Dustur and Co. ltd. 8.M/s NML, Jamshedpur. The Committee again in 20th meeting, decided to again request the existing panel to submit their recommendation within 3 Months. In 21st meeting, The Committee decided to include M/s M.N. Dustur and Co. ltd. into the panel. Further decided that to again request the existing panel to submit their recommendation and Draft within 3 Months. In 22nd TC Meeting, The committee after detailed deliberation requested the panel to submit their views/recommendations within 2 months. In the 23rd TC meeting, the committee requested member secretary to prepare the draft and share with the panel for their views /comments and the panel meeting should be conducted within 2 months. **Action taken:-** Working Draft has been circulated among the panel member on 16 March 2023 and also send the remainder on 31 July 2023 vide email. However, recommendation is still awaited.  IS 12595.docx	Further, once again P-circulate the document among the committee members.	

5)	Indian Standard on method of determination of angle of repose for Iron ores fines in bulk.	The committee in its 19th meeting held on 06 January 2017 at New Delhi decided to circulate the document as Preliminary Draft by changing the title of the document to 'Indian Standard on method of determination of angle of repose of ores in bulk'. The Committee again in 20th meeting held on 14th Mar 2019 had prepared a panel with M/s NML – (Convenor), M/s Mitra S K Pvt Ltd, M/s NMDC and requested to submit their recommendations within 3 months. The Committee again in 21st meeting decided to continue with the existing panel and requested to submit their recommendation on the final draft within 3 months: i) M/s NML – Convenor ii) M/s Mitra S K Pvt Ltd. iii) M/s NMDC. Further, it is decided that the title of the standard has to be "**Indian Standard on method of determination of angle of repose for Iron ores fines in bulk**". Also, the Final draft will be circulated among the committee members for their comments. In 22nd TC Meeting, the committee after detailed deliberation requested the panel to submit the final Draft document within 3 months. In 23rd TC meeting, the committee after detailed deliberation, requested the panel to submit the final draft document within 3 months. **Action taken:-**	The committee after detail deliberation, requested the panel to submit the R&D proforma for funding the R&D work. The proforma will be reviewed by screening committee and the finalized document can be submitted with 12 months along with supporting data as per the guidelines.	To be discussed in next meeting. **The committee may please note.**

		An email was sent on 15 June 2023 to the panel and requesting them to submit the final draft document. However, the recommendations are still awaited.  Indian Standard on angle of repose 11- It is observed by the member secretary that, there is need for requirement of additional data and clarity in the standard before publishing the Indian standard. It is to inform that, this new draft standard is a part of SNAP 2022-2027.		
6)	IRON ORE PELLETS FOR FEEDSTOCK OF BLAST FURNACE – SPECIFICATION	A proposal is received from M/s NMDC on 04 Feb 2020.The Proposal for the draft document is given below :  New proposal on IRON ORE PELLETS F Member secretary after discussion with Chairman of the committee has decided to prepare a panel with the following organizations and requested them to give their recommendations on the draft within one month: 1) M/s NMDC (convener) 2) M/s Pellet Manufacturer's Association of India 3) M/s KIOCL 4) M/s Arcelor Mittal Nippon Steel 5) M/s Jindal steel and power ltd. 6) M/s JSW Steel. 7) M/s NML 8) M/s Essel Mining & Industries Ltd. 9) M/s SAIL-CET In the 22nd TC Meeting, The committee after detailed	Committee after detailed deliberation, decided to make the guideline standard and after few modifications the document can be circulated as the P-circulation among the members.	It is to inform the committee that BIS is already having following standard for iron ore pellets: **IS 11336: 1985** - Guidelines for heat-hardened iron ore pellets for iron making in blast furnaces. However we are formulating a new standard on Iron Ore Pellets for feedstock of blast furnace-Specifications. Since we already have a standard on pellets specification it is **proposed to drop the formulation of new standard and instead revise the existing standard**. Further, the document was sent for P circulation on 23-08-2022 for a period of 30 days inviting comments till 22-09-2023 stage and **we have received comments from Pellet Manufacturers Association of India (PMAI) vide letter dated 20th March 2024**. It has been stated that there is a wide variation in the chemical composition as well as mineralogy of Iron Ores in the mines in different states of India. Thus have recommended to not

		deliberation decided to include M/s Essel Mining & Industries Ltd. and M/s SAIL-CET in Panel. Further, the committee requested the panel to submit their views/suggestion before next TC meeting. In 23rd TC Meeting, the committee after detailed deliberation requested the panel to submit their views/suggestions within two months. **Action taken:** An email was sent to panel on 31 July 2023 requesting them to review the comments and give their views or comments at the time of MTD13 TC meeting or via email. However, reply is still awaited. A BIS-intern from IIT Kharagpur had also collected data related to Iron ore pellets manufacturing in India. The Draft Document is attached below:  22-02-2023- IRON ORE PELLETS FOR FE		have a mandatory specification which is applicable to whole country. The comments and the P-draft are enclosed below:   IRON ORE PELLETS FOR FEEDSTOCK OF P-draft.doc In lieu of the above it is being **proposed to drop the revision and instead formulate a guideline standard and revise the IS 11336**. Further it is to add that the specification will not be mandatory unless notifies by the Govt. And also the standard has also specified the other compositions and moisture content can be as agreed between the contracting parties. Also the IBM have given the **approximate chemical composition of various companies producing pellets in its Iron and Steel Vision-2020**. And have also given the acceptable properties of pellets.   06062017101203Iron and Steel 2020_4 (n 06062017101255Iron and Steel 2020_6.p **Also the china has published GB/T 27692 : 2024 *Iron pellets for blast furnace* from which assistance can** be taken in revision of IS 11336. This document specifies the classification and grade, technical requirements, test methods, inspection rules, packaging, transportation, storage and quality of iron ore pellets for blast furnaces. This document applies to iron pellets for blast furnaces

				produced from iron concentrate or iron ore fines (referred to as "iron pellets"):This document does not apply to special iron pellets produced from vanadium, titanium, rare earths, chromium, etc In view of this the committee is requested to allocate the task of studying the current draft of iron ore pellets and GB/T standard to **newly constituted Panel 4**. The panel would study the GB/T standard and try to come with recommendation whether we can formulate the revised draft on the similar lines as that of GB/T standard and submit the same to BIS before the next committee meeting. Further the current document number allocated to the standard may be dropped. **The committee may please deliberate and decide.**
7)	**IS 5632 : 1970** Specification for wolframite concentrate	As a part of Action Research Project, BIS officer Shri Pyla Deshick has reviewed IS 5632 and submitted following observation:  IS 5632_ARP_Report.dc In 23rd TC meeting, The committee after detailed deliberation decided to circulate the document as the P draft for 21 days, if no comments were received the document will be circulated as Wide Circulation. **Action taken:** The document was circulated as Wide Circulation on 30-05-2023 with the approval of chairman.	The committee after detailed deliberation decided to send the draft standard for printing.	It is to inform to the committee that comments were received from RDCIS SAIL regarding the marking clause and the draft incorporating the same is enclosed below.  IS 5632 FINAL (3).docx **The committee may please deliberate and decide on printing of standard.**

		However, no comments were received. IS 5632 (25-05-2023) (1).pdf		
8)	IS 9959 : 1981 Guidelines for iron ore sinters for iron making in blast furnaces	As a part of Action Research Project, BIS officer Ashish Wakle has reviewed IS 9959 and submitted following observation: 70_9506_220808105 020_Draft_Documen **In 23rd TC meeting,** The committee after detailed deliberation decided to circulate the document as the P draft for 21 days. **Action taken:** The Draft prepared by BIS is Placed below: IS 9959 (29-05-2023).docx The document is circulated among member as P-draft on 29 May 2023.	The committee after detailed deliberation decided to circulate the document as **Wide Circulation for their views/ comments.** If no comments were received within one month, it can be sent for printing.	It is to inform to the committee that as per the decision of the committee in its previous meeting the WC draft is prepared by the member secretary and sent for wide circulation on 23-09-2023 for a period of 30 days inviting comments till 23-10-2023.**However no comments were received till the last date for receiving the comments**. Hence accordingly as per the decision of the committee the same is sent for printing on 17-11-2023.Further it is also to inform to the committee that the revised IS 9959 : 2024 is published. **The committee may please note.**
9)	**IS 12668: 1989** Melting characteristics of sponge iron/direct reduced iron DRI First Revision	As a part of Action Research Project, Member secretary has reviewed IS 12668 and submitted following observation: IS 12668 (26-05-2023).docx **Action taken:** The Draft prepared by BIS is Placed below: 12668.pdf	The committee after detailed deliberation and requested to re-circulate the document as P-Circulation for their views/ comments. If no comments were received within 21 days, it can be circulate as WC for period of 1 month.	It is to inform to the committee that as per the decision of the committee in its previous meeting the draft was recirculated as P circulation on 22-09-2023 for a period of 21 days inviting comments till 13-10-2023.**However no comments were received**. **The committee may please deliberate and decide on Wide Circulation.**

		The document is circulated among member as P-draft on 26 May 2023.		
10)	**IS 11284: 1985** Method Of Rotary Tube Test For Iron Bearing Materials For The Manufacture of Sponge Iron direct Reduced Iron DRI	As a part of Action Research Project, Member secretary has reviewed IS 11284 and submitted following observation:  IS 11284 (24-05-2023).docx **Action taken:** The Draft prepared by BIS is Placed below:  IS 11284.pdf The document is circulated among member as P-draft on 26 May 2023.	The committee after detailed deliberation and requested to re-circulate the document as **P-Circulation for their views/ comments**. If no comments were received within 21 days, it can be circulate as WC for a period of 1 month.	It is to inform to the committee that as per the decision of the committee in its previous meeting the draft was recirculated as P circulation on 27-09-2023 for a period of 21 days inviting comments till 18-10-2023.**However no comments were received**. The standards covers low temperature disintegration index and reducibility determinations. Only editorial changes have been done in the standard. It is proposed to drop the revision of the standard for the reasons listed in **Item C-16.1.1 of Annex C.** **The committee may please deliberate and decide.**
11)	**ISO/DIS 8371**: Iron ores for blast furnace feedstocks — Determination of the Decrepitation index.	The committee in its 23rd TC meeting decided to adopt the ISO/DIS 8371. **Action taken:** National foreword is prepared by BIS and is placed below:  ISO 8371[National foreword] 08-08-202 National foreword will be sent for WC with approval from HMTD.	The committee noted the information given in Item 2.1 ATR Sl No 17 of the agenda.	It is being proposed to drop the revision of the standard for the reasons listed in **Item C-2.1 of Annex C.** **However no comments were received**. **The committee may please deliberate and decide.**

ITEM 4 LIST OF INDIAN STANDARDS OF MTD-13

4.1 The updated list of Indian standards formulated by MTD-15 is given at **ANNEXURE-2**

ITEM 5 COMMENTS ON PUBLISHED STANDARDS

5.1 Comments was received on the following standard of the committee after the previous meeting:

Sl no.	Indian Standard	Comments	Action taken
1.	IS 11282 : 2000 Laboratory Pot-Grate Sintering Tests For Iron Ore Fines - Guidelines	Comment was received from Shri S. Acharya of M/s SAIL-RDCIS, Ranch vide portal dated 10 Oct 2023. Comment is given below:  Comment Details.pdf	Member Secretary of MTD 13 had circulated the comments among the committee member.
2.	IS 8604: 1977 Determination Of Compression Strength Of Iron Ore Pellets After Reduction - Method (First Revision)	Comment was received from Shri S. Acharya of M/s SAIL-RDCIS, Ranch vide portal dated 09 Oct 2023. Comment is given below:  Comment Detail.pdf	Member Secretary of MTD 13 had circulated the comments among the committee member.
3.	IS 5632: 1970 Specification For Wolframite Concentrate (First Revision)	Comment was received from Shri S. Acharya of M/s SAIL-RDCIS, Ranch vide portal dated 09 Oct 2023. Comment is given below:  Comment Detail.pdf	Member Secretary of MTD 13 had circulated the comments among the committee member.

5.2 The procedure to comment on the P and Wide circulated draft is enclosed below:


ilovepdf_merged.pdf

ITEM 6 REVIEW OF INDIAN STANDARDS

6.1 Periodical Review of Standards – Each published Indian standard is required to be reviewed by the concerned sectional committee after every five years of its publication/Reaffirmation. The guidelines given by Standards Advisory Committee (SAC) are as follows:

a) The standards may be reaffirmed with minor changes by issuing an amendment;
b) The standards may be reaffirmed with simultaneously taking up the revision; and
c) The standards may be withdrawn.
d) The standard can be reaffirmed & archived (for those standards for which no change is recommended, not widely used but they are also not recommended for withdrawal).
e) The standard can be reaffirmed in its present form(for which no change is required and are widely used)
f)

6.2 Standards that are due for review this FY year (2024-2025) are listed below:

SL. No.	IS Number	IS Title	Last Reaffirmation Year	Due Date
1	IS 9963 : 1981 Reviewed In : 2020	Determination of shatter index of iron ore lumps, sinters and pellets	2020	March, 2025
2	IS 16182 : 2014 Reviewed In : 2020	Magnetics in char from coal based sponge iron (DRI) - Methods of determination	2020	March, 2025

It is proposed to confirm these standards and take up for review at later stage.

The committee may please deliberate and decide.

6.3 The details of action taken with respect to the ARPs Submitted by BIS officers/members are given below:

Sl. No.	Indian Standard	ARP report	Decision Taken	Action taken
1.	IS 11282 : 2000 Guidelines for laboratory Pot - Grate sintering tests for iron ore fines (First Revision)	As a part of Action Research Project, Member secretary of MTD 13 has reviewed IS 11282 and submitted following observation:  IS 11282 [24-07-2023].docx **Action Taken:** The document is circulated among member on 26 July 2023.	The committee after detailed deliberation and decided to circulate the document as Wide Circulation for their views/ comments. If no comments were received within 30 days, it can be sent for printing.	The document was sent for wide circulation. However, comments were received from RDCIS SAIL. It is requested to SAIL to give the complete comments that what actual replacement is required in the standard.

				The committee may please deliberate and decide.
2.	IS 11283: 1985 Method for determination of softening point of iron oxides (In Powder Form); lump ore, sinter and pellets.	As a part of Action Research Project, Member secretary of MTD 13 has reviewed IS 11283 and submitted following observation: IS 11283 (25-07-2023) (1).doc› **Action Taken:** The document is circulated among member on 27July 2023.	The committee after detailed deliberation and decided to circulate the document as Wide Circulation for their views/ comments. If no comments were received within 30 days, it can be sent for printing.	The committee is requested to drop the revision and withdraw the standard on the basis of explanation given in **Item C-3 of Annex C.** . **The committee may please deliberate and decide.**
3.	IS 8604: 1977 Method for determination of compression strength of iron ore pellets after reduction	As a part of Action Research Project, Member secretary of MTD 13 has reviewed IS 8604 and submitted following observation: IS 8604[03-08-2023] (1).docx **Action Taken:** The document is circulated among member on 04 Aug 2023.	The committee after detailed deliberation and decided to circulate the document as Wide Circulation for their views/ comments. If no comments were received within 30 days, it can be sent for printing.	The document was sent for wide circulation. Comments were received from RDCIS SAIL to replace the 10 kN with 5KN. The committee is requested to drop the revision on the basis of explanation given in **Item C-4.1 of Annex C.** . **The committee may please deliberate and decide.**
4.	IS 8625 : 1986 Determination of crushing strength of iron ore pellets (First Revision)	As a part of Action Research Project, Member secretary of MTD 13 has reviewed IS 8625. **Action Taken:**	The committee after detailed deliberation and decided to P-circulate the document once again for their views/	The committee is requested to drop the revision on the basis of explanation

		The initial review has been conducted by the member secretary, and a working draft has been prepared as follows: IS 8625 07-08-2023.docx	comments. Further, member secretary may take views from Shri Vibuthi roshan of M/s NMDC.	given in **Item C-4.1 of Annex C.** **The committee may please deliberate and decide**.
5.	IS 9101 : 1979 Methods of sampling iron ore pellets	As a part of Action Research Project, Member secretary of MTD 13 has reviewed IS 9101. **Action taken:** The initial review has been conducted by the member secretary, and a working draft has been prepared as follows: IS 9101.docx	The committee after detailed deliberation and decided to P-circulate the document once again for their views/ comments.	The committee is requested to drop the revision on the basis of explanation given **in Item C-9.2 of Annex C.** **The committee may please deliberate and decide**.

ITEM 7 OTHER DISCUSSION ITEMS

Member Secretary has prepared one comparative analysis of standards based on the title and scope and the same has been placed at **Annex C** for discussion of the committee.

ANNEXURE A

ORES AND FEED STOCK FOR IRON AND STEEL INDUSTRY SECTIONAL COMMITTEE, MTD 13

Meeting	Date	Place
Twenty First	04-08-2021	Virtual Meeting
Twenty Second	22-06-2022	Virtual Meeting
Twenty Third	02-03-2023	BIS EROL Kolkata (Hybrid)
Twenty Fourth	11-08-2023	Hybrid Meeting(Manak Bhawan, Chintan (Bronze room),BIS, New Delhi ,India)

Sl.No.	NAME OF THE ORGANISATION	REPRESENTED BY	22nd	23rd	24th	Total Meetings attended
1.	NATIONAL MINERAL DEVELOPMENT CORPORATION LTD, HYDERABAD	SHRI VIBHUTI ROSHAN SHRI N.K.NANDA (ALTERNATE)	P	P	P	3/3
2.	AGNI STEELS PVT. LTD., ERODE	SHRI A.RAJASEKARAN (ALTERNATE)	A	P	**P**	2/3
3.	ALEX STEWART INTERNATIONAL (INDIA) PRIVATE LIMITED, VISHAKAPATNAM	SHRI DEBASISH PAL SHRI S. BALAJI (ALTERNATE)	-	P	A	1/2
4.	ARCELOR MITTAL AND NIPPON STEEL INDIA LTD. (AM/NS), VISHAKAPATNAM	DR. ATANU RANJAN OJHA SHRI CH. V. S. ND. HARIPRASAD (ALTERNATE)	-	P	A	1/2
5.	BHABHA ATOMIC RESEARCH CENTRE, MUMBAI	DR. SANJIB MAJUMDAR DR. ABHISHEK MUKHERJEE (ALTERNATE)	P	A	P	2/3
6.	CSIR- INSTITUTE OF MINERAL & MATERIAL TECHNOLOGY (IMMT), BHUBANESHWAR	DR. SWAGAT S. RATH DR S. P. DAS (ALTERNATE)	P	A	P	2/3
7.	CSIR - NATIONAL METALLURGICAL LABORATORY, JAMSHEDPUR	DR. MANOJ KUMAR MOHANTA	A	A	P	1/3

8.	FEDERATION OF INDIAN MINERAL INDUSTRIES	SHRI B.K. BHATIA	-	P	P	2/2
9.	FOMENTO RESOURCES PVT. LIMITED, PANJIM , GOA (Fresh nomination received vide email dated 14 Nov 2023 and further clarification for not attending the meeting received vide email dated 17 Sep 2024)	SHRI UDAY RAMDAS NAIK SHRI ABHIJIT PEDNEKAR (ALTERNATE)	A	A	A	0/3
10.	GEOLOGICAL SURVEY OF INDIA, KOLKATA	DR. UTPAL ROY CHOUDHURY (ALTERNATE)	A	P	A	1/3
11.	INDIAN BUREAU OF MINES, NAGPUR	SHRI L.B. TOAL SHRI SANTOSH PANI (ALTERNATE)	A	A	P	1/3
12.	INDIAN FERRO ALLOY PRODUCER ASSOCIATION	SHRI TANMAYA KUMAR PATTNAIK	P	P	A	2/3
13.	JINDAL STAINLESS LTD, NEW DELHI	SHRI ASHISH GOYAL SHRI SUYASH TRIVEDI	A	P	A	1/3
14.	JSW STEEL LTD, BELLARY	SHRI MRITTIK ROYCHOWDHURY SHRI C.R. PRAMOD KUMAR(ALTERNATE)	A	A	A	0/3
15.	KUDREMUKH IRON ORE COMPANY LIMITED, BENGALURU	SHRI P. PALANI SHRI RAVINDRA BABU (ALTERNATE)	P	P	A	2/3
16.	MANGANESE ORE (INDIA) LTD, NAGPUR	SHRI. RAJESH BHATTACHARYA SMT. SNEHA TIWAR (ALTERNATE)	A	P	A	1/3
17.	MINISTRY OF STEEL (TECHNICAL WING), NEW DELHI	SHRI PARMJEET SINGH	A	P	P	2/3
18.	MINERAL EXPLORATION CORPN. LTD, NAGPUR	SHRI P. RAVINDRAN	A	A	P	1/3

		SHRI SANTOSH KUMAR SATAPATHY (ALTERNATE)				
19.	MITRA S.K. PVT LTD, KOLKATA	SHRI P. L. BOSE DR ARIJIT GOSWAMI (Alternate)	P	P	P	3/3
20.	M.N. DASTUR & CO. LTD (KOLKATA) WB	SHRI AVIJIT PODDAR (ALTERNATE)	A	A	A	0/3
21.	NATIONAL INSTITUTE OF SECONDARY STEEL TECHNOLOGY(NISST), MANDI, GOBINDGARH /KOLKATA	SHRI RAJIB KUMAR PAUL SHRI SANDEEP PAL SINGH (ALTERNATE)	A	A	A	0/3
22.	PELLET MANUFACTURER'S ASSOCIATION OF INDIA-PMAI, NEW DELHI	SHRI. DEEPAK BHATNAGAR SHRI VIJAY DWIREDI (ALTERNATE)	P	P	P	3/3
23.	STEEL AUTHORITY OF INDIA LIMITED (SAIL), RESEARCH & DEVELOPMENT CENTRE FOR IRON & STEEL, RANCHI	SHRI V. DAYAL RATNESH RAM SHRI S. ACHARYA (Alternate)	A	A	P	1/3
24.	STEEL AUTHORITY OF INDIA, CENTRE FOR ENGINEERING AND TECHNOLOGY, RANCHI	SHRI BRAJESH KUMAR SHRI DILIP KUMAR JAGAN (ALTERNATE)	P	P	P	3/3
25.	RINL,VISAKHAPATNAM STEEL PLANT, VISAKHAPATNAM	SHRI M. K SHARMA M VENKATESWARA RAO (ALTERNATE)	P	A	A	1/3
26.	SPONGE IRON MANUFACTURER'S ASSOCIATION, NEW DELHI	SHRI D. KASHIVA (ALTERNATE)	A	P	P	2/3
27.	TATA STEEL, JAMSHEDPUR	DR. A.K.MUKHERJEE	A	A	A	0/3
28.	TATA STEEL LONG PRODUCTS LIMITED, GHATKURI	SHRI MANIKANTA NAIK SHRI GYANARANJAN POTHAL (ALTERNATE)	-	-	P	1/1

29.	INDIVIDUAL EXPERT	DR. KRISHNA KANT PRASAD	-	-	P	1/1

ANNEXURE-B

Scope: Standardization in the field of Ores and Feedstock for Iron and Steel Industry Sectional Committee

Sl. No.	IS No.	TITLE	Reaffirm M-Y	No. of Amds	Eqv.
1	IS 10345 : 2004	Flux grade limestone for use in iron and steel making - Specification (Second Revision)	October, 2023	-	Indigenous
2	IS 10346 : 2004	Dolomite for metallurgical and refractory use - Specification (Second Revision)	October, 2023	-	Indigenous
3	IS 10818 : 2024	CHROMITE FOR METALLURGICAL INDUSTRY - SPECIFICATION (First Revision)		-	Indigenous
4	IS 10823 : 2018	Methods for determination of thermal degradation index (TDI) and reduction degradation index (RDI) of iron oxides: lump ores, sinter and pellets (Second Revision)	December, 2023	-	Indigenous
5	IS/ISO 10835 : 2007	Direct reduced iron and hot briquetted iron - Sampling and sample preparation	February, 2024	-	Identical under single numbering
6	IS 10852 : 2012	Storage and transportation of sponge iron, direct reduced (DRI) and hot briquetted iron (HBI) - Guidelines (First Revision)	February, 2022	-	Indigenous
7	IS 11092 : 2001	Iron ore pellets for direct reduction processes - Specification (Second Revision)	November, 2023	1	Indigenous
8	IS 11093 : 2001	Iron ore lumps for direct reduction processes - Specification (Second Revision)	March, 2021	2	Indigenous
9	IS 11211 : 1984	Methods of sampling rock phosphate	March, 2024	-	Indigenous
10	IS 11281 : 2005	Manganese ore for use in iron and steel making (First Revision)	March, 2021	-	Indigenous
11	IS 11282 : 2000	Guidelines for laboratory Pot - Grate sintering tests for iron ore fines (First Revision)	January, 2024	1	Indigenous

12	IS 11283 : 1985	Method for determination of softening point of iron oxides (In Powder Form); lump ore, sinter and pellets	January, 2024	1	Indigenous
13	IS 11284 : 1985	Rotary tube test for iron bearing materials for the manufacture of sponge iron/direct reduced iron(DRI)	March, 2021	1	Indigenous
14	IS 11285 : 2002	Various tests on raw material to be used for coal based rotary kiln direct reduction (First Revision)	March, 2021	-	Indigenous
15	IS 11292 : 1985	Method for determination of relative reducibility of iron oxides: lump ores, sinter and pellets	March, 2024	-	Indigenous
16	IS 11336 : 1985	Guidelines for heat hardened iron ore pellets for iron making in blast furnaces	March, 2024	-	Indigenous
17	IS 11348 : 1989	Iron ore pellets - Apparent specific gravity, true specific gravity and apparent porosity - Methods for determination (First Revision)	March, 2024	-	Indigenous
18	IS 11373 : 1985	Guideline for laboratory disc pelletisation of iron ore fines	February, 2022	-	Indigenous
19	IS 11607 : 1986	Methods of sampling iron ore sinters	March, 2024	-	Indigenous
20	IS 11795 : 1996	Guidelines for ash softening studies on solid reductants for direct reduction (First Revision)	February, 2022	2	Indigenous
21	IS 11860 : 1998	Guidelines for non - coking coals for solid reductant based direct reduction in rotary kilns(And Other Reactors) (First Revion)	March, 2024	2	Indigenous
22	IS 11894 : 1986	Classification of magnetite iron ore	March, 2024	-	Indigenous
23	IS 11895 : 2006	Classification of manganese ore, ferruginous manganese ore, siliceous manganese ore, dioxide manganese ore and manganiferrous iron (First Revision)	October, 2023	-	Indigenous
24	IS 11896 : 1986	Method for determination of apparent specific gravity, true specific gravity and apparent porosity of iron ore lumps and sinters	March, 2024	-	Indigenous
25	IS 11897 : 1986	Guidelines for methods to be adopted for identjfying the minerology of iron oxides; lump ores, sinters and pellets	March, 2024	-	Indigenous

26	IS 12052 : 2007	Method of determination of re-oxidation rate of sponge iron/direct reduced iron (DRI) in contact with humid air and in direct contact with water (First Revision)	March, 2022	-	Indigenous
27	IS 12263 : 1987	Method for determination of regidity of sponge iron/DRI during transportation and handling	March, 2024	1	Indigenous
28	IS 12381 : 1994	Coal (Char) reactivity for direct reduction process - Method of determination (First Revision)	March, 2022	1	Indigenous
29	IS 12394 : 1988	Method for weathering test on iron ore sinter	March, 2024	-	Indigenous
30	IS 12550 : 1988	Methods of determining particle size distribution of iron ore fines	March, 2024	2	Not Equivalent
31	IS 12595 : 1989	Classification of terminology for exploration of mineral deposits	March, 2024	-	Indigenous
32	IS 12596 : 1989	Manganese ore sinters for blending for ferromanganese production - Specification	March, 2024	-	Indigenous
33	IS 12668 : 1989	Melting characteristics of sponge iron/direct reduced iron (DRI)	March, 2021	1	Indigenous
34	IS 12929 : 2007	Feedstock (Iron Oxides And Natural Gas) for gas - Based direct reduction processes - Guidelines (First Revision)	March, 2022	-	Not Equivalent
35	IS 13344 : 1992	Methods for checking the bias of sampling of ores	March, 2021	-	Not Equivalent
36	IS 13676 : 1993	Quartzite for iron making in blast furnaces - Specification	March, 2024	-	Indigenous
37	IS 13885 : 2001	Non - Magnetic/char in sponge iron (DRI) - Methods of determination (First Revision)	March, 2022	2	Indigenous
38	IS 1405 : 2010	Iron ores - Sampling and sample preparation - Manual method (Third Revision)	March, 2021	-	Not Equivalent
39	IS 1449 : 2010	Methods of sampling of manganese ores (Second Revision)	March, 2021	-	Indigenous
40	IS 14719 : 1999	Density of hot briquetted iron (HBI) - Method for determination	March, 2021	1	Indigenous
41	IS 14795 : 2000	Method for determination of clustering of iron oxide feedstock for direct reduction processes	August, 2023	1	Not Equivalent
42	IS 14796 : 2000	Guidelines on feedstock for smelting reduction processes	March, 2021	1	Indigenous

43	IS 14797 : 2000	Classification of smelting reduction (Alternate Iron Making) processes	March, 2021	1	Indigenous
44	IS 14991 : 2001	Method of determination for coal char strength	March, 2022	-	Indigenous
45	IS 15774 : 2018	Sponge iron/direct reduced iron (DRI) hot briquette iron (HBI) and cold briquette iron (CBI) for steel making - Specification	March, 2023	-	Indigenous
46	IS 15944 : 2011 ISO 3086 : 2006	Iron ores - Experimental methods for checking the bias of sampling	March, 2022	-	Identical under dual numbering
47	IS 16182 : 2014	Magnetics in char from coal based sponge iron (DRI) - Methods of determination		-	Indigenous
48	IS 16482 : 2018	Use of synthesis gas from coal gasifier for production of sponge iron - Guidelines	March, 2023	-	Indigenous
49	IS 16750 : 2018 ISO 16742 : 2014	Iron ores - Sampling of slurries	November, 2023	-	Identical under dual numbering
50	IS 18181 : 2023 ISO 15968:2016	Direct reduced iron Determination of apparent density and water absorption of hot briquetted iron HBI		-	Identical under dual numbering
51	IS 2109 : 1982	Methods of sampling dolomite, limestone and other allied materials (First Revision)	February, 2024	-	Indigenous
52	IS 2245 : 1962	Methods of sampling quartizite	August, 2023	1	Indigenous
53	IS 2246 : 2023	Sampling Fluorspar (Fluorite) - Methods (First Revision)		-	Not Equivalent
54	IS 4156 : 2023	SAMPLING OF BARYTES - METHODS		-	Indigenous
55	IS 4166 : 1967	Methods for sampling of ilmenite and rutile	January, 2022	-	Indigenous
56	IS 4574 : 1989	Fluorspar for use in metallurgical industries - Specification (Second Revision)	March, 2024	-	Indigenous
57	IS 4763 : 2006	Manganese ore for production of ferro manganese - Specification (Second Revision)	January, 2022	-	Indigenous
58	IS 5442 : 1992	Haematite iron ore - Classification (Second Revision)	March, 2024	-	Indigenous
59	IS 5534 : 1969	Method for determination of specific surface area of powdered ore samples	March, 2024	-	Indigenous

60	IS 5632 : 1970	Specification for wolframite concentrate	March, 2021	-	Indigenous
61	IS 5633 : 2023	Vanadium Pentoxide Ã¯Â¿Â½ Specification (Second Revision)		-	Indigenous
62	IS 5842 : 2024 ISO 3852	MEASURING BULK DENSITY OF IRON OXIDES: LUMP ORES SINTER AND PELLETS - METHOD		-	Not Equivalent
63	IS 6495 : 2019 ISO 3271	Method of tumbler test for iron oxides : lump ores, sinter and pellets (Second Revision)	August, 2023	-	Not Equivalent
64	IS 8167 : 1989 ISO 4695	Method for determination of reducibility index of iron ore oxides, lumps ore, sinter and pillets (First Revision)	January, 2022	1	Not Equivalent
65	IS 8562 : 1977	Methods of sampling chrome ore	January, 2022	-	Indigenous
66	IS 8604 : 1977	Method for determination of compression strength of iron ore pellets after reduction	February, 2024	-	Indigenous
67	IS 8624 : 1995 ISO 4698	Method for determtnation of swelling index of iron ore pellets (First Revision)	February, 2022	-	Not Equivalent
68	IS 8625 : 1986 ISO 4700	Determination of crushing strength of iron ore pellets (First Revision)	August, 2023	1	Not Equivalent
69	IS 9101 : 1979 ISO 3082	Methods of sampling iron ore pellets	August, 2023	1	Not Equivalent
70	IS 9660 : 2001	Methods for determination of softening - Melting characteristics of iron ore lumps/ pellets/sinter (First Revision)	February, 2022	-	Indigenous
71	IS 9959 : 2024	IRON ORE SINTERS FOR IRON MAKING IN BLAST FURNACES - GUIDELINES (First Revision)		-	Indigenous
72	IS 9963 : 1981	Determination of shatter index of iron ore lumps, sinters and pellets	March, 2020	1	Indigenous

ANNEXURE-C

C-1 TUMBLE AND ABRASION TEST OF IRON OXIDE

C-1.1 BIS is having following standard on tumble and abrasion resistance:

IS 6495 : 2019 -Method of tumbler test for iron oxides : lump ores, sinter and pellets (Second Revision)

The standard does not mention the tumble and abrasion resistance in the main title and scope but that is only an editorial change.

ISO is having ISO 3271 : 2015 Iron ores for blast furnace and direct reduction feedstocks — Determination of the tumble and abrasion indices which is applicable to lump ore, sinter and pellets.

IBM in its aggregation chapter 5 which is published in its Iron and steel Vison 2020 Year book has also referred to this standards only ISO 3271 for determination of tumble and abrasion resistance of iron ore pellets.

Hence it is being pr**oposed to adopt the ISO 3271 and revise IS 6495.**

The committee may please deliberate and decide.

C-2 THERMAL DEGRADATION/DECREPITATION INDEX AND REDUCTION DEGRADATION INDEX

C-2.1 ISO is having standard on decrepitation index (ISO 8371:2024 Iron ores for blast furnace feedstocks — Determination of the decrepitation index applicable to lump ores for blast furnace only) which is similar to thermal degradation index. The standard is already under adoption and has completed the WC stage and is applicable only to lump ores.

However, the Indian standard IS 10823: 2018 - Methods for determination of thermal degradation index (TDI) and reduction degradation index (RDI) of iron oxides: lump ores, sinter, and pellets (Second Revision) has already covered this test method by the name of TDI. Hence it is proposed to drop the revision of this standard and allocate the study of ISO standards vis-à-vis Indian standards to the Panel-3 or a working group under Panel-3 who will recommend whether we need to adopt ISO or whether any changes are required in IS 10823 and what all provisions of ISO we need to modify so that the standard can be adopted.

Also the RDI by static method is covered in ISO 4696-1 based on CO, CO2, H2, N2 and ISO 4696-2 based on CO,N2? (applicable to lump ore sinter and pellets) and ISO 13930 : 2015 exist for determination of RDI at low temperature by dynamic method (applicable only to lump ores and hot bonded pellets)

Hence the committee is requested to allocate the task to panel 3 or constitute a working group under same panel and entrust with them the task of studying all these ISO standards vis-a-vis Indian standard IS 10823 and give their recommendation for adoption along with complete

comparative report of IS and ISO standard. The committee is further requested to drop the adoption of ISO 8371 from revision.

The committee may please deliberate and decide.

C-3 SOFTENING AND MELTING CHARACTERISTICS OF LUMP ORE AND PROCESSED ORE

C-3.1 BIS is having following standards on the above subject:
IS 9660: 2001 - Methods for determination of softening - Melting characteristics of iron ore lumps/pellets/sinter (First Revision).
IS 11283 : 1985- Method for determination of softening point of iron oxides (In Powder Form); lump ore, sinter and pellets.
Out of these two standards IS 11283 has completed the WC stage as approved by the committee in its previous 24th meeting. However, it is to inform to the committee that is 9660 was revised in 2001 and as per the foreword given in IS 9660, the requirements of IS 11283 :1985 had been merged in IS 9660 and also the determination of softening point of iron oxide in powder form is not relevant and obsolete now. And further it has been mentioned in the foreword of IS 9660, that with the publication of this revised version of IS 9660, IS 11283 would be withdrawn.
Hence in context of the above facts, it is being proposed to drop the revision of IS 11283 and approve the same standard for withdrawal and supersede the same by IS 9660.

The committee may please deliberate and decide.

C-4 CRUSHING AND COMPRESSION STRENGTH OF IRON ORE PELLETS

C-4.1 BIS is having two standards on crushing and compression strength one before reduction and one after reduction:
IS 8625: 1986 - Determination of crushing strength of iron ore pellets (First Revision)
IS 8604: 1977 - Method for determination of compression strength of iron ore pellets after reduction.
Out of these standard IS 8604 has completed WC stage and is under revision in which only editorial changes have been made. Also, IS 8625 has completed P-draft stage and is to be sent for WC. It is proposed to drop the standard from revision in lieu of the following facts:
The corresponding standard to IS 8625 is ISO 4700 : 2015 Iron ore pellets for blast furnace and direct reduction feedstocks — Determination of the crushing strength. Why can't we adopt this standard and what is the difference between our Indian Standard and ISO 4700 and what are the difficulties faced in adoption of ISO 4700. The committee is requested to allocate the task to panel 3 or constitute a working group under same panel and entrust with them the task of studying ISO 4700 standards vis-a-vis Indian standard IS 8625 and give their recommendation for adoption along with complete comparative report of IS and ISO standard and also if we can't adopt ISO what all changes are required in ISO so that the same can be forwarded to ISO secretariat.
IS 8604 that is crushing strength after reduction is not found in any of the international standards, instead ISO 7992 :2022 **Iron ores for blast furnace feedstocks — Determination of reduction under load (applicable to lump ores and pellets**). The standard is also referred by Indian Bureau of Mines in its publication for testing of reduction under load for evaluating the structural stability of iron ores when reduced under conditions resembling those prevailing in the reduction zone of a blast furnace. The differential pressure that is measured corresponding

to 80% reduction gives an idea of the stability of the iron oxide during reduction. Hence it is proposed to adopt this standard as a separate standard and further allocate the task to above Working Group/Panel for reviewing the standard IS 8604 vis-à-vis ISO 7992 and recommend whether both the standards deal with same subject and also recommend whether the standard IS 8604 is relevant in today's context and whether it can be withdrawn.

The committee may please deliberate and decide.

C-5 SWELLING INDEX OF HOT BONDED PELLETS

C-5.1 The following IS standard exists on the same subject:
IS 8624: 1995 - Method for determination of swelling index of iron ore pellets (First Revision)
The ISO standard ISO 4698 : 2022 Iron ore pellets for blast furnace feedstocks — Determination of the free-swelling index exists . The committee is requested to allocate the task to the Panel/Working group created for crushing strength and give their recommendation on adoption of ISO 4698 and also a report on comparative analysis of both standard. In case the standard is not recommended for adoption the relevant difficulties faced shall be provided which hamper its adoption that is the changes desired in the ISO standard which can be forwarded to ISO secretariat.

The committee may please deliberate and decide.

C-6 TERMINOLOGY STANDARDS

BIS is having no standard for terminology in iron ores but ISO is having ISO 11323 : 2010 Iron ore and direct reduced iron — Vocabulary . Can we adopt it or the definitions require modification and we can convey the changes required in ISO to ISO secretariat also.
JIS M 8700 is adopted from **ISO 11323**. China is having GB/T 20565-2022 which is modification of ISO 11323. Can we adopt ISO or modify it or take assistance from GB/T or JIS?
It is proposed that the Panel 1 may be formulated to study the matter and submit their report and recommendation to the committee whether to adopt or modify the ISO.

The committee may please deliberate and decide.

C-7 MOISTURE CONTENT DETERMINATION

C-7.1 BIS is having IS 11690 : 1986 Method of moisture determination of iron ore lot where assistance has been derived from ISO/DIS 3087 for moisture determination. ISO is having ISO 3087 : 2020 Iron ores — Determination of the moisture content of a lot. This method is applicable to all iron ores, whether natural or processed. JIS has proposed certain changes to this standard. Why can't we adopt ISO? We should raise our concerns in ISO through comments so that they will incorporate our requirements. Further committee is requested transfer this standard from MTD 34 to this committee. It is being proposed to adopt the standards and revise IS 11690 : 1986 and we have already nominated the expert in ISO/TC102/SC-1/AHG1 also namely Shri P.L. Bose of M/s S.K. Mitra to further study the Japanese results on using an oven temperature of 115°C as a reference method for drying where Combined Water > 8% .

The committee may please deliberate and decide.

C-8 PARTICLE SIZE DISTRIBUTION OF IRON ORES AND DRI :

C-8.1 Currently BIS has no standard on particle size distribution determination except for Iron ore fines particle size distribution IS 12550: 1988. However, a dedicated ISO standard, ISO **4701:2019(en) Iron ores and direct reduced iron — Determination of size distribution by sieving** exists and also JIS M 8706 : 2015 . Why can't we adopt ISO? Will ISO standard cover determination of size distribution of fines?

It is being proposed to allocate the task to Panel 3 to study both IS and ISO standard and submit their recommendation on adoption of ISO 4701 and a comparative report between IS 12250 and ISO 4701.

The committee may please deliberate and decide.

C-9 SAMPLING OF IRON ORE LUMPS AND PROCESSED ORE (SINTER/PELLETS)

C-9.1 BIAS OF SAMPLING AND QUALITY VARIATION

(i) **IS 13344: 1992** - Methods for checking the bias of sampling of ores.

(ii) **IS 15944 : 2011/ISO 3086 : 2006 Iron ores -** Experimental methods for checking the bias of sampling

We have already adopted ISO 3086 for checking the bias of sampling, why **IS 13344** has not been withdrawn since both the standards are having similar title and also while formulating IS 13344 : 1992 assistance was derived from ISO 3086:1986.It is being proposed to withdraw IS 13344 and supersede the same with IS 15944.

Further ISO is having one standard on quality variation of iron ores and another on precision of sampling, sample preparation and measurements. Both standards are not yet adopted by BIS. However, the methods for quality variation are given in Annex A of IS 1405. Are these standards relevant to us?

ISO 3084:1998 Iron ores — Experimental methods for evaluation of quality variation

ISO 3085:2019 Iron ores — Experimental methods for checking the precision of sampling, sample preparation and measurement

It is being proposed to create a working group (WG-1) under Panel-2 who will review both these standards and submit their recommendation on adoption of these standards and whether these standards are relevant to us or not.

Further the standard ISO 3084 :1998 is under revision in ISO/TC102/SC-1/ WG-3 and is at ISO/WD stage in which Working draft (WD) study is initiated and ISO 3085 : 2019 is under SR Ballot. It is proposed to nominate the expert (s) from this working group in ISO so that if any changes are to be included in ISO so that we will be able to adopt the ISO standard.

The committee may please deliberate and decide.

C-9.2 SAMPLING AND SAMPLE PREPARTION

BIS is having three separate standards on sampling of iron ore (lump and processed) and another one related to slurries:

(i) **IS 9101: 1979** - Methods of sampling iron ore pellets. Sample preparation procedure for chemical analysis and moisture content is also given

(ii) **IS 11607: 1986** - Methods of sampling iron ore sinters. Sample preparation procedure for chemical analysis and moisture content is also given

(iii) **IS 1405: 2010** - Iron ores - Sampling and sample preparation - Manual method (Third Revision). This standard covers sampling and sample preparation of Iron ore lump and fines. Sample preparation procedure for chemical analysis and moisture content is also given.

(iv) **IS 16750: 2018** / **ISO 16742: 2014** - **Iron ores** -Sampling of slurries. This International Standard sets out the basic methods for sampling fine iron ore of nominal top size <1 mm that is mixed with water to form a slurry.

While ISO is having a single standard ISO 3082:2017 Iron ores — Sampling and sample preparation procedures which covers sampling and sample preparation rules of lump ore and processed ore. Further for sampling of fines ISO is having ISO 16742 :2014 which we have already adopted.

If the sampling of fines is already covered under IS 1405 :2010. Why the standard for fines IS 16750 : 2018 has been adopted?

Further how does the ISO 3082 differ from IS 1405, IS 11607 and IS 9101. Also we have not referred to IS 15944/ISO 3086 for checking the bias of sampling. Why can't we simply adopt ISO 3082 and withdraw the three standards mentioned above. Are there any technical difficulties in adopting the ISO standard as such? China is having GB/T 10322.1-2014 for same modified version of ISO 3082(applicable to all iron ores, whether natural or processed (e.g. concentrates and agglomerates, such as pellets or sinters) and earlier was having GB/T 10122 :1988 for sampling and sample preparation of physical testing of sinters and pellets and has been withdrawn by china.

Further, Shri Vibhuti Roshan of National Mineral Development Corporation Ltd. Hyderabad, Telangana proposed to adopt the International Standard ISO 3082:2017 in previous meeting. However, the committee noted that already we are having IS 1405:2010 and therefore assigned the task of reviewing IS 1405 and ISO 3082 and submitting his recommendations

Also, the committee had approved in the last meeting the below draft for P circulation of IS 9101(for pellets) in which no change has been done except for bringing it out in latest format of BIS. **Hence in view of above it is proposed to halt the revision** and drop the subject from revision since both these decisions are contradicting.

IS 9101.docx

Also it is now being proposed to assign the task to **Panel-2 to review** the three IS standards IS 1405, IS 9101, IS 11607 vis-à-vis ISO 3082 and submit their comparative report on between these IS and ISO 3082. Further to submit their recommendations on ISO adoption/modification. The committee is further requested to nominate and expert(s) in ISO from this Panel as the subject is registered for revision at ISO/TC 102/SC1- WG3 and is under stage ISO/AWI (ISO 3082).

The committee may please deliberate and decide.

C-10 DETERMINATION OF SPECIFIC SURFACE AREA OF IRON ORES

C-10.1 BIS is having following standards:

- **IS 5534 : 1969** - Method for determination of specific surface area of powdered ore samples

However ISO is having ISO 21283:2018(en) Iron ores — Determination of specific surface area — Test method using air-permeability apparatus (Blaine) which is also adopted by JIS.

Further, the committee, during the 19th meeting decide to adopt the draft document. In 21st meeting, the Committee decided to circulate among the committee members for their views. If recommended, then the standard may be sent for Wide Circulation for one month with prior concurrence of the Chairman of MTD13. In 23rd the committee after detailed deliberation, requested Shri A. Rajasekaran of M/s Agni Steels give their views based on safety purpose within 2 Weeks. An email had been sent on 27-03-2023 to Shri A. Rajasekaran of M/s Agni Steels for give his views/suggestion based on safety purpose. However, reply was awaited. The Committee in its 24th meeting after detailed deliberation, requested Shri A. Rajasekaran of M/s Agni Steels give his views within 2 Weeks. Email was send, but the reply is awaited.

The committee is requested to allocate the task to panel-3 or create working group under Panel-3 for discussing the adoption of ISO 21283 : 2018 and also to study whether both these standards are on similar line and whether the Indian Standard IS 5534 is valid in present context.

The committee may please deliberate and decide.

C-11 SHATTER INDEX

C-11.1 BIS is having following standard on shatter index:

IS 9963: 1981 - Determination of shatter index of iron ore lumps, sinters, and pellets.

What is the significance of this standard? If the impact resistance is to be determined we already have the tumbler test. What is the requirement of this standard?

If this standard serves a different purpose than tumbler test, why can't we propose this subject in the ISO for standard formulation?

The committee may please deliberate in this matter.

C-12 REDUCIBILITY INDEX AND RELATIVE REDUCIBILITY

C-12.1 BIS is having the following standards on reducibility:
IS 8167: 1989 - Method for determination of reducibility index of iron ore oxides: lumps, ore, sinter, and pellets (First Revision).
IS 11292 : 1985 -Method for determination of relative reducibility of iron oxides: lump ores, sinter and pellets
In the first case it determines the rate of reduction at 40% reduction (in between and the second one is final degree of reduction calculated after an time period of 180 mins.

ISO is having following standards on reducibility test (ONE IS RATE OF REDUCTION AND OTHER IS FINAL DEGREE OF REDUCTION):

ISO 7215:2015 Iron ores for blast furnace feedstocks — Determination of the reducibility by the final degree of reduction index . The final degree of reduction is calculated from the oxygen mass loss after 180 min (R180).**Also known as relative reducibility index.**

ISO 4695:2021 Iron ores for blast furnace feedstocks — Determination of the reducibility by the rate of reduction index. In this method, reduciblity index expressed as the rate of reduction at the atomic ratio of O/Fe of 0.91 or 40 % reduction in %/min .

What is the difference between our IS and ISO standard? Why can't we adopt the ISO standards and revise our Indian Standards? What are the technical issues faced?

The committee in this regard is requested to allot the task to Panel 3 or create a new working group within the panel and submit the comparative analysis of both standards and their final recommendations on adoption.

The committee may please deliberate and decide.

C-13 BULK DENSITY, APPARENT DENSITY, TRUE DENSITY OF IRON ORE LUMPS, SINTER AND PELLETS

C-13.1 BULK DENSITY

IS 5842: 2024 - Measuring bulk density of iron oxides: lump ores, sinter, and pellets - Method.

ISO 3852 : 2007 Iron ores for blast furnace and direct reduction feedstocks — Determination of bulk density exists on the subject applicable to both lump and processed ores irrespective of size.

Infact, during revision of IS 5842, assistance was derived from ISO 9852. Why can't we harmonize with the ISO standards? What are the difficulties faced?

The committee may please deliberate and decide.

C-13.2 APPARENT DENSITY, TRUE DENSITY OF IRON ORE LUMPS, SINTER AND PELLETS

IS 11896 : 1986 -Method for determination of apparent specific gravity, true specific gravity and apparent porosity of iron ore lumps and sinters

IS 11348: 1989 - **Iron ore pellets** - Methods for determination of apparent specific gravity, true specific gravity, and apparent porosity of (First Revision).

ISO is having no standard but GB/T 24586 exists on the similar subject but exists only for pelletized ores. What is the significance of this test method if IS 5842 exists wont it suffice?

The committee may please deliberate and decide.

The committee may please deliberate and decide.

C-14 MINERALOGY

BIS is having following standards related to mineralogy:

Mineralogy Identification:

- **IS 11897: 1986** - Guidelines for methods to be adopted for identifying the mineralogy of iron oxides; lump ores, sinters, and pellets.

Exploration of Mineral Deposits:

- **IS 12595: 1989** - Classification of terminology for the exploration of mineral deposits

The committee in its previous 24th meeting had decided to P-circulate the draft of IS 12959 and had constituted a panel given below for the same. It is now proposed to the committee to reconstitute the panel with the task of reviewing both the P-draft and the IS 11897 and submit their recommendations before the next committee meeting.

Shri Vibhuti Roshan of M/s NMDC-Convener
Dr Manoj Kumar Mohanta of M/s NML, Jamshedpur.
M/s Indian Bureau of Mines
M/s Geological Survey of India
M/s Federation of Indian Mineral Industries
M/s Tata Steel Limited
M/s Mineral Exploration Corporation Limited.
M/s M.N. Dustur and Co. ltd.

C-15 CLASSIFICATION OF IRON ORES

BIS is having following standards on classification of Iron ores:

IS 11894 : 1986 - Classification of magnetite iron ore.
IS 5442 : 1992 - Haematite iron ore - Classification (Second Revision)
China is having GB/T 32545 : 2016 Division of production grades of iron ore.
Hence it is proposed to the committee to constitute a panel to review both IS and GB/T standards and submit their recommendation for revision/Reaffirmation/Withdrawal and the same will be taken in the next year AAP.

NOTE – ITEMS HIGHLIGHTED IN YELLOW WILL BE TAKEN UP FOR REVIEW IN NEXT AAP.

C-16 STANDARDS FOR DRI/HBI/CBI AND ITS FEEDSTOCK

C-16.1 Test methods for raw materials for DRI

C-16.1.1 Reducibility and RDI:

BIS is having following standard on reducibility and RDI:

IS 11284: 1985 - Rotary tube test for iron bearing materials for the manufacture of sponge iron/direct reduced iron (DRI)

The standard is currently under revision and has completed P-Circulation stage. The revision entails only the editorial changes. The standard prescribes the determination of reducibility of iron ore and its reduction degradation index.

However, the ISO has following standards:
ISO 11257:2022 Iron ores for shaft direct-reduction feedstocks — Determination of the low-temperature reduction-disintegration index and degree of metallization.
ISO 11258:2015 Iron ores for shaft direct-reduction feedstocks — Determination of the reducibility index, final degree of reduction and degree of metallization.
The IS standard has not been reviewed vis-à-vis ISO standard and hence is proposed to allocate the task to Working Group WG-3 under Panel-3, who will submit their comparative report of IS and ISO and also submit their final recommendation on adoption of ISO standards. It is further proposed to committee to drop the revision of the Standard as of now.

The committee may please deliberate and decide.

C-16.1.2 Clustering Index

BIS is having following standard on clustering index:
IS 14795 : 2000 Method for determination of clustering of iron oxide feedstock for direct reduction processes**.**
Earlier the Panel-4 consisting of following members:
M/s NMDC (Convener)
M/s CSIR - National Metallurgical Laboratory, Jamshedpur
M/s KIOCL
M/s Pellet Manufacturer's Association of India, New Delhi
BIS intern from M/s IIT Kharagpur
had compared IS 14795 and ISO 11256 : 2015 Iron ore pellets for shaft direct-reduction feedstocks — Determination of the clustering index and had recommended to adopt the ISO 11256 and revise the Indian standard as the ISO standard procedure is more elaborated test method.
In view of the above, it is being proposed to the committee to revise the standard and adopt ISO 11256.

The committee may please deliberate and decide.