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**BUREAU OF INDIAN STANDARDS**

**DRAFT AGENDA**

**Thermal Insulation Sectional Committee, CHD 27 23rd Meeting**

**Day and Date :** Tuesday, 30th July, 2024

**Time :** 3 : 00 PM

**Venue :** Virtual (WebEx)

**Meeting Link :** <https://bismanak.webex.com/bismanak/j.php?MTID=m93fd0cc0cc496143c301c54ab8b274ba>

**Meeting number:** 25157088851

**Password:** CHD@27

**CHAIRMAN: Dr. Harpal Singh, Chief Scientist, CSIR-CBRI, Roorkee**

**MEMBER SECRETARY:** **Ms.** **Puja Priya, Scientist-C, BIS**

# ITEM 0 OPENING OF THE MEETING

**0.1** Welcome by Bureau of Indian Standards

**0.2** Opening remarks by the Chairperson

# ITEM 1 CONFIRMATION OF THE MINUTES OF THE 22nd MEETING

# 

The minutes of the 22nd meeting of Thermal Insulation Sectional Committee, CHD 27 held physically on 21st March 2024 were circulated via portal on 02-04-2024. No comments were received on the same.

The Committee may **CONFIRM** the minutes as circulated.

# ITEM 2 SCOPE AND COMPOSITION OF CHD 27

**2.1** **Scope :** The present scope of CHD 27 as approved by the Chemical Division Council of the Bureau is as follows:

a) To formulate Indian Standards for terminology; methods of sampling and test; code of practice including decommissioning and disposals aspects of thermal insulating materials; specification for thermal insulation materials and cellular insulations (excluding cork and ligno-cellulosic materials);

b) **Liaison** : ISO TC- 163 (P): Thermal performance and energy use in the built environment

ISO TC- 163 SC- 1 (O): Test and measurement methods

ISO TC-163 SC-2 (O): Calculation methods

ISO TC-163 SC-3 (O): Thermal insulation products, components and systems

**The Committee may NOTE.**

**2.2 Composition of CHD 27, its Subcommittees and Panels**

2.2.1 The updated present composition of CHD 27 is given in [Annex-I](#Annex_1)**.** Last column indicates participation of the members in last three meetings.

**The Committee may NOTE.**

2.2.2 The sectional committee in the last meeting, allocated the task to prepare the strategic roadmap of CHD 27 for 5 years to CHD 27: P8.

As per the decision of the committee, the Panel members held its first meeting on 23rd July 2024 and prepared the following **strategic roadmap of CHD 27 for 5 years**;

1. To create specific panel for working related to ISO activities and ballots and another panel for developing standards on new test methods.
2. To bifurcate the mineral wool standard i.e. IS 8183 into three varieties i.e. rock-wool (stone wool), slag wool and glass wool.
3. To introduce optional parameters i.e. Fire resistance, durability and moisture absorption in product standards especially which are used in buildings.
4. To introduce guidelines in product standards regarding their application in industries & buildings.
5. To create annexure for addressing sustainability & climate change issues taking help from ISO guide 82 & 84.
6. To create annexure for health safety of all stakeholders of thermal insulation products
7. To formulate standards for new age thermal insulation materials.
8. To revise the pre-2000 standards.
9. To create awareness of Indian Standards under CHD 27.

The Committee may **APPROVE** the strategic roadmap prepared by the panel.

2.2.3 As per the recommendation of Panel 8, a panel may be specifically created in order to provide comments on ISO ballots to ensure active participation in the international activities.

**2.3 Co-option Request**

Co-option request was received from Mr. Sayeed Sameer, B Medical Systems India Private Limited.The Organization Authorization Letter and CV have been attached below.

The committee in the last meeting considered the co-option request and decided that BIS Secretariat would ask for the justification from Shri Sayeed Sameer, B Medical Systems India Private Limited that how he/his organization can contribute to the committee.

The query was raised from Mr. Sayeed Sameer via mail on 14 May 2024, however, no response is received from his side.



**The Committee may DECIDE.**

**ITEM 3 STANDARDS/ AMENDMENTS PUBLISHED**

These following standards have been published since last meeting;

|  |  |  |
| --- | --- | --- |
| **SI No.** | **IS No.** | **IS Title** |
|  | IS 11308 : 2024 | Hydraulic Setting Thermal Insulating Castables for Temperatures up to 1 250 Â°C — Specification (First Revision) |
|  | IS 13204 : 2024 | Rigid Phenolic Foam for Thermal Insulation â€” Specification (First Revision) |
|  | IS 18652 : 2024  ISO 12241 : 2022 | Thermal Insulation for Building Equipment and Industrial Installations Calculation Rules |
|  | IS 9428 : 2024 | Preformed Calcium Silicate Insulation (For Temperature up to 950 Â°C) — Specification (Second Revision) |

The Committee may **NOTE.**

**ITEM 4 DRAFT STANDARDS UNDER PRINTING**

The following documents are currently under publication;

|  |  |  |
| --- | --- | --- |
| **Sl. No** | **Document Details** | **Current status** |
|  | CHD/27/20646  IS 3144: 1992  Mineral Wool Thermal Insulation Materials —Method of Test (Third Revision) | The document is under printing. |

The Committee may **NOTE.**

**ITEM 5 DRAFT STANDARDS FOR APPROVAL OF FINALIZATION**

**5.1 Adoption of ISO 8497:1994 Thermal insulation — Determination of steady-state thermal transmission properties of thermal insulation for circular pipes**

ISO 8497:1994 is referred in the draft of “Flexible Elastometric Foam (Fef) Products for Thermal Insulation of Building Equipment, Building Structures and Industrial Application – Specification”. The Committee had approved the adoption of ISO 8497:1994 as Indian standard. The Committee in the last meeting had decided that BIS Secretariat will prepare its National foreword, and issue it into wide circulation.

*As per the decision of the committee*, *BIS secretariat prepared the national forward of CHD 27 (24920) document and issued it into wide circulation for 2 months with last date for comments as 27/04/2024. No comment has been received on the document.*

The Committee may **FINALIZE** the document.

**5.2 IS 12432 : Part 2 : 1988 Code of practice for application of spray applied insulation: Part 2 Calcium Silicate**

The Committee, in its last meeting reviewed the draft received from Shri K. K. Mitra and found that it needs several discussions. Further, the committee decided that the inputs received on draft from Shri K. K. Mitra will be discussed in CHD 27 : P9 and it will be finalize to send for wide Circulation for 60 days. If, no comments were received on the WC draft and it will be send for printing after taking approval from the chairperson.

As per the decision of the committee, the panel P9 members held its first meeting on 19-02-2024. The Panel discussed the comments and resolved them. Accordingly, the document was modified by BIS Secretariat.

Shri P P Lahiri, in his comment on the minutes of the first panel meeting suggested that “asbestos mill board” may be replaced by “suitable insulation material”. The received comment was again discussed by Panel members in its second meeting held on 04/03/2024, and was agreed by panel members. The document was modified accordingly.

*As per the decision of the committee, the modified document CHD 27 (25021) was sent into wide circulation for 60 days with last date for comments as 10/05/2024. No comment has been received on the document.*

The Committee may **FINALIZE** the document.

**5.3 IS 11239: Part 8 : 1985 Methods of test for rigid cellular thermal insulation materials: Part 8 flame height, time of burning and loss of mass**

This standard was considered for review under Pre 2000 category. The inputs were provided by Dr. Vikas J. Lakhera. The committee in its last meeting had decided to refer these inputs for discussion to panel 9.

As per the decision of the committee, the panel P9 members held its first meeting on 19-02-2024. The Panel discussed the comments and resolved them. Accordingly, the document was modified by BIS Secretariat.

*As per the decision of the committee, the modified document CHD 27 (25288) was sent into wide circulation for 60 days with last date for comments as 25/06/2024. No comment has been received on the document.*

The Committee may **FINALIZE** the document.

**5.4 IS 11239: Part 11: 1985 Methods of test for rigid cellular thermal insulation materials: Part 11 compressive strength**

This standard was considered for review under Pre 2000 category. The inputs were provided by Dr. Vikas J. Lakhera. The committee in its last meeting had decided to refer these inputs for discussion to panel 9.

As per the decision of the committee, the panel P9 members held its first meeting on 19-02-2024. The Panel discussed the comments and resolved them. Accordingly, the document was modified by BIS Secretariat.

*As per the decision of the committee, the modified document CHD 27 (25291) was sent into wide circulation for 60 days with last date for comments as 05/07/2024. No comment has been received on the document.*

The Committee may **FINALIZE** the document.

**ITEM 6 DRAFT STANDARDS UNDER WIDE CIRCULATION**

6.1 IS 13286 : 1992 Surface spread of flame for thermal insulation materials - Methods of test

Dr. Arvind Kumar, CBRI had provided the technical inputs on IS 13286. The Committee in the last meeting had resolved the comments and decided that after incorporating the comments in the document, it will be sent for wide circulation for 2 months. If, no comments were received on the WC draft and it will be send for printing after taking approval from the chairperson.

*As per the decision of the committee, BIS secretariat prepared the document of CHD 27 (24897) as decided and issued it into wide circulation with last date for comments as 20/04/2024. Comments were received on the WC document, same is attached below;*



The Committee may **DELIBERATE.**

**6.2 IS 12432 (Part 1) : 1988 Code of practice for application of spray applied insulation: Part 1 mineral fibre.**

The Committee, in its last meeting reviewed the draft received from Shri K. K. Mitra and found that it needs several discussions. Further, the committee decided that the inputs received on draft from Shri K. K. Mitra will be discussed in CHD 27 : P9.

*As per the decision of the committee, the panel P9 members held its first meeting on 19-02-2024. The Panel discussed the comments and resolved them. Accordingly, the modified document CHD 27 (25020) was sent into wide circulation for 60 days with last date for comments as 10/05/2024. Comments were received on the WC document, same is attached below;*



The Committee may **DELIBERATE.**

**6.3 Adoption of ISO 24285:2022 Thermal insulation for building equipment and industrial installations — Cellular glass products — Specification as revision of IS 11307 : 1985 Specification for cellular glass block and pipe thermal insulation**

*As per decision of the committee BIS secretariat prepared the national forward of CHD 27 (25762) and issued it into wide circulation for 2 months with last date for comments as 31/07/2024. The committee members are urged to go through the document and provide comments, if any.*

*If no comment are received on the WC draft, it will be sent for printing after taking approval from Chairperson.*

The Committee may **NOTE.**

**7 DRAFT STANDARDS FOR APPROVAL OF WIDE CIRCULATION**

**7.1 Fire Performance for Thermal Insulation Materials to be Used in Building Equipment or Building Structures — Method of Test**

Fire Performance test is referredin the draft of “Flexible Elastometric Foam (Fef) Products for Thermal Insulation of Building Equipment, Building Structures and Industrial Application – Specification”. The draft was developed by Panel CHD 27 : P5. The committee further decided to circulate it to committee members for 21 days through portal for their inputs.

*Accordingly, the draft was sent as P-draft CHD27 (25732) via portal on 28-05-2024 for 21 days. No comment has been received on the P-draft.*

**

The Committee may **DECIDE** further**.**

**7.2** **Flexible Aerogel blanket - Specification**

The Committee in its last meeting reviewed the agenda item and agreed that Aerogel is one of the best thermal insulation product and hence an indigenous Indian Standard should be formulated on the topic as ISO standard ISO 22482:2021 could not be adopted in toto.

The committee created a panel CHD 27 : P10 to work upon the document and prepare the P-draft from it. The document developed by the panel would be circulated to committee members as P-draft through portal for 30 days.

*The draft was discussed in the first Panel meeting* CHD 27 : P10 *and the modified document was circulated as P-draft, CHD27 (25792) via portal on 03-06-2024 for 30 days. No comment has been received on the P-draft.*

The Committee may **DECIDE** further**.**

**8 DRAFTS UNDER PREPARATION**

**8.1 IS 3677 : 1985 Specification for unbonded rock and slag wool for thermal insulation (Second Revision)**

The committee decided to obtain inputs from members on the revision draft by again circulating it on the mail. Accordingly, the draft of IS 3677 was circulated to committee members for their inputs by mail. The Committee in the last meeting had reviewed the comments and deliberated on the comments. The decision of the committee on the comments are recorded in the below given documents*.*

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Further, the Committee requested to Dr. Tabish Alam, CSIR-CBRI, Dr. Punit Kumar, PIBCO, and Shri Presenjit Saha, Engineers India Limited to provide inputs as decided in the comment file. Inputs were received from Dr. Tabish Alam. He has provided the values of thermal conductivity in SI unit (i.e. W/m.K) under section 5.7, the same is attached below.



Reminder mail has been sent to other members for sending inputs. Inputs were received from Dr. Punit Kumar, same is attached below;



The committee in the last meeting had decided that after incorporating the inputs received from Dr. Tabish Alam, Dr. Punit Kumar and Shri Presenjit Saha, the document will be sent for wide circulation for a period of 60 days. If no comments are received on the WC draft, it will be sent for printing after taking approval from the Chairperson. *The document is yet to be sent.*

The Committee may **NOTE.**

**8.2** [**IS 12436 : 1988**](https://www.services.bis.gov.in:8071/php/BIS_2.0/MembershipManagement/CRef.php?ID=Mzc3OA%3D%3D) **Specification for preformed rigid polyurethane (Pur) and polyisocyanurate (Pir) foams for thermal insulation**

As per the decision of the committee, the Panel CHD 27/P9 considered the document in its 1st meeting and decided that the document will be discussed in the next meeting when some manufacturers of the product will be invited. Shri Prasenjit Saha had provided the manufacturers details. Mr. Anil Kumar, Shree Insulation India Pvt Ltd (manufacturer) had provided the inputs which were discussed in 3rd Panel meeting, some comments were resolved and some of them are still pending for discussion & resolution and will be discussed in the 4th panel 9 meeting.

The Committee in the last meeting noted the information on the progress of revision draft of IS 12436. The chairperson pointed that this is one of the most important organic insulation material and hence requirements of smoke index, toxicity, flammability should also be incorporated in the revision document.

*The panel members in its 4th meeting reviewed and discussed the comments and decided that the document is to be restructured to specify the three grades of the material having nominal density 40 kg/m3, 60 kg/m3 and 250 kg/m3 for high density support materials. Accordingly, the requirement values need to be provided by Dr. Punit Kumar, Shri Vikas Lakhera and Shri Anil Kumar by the end of June. Accordingly, the document will be discussed in the 5th panel meeting.*

The Committee may **NOTE.**

**8.3 IS 14656 : 1999 Ceramic fibre products — Methods of test**

As per the advice of the committee in its previous meetings, Dr. Punit Kumar volunteered to provide inputs for this standard. The committee decided that after incorporating the inputs received from Dr. Punit Kumar, the draft will be circulated as P-draft to committee members for 21 days. The revision will be done on priority II.

Accordingly, reminder mail has been sent for providing the inputs on IS 14656 : 1999. Inputs were received from Dr. Punit Kumar, same is attached below. *The document is yet to be sent into circulation as P-draft.*

**

The Committee may **NOTE.**

**8.4 Flexible Elastometric Foam (Fef) Products for Thermal Insulation of Building Equipment, Building Structures and Industrial Application – Specification**

Shri Shadab Ahmed, Armacell in the last meeting had reminded the committee that one draft was being developed under Panel CHD 27 : P5 on topic of Flexible Elastometric Foam. The draft was circulated as P draft to committee members and it needs to be proceed for wide Circulation. The draft received from Shri Shadab Ahmed, Armacell is attached below for Committee’s reference.



The Committee in the last meeting had decided that some reference standards are yet to be incorporated in the standard, after incorporating the reference standard into the draft. BIS Secretariat will prepare its WC Draft and send it for wide circulation for 60 days.

The reference standards are in the process of adoption. The document may be discussed in the next meeting.

The Committee may **NOTE.**

**8.5 Rigid Cellular Plastics — Thermal Insulation Products for Buildings — Extruded Polystyrene (XPS) Insulation Board – Specification**

A new work item proposal was received from Shri Amaresh Panda, Country Manager- Business Development (Insulation). He has also provided the working draft, the same is attached below.



The Committee in the last meeting considered and approved the new work item proposal and decided to formulate standard on **Extruded Polystyrene (XPS) Insulation.** Thecommittee further allotted the task of reviewing the document provided by Supreme Petrochem to CHD 27 : P9. The panel 9 composition is updated by including Shri Vikas Lakhera and Shri Amaresh Panda. The updated scope & composition of panel 9 is attached at Annex- I.

*As per the decision of the committee, the panel members in its meeting reviewed the draft and decided that the document need to be modified as per the discussion specifying different densities of different type of materials and accordingly modifying the other requirements. This also needs to be compared with ASTM C-578-23. The document needs to be discussed in the next meeting of* to CHD 27 : P9.

The Committee may **NOTE.**

**8.6 IS 3346 : 1980 Method for the determination of thermal conductivity of thermal insulation materials (Two Slab, Guarded Hot - Plate Method) (First Revision)**

The Committee in its previous meetings recommended to revise the standard along with reaffirmation. Dr. Punit Kumar in the last meeting had informed the committee that he will provided the revision draft to BIS Secretariat. Accordingly, reminder mail was sent for providing the revision draft of IS 3346 : 1980. Working draft of IS 3346 has been received, the same is attached below.



The Committee in the last meeting had decided to circulate it to committee members as P- draft for 21 days through portal for their inputs. The comments received on the working draft will be discussed in the next meeting. If no comments are received on the P draft, it will be processed for Wide Circulation for a period of 60 days. *The document is yet to be sent into circulation.*

The Committee may **NOTE.**

**8.7 Polyethylene Terephthalate (PET) product for thermal insulation of building equipment, building structures and industrial application – specification**

Shri Shadab Ahmed, Armacell had proposed to develop a new standard on “**Polyethylene Terephthalate (PET) product for thermal insulation of building equipment, building structures and industrial application – Specification”.**

The Committee advised Shri Shadab Ahmed to provide its working draft and give a brief presentation on the uses of product in the next committee meeting. Accordingly, reminder mail has been sent to Shri Shadab Ahmed. However, the same was awaited from his side.

*The committee in the last meeting had decided to give one more chance to Mr. Shadab Ahmed as he was not present in the meeting to make his case and final decision of approval of the subject will be taken in next committee meeting.*

The Committee may **DECIDE.**

**ITEM 9 INTERNATIONAL ACTIVITIES**

International Organization for Standardization (ISO) is the apex standardization body with an exclusive mandate to prepare and propagate International Standards. The standard development is carried through a number of technical committees which has a defined structure including Secretariat (held by a member body of ISO). The Bureau of Indian Standards, the National Standards Body of the country represents India on ISO. The CHD 27, on behalf of BIS holds P membership of ISO/TC 163 and O membership of ISO/TC 163/SC 1, and ISO/TC 163/SC 2, and ISO/TC 163/SC 3.

**9.1 Participation in ISO/TC 163 and its subcommittee and working groups.**

**a. Registration in ISO/TC 163 and its SCs**

Considering the importance of direct monitoring of the activities of **ISO/TC 163 and its SCs,** it is proposed that the member secretary may be registered be as committee member in **ISO/TC 163 and its SCs 1, 2 & 3.**

The committee may **APPROVE**.

**b. Membership in SCs of ISO/TC 163**

CHD 27 is the national mirror committee for ISO/TC 163 and its subcommittees. CHD 27 is having 'P' membership in ISO/TC 163 and 'O' membership in its subcommittees. Earlier, CHD 27 used to have P membership in ISO/TC 163/ SC 1 however, due to some inconsistencies the membership degraded form 'P' to 'O'.

Considering the following activities of CHD 27, **it is being proposed to upgrade the membership of CHD 27 from 'O' to 'P' in the subcommittees SC 1 and SC 3.**

1. Adoption of ISO 24285:2022 Thermal insulation for building equipment and industrial installations — Cellular glass products — Specification (under process), developed by ISO/TC 163/SC 3

2.  Adoption of ISO 8497:1994 Thermal insulation — Determination of steady-state thermal transmission properties of thermal insulation for circular pipes (under process), developed by ISO/TC 163/SC 1

3.  Adoption of ISO 12241 : 2008 Thermal insulation for building equipment and industrial installations — Calculation rules  (under process), developed by  ISO/TC 163/SC 2

The list of standards published by the above subcommittees are attached for your ready reference.



The proposal was already circulated by email dated May 22, 2024 to the committee members, to which no committee member has objected.

The committee may **APPROVE** the proposal.

**c. Experts nomination in working groups under Subcommittees**

Dr. Punit Kumar has shown interest in becoming the expert of the following working groups;

|  |  |  |  |
| --- | --- | --- | --- |
| **S.NO** | **ISO Committee** | **Members Nominated** | **Experts Suggested** |
|  | ISO/TC 163/SC 1/WG 19  Periodic heat method for thermal diffusivity of thermal insulation | No members nominated presently | Dr. Punit Kumar |
|  | ISO/TC 163/SC 3/WG 19 Mineral fibre mat and board thermal insulation | No members nominated presently | Dr. Punit Kumar  Ms. Puja Priya |
|  | ISO/TC 163/SC 3/WG 20  Microporous thermal insulation | No members nominated presently | Dr. Punit Kumar |
|  | ISO/TC 163/SC 1/WG 8  Moisture content and moisture permeability | No members nominated presently | Dr. Punit Kumar |
|  | ISO/TC 163/SC 1/WG 20  Test methods at cryogenic temperature | No members nominated presently | Dr. Punit Kumar |

The Committee may **DECIDE** and nominate additional members, if interested.

**9.2 Upcoming Meetings of ISO/TC 163 and its sub committees/ working groups.**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sl No.** | **ISO Committee** | **Meeting Details** | **Participation** |
|  | ISO/TC 163 and its SCs and WGs | The next meeting of ISO/TC 163 and its SCs and WGs is scheduled to be held from 30 Sept 2024 to 04 Oct 2024 by Face-to-Face mode in Paris, France.  The last date for registration is 16 Sept 2024. | We have received the draft proposal for nomination from PIBCO Ltd to participate in ISO TC 163 and its SCs and WGs at Paris, France from Dr Punit Kumar. The same is attached below.    The Committee may **ADVISE.** |

**9.3 New proposals under consideration at ISO/TC 163, its subcommittee and working groups.**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sl No.** | **New Work Item Proposal** | **Remarks** | **Purpose** |
|  | ISO/NP 25329 Thermal insulation products — Polyester fibre mat and board — Specification (**ISO/TC 163/SC 3**) | This document provides the requirements for factory-made products of polyester fiber thermal insulation mat or board products for buildings. It includes determination of product characteristics covering procedures for evaluation of performance, conformity, marking, labeling and packaging.  The scope of this document is limited to man-made polyester fibre thermal insulation products containing more than 65% (by mass) of man-made polyester fiber, with or without facings, and used where the continuous service temperature of the insulation substrate is within the temperature range −40 °C to + 110 °C.  Products covered in this document may also be used in prefabricated thermal insulation systems and composite panels; the performance of systems incorporating these products is not covered.  This document does not purport to address all the health and safety aspects associated with its use. Anyone using this Standard has the responsibility to consult the appropriate authorities and to establish health and safety practices, in conjunction with any existing applicable regulatory requirements, prior to its use. | Polyester mats are mainly manufactured from polyester fibre, a safe, non-toxic, allergy friendly, lightweight material having high tensile strength, robustness and is unaffected by moisture.  Polyester mats are itch free, contain no formaldehyde binders, and require no protective clothing to install. All of this makes them a safe insulation option for all to use. Polyester mat also have a Zero Ozone Depleting (ODP) rating, contain negligible Volatile Organic Compounds (VOC’s), further 80% of the fibres that go into Polyester mat are recycled from plastic bags, bottles and other packaging materials, so globally they are environmentally safe and beneficial.  Polyester insulation products have been used widely in Australia, Japan, UK, China, New Zealand, USA and other many countries. There are currently no national standards or ISO standards focused on Polyester fibre thermal insulation products. Accordingly, a Polyester fibre thermal insulation products ISO standard is needed. |

The Committee may **DELIBERATE** & **ADVICE**.

**ITEM 10 PROGRAMME OF WORK (INCLUDING PERIODIC REVIEW OF INDIAN STANDARDS)**

The Programme of work of the committee can be accessed from the below link;

<https://www.services.bis.gov.in/php/BIS_2.0/bisconnect/pow_details>

**ITEM 11 ANY OTHER BUSINESS**

**ITEM 12 DATE AND PLACE OF NEXT COMMITTEE MEETING**

**ITEM 13 VOTE OF THANKS**

**ANNEX - I**

**COMPOSITION OF THERMAL INSULATION SECTIONAL COMMITTEE CHD 27, ITS SUBCOMMITTEE, AND PANELS**

Details of last three meetings:

|  |  |  |
| --- | --- | --- |
| **Meeting** | **Date** | **Place** |
| 20th | 15 July 2022 | Virtual Meeting |
| 21st | 9 June 2023 | Physical Meeting, BIS HQs, New Delhi |
| 22nd | 21 March 2024 | Physical Meeting, BIS HQs, New Delhi |

**Chairperson: Dr. Harpal Singh,** Chief Scientist, CSIR-Central Building Research Institute, Roorkee

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Sl. No.** | **Organization** | **Representative** | **Attendance** | | | |
| **20th** | **21st** | **22nd** | **Total** |
|  | Armacell India Private Limited, New Delhi [M] | Shri Shadab Ahmed  Shri Prashant Nair  Shri Vipin Chauhan | P | P | - | 2/3 |
|  | Bharat Heavy Electrical Limited, New Delhi, Trichy [G] | Shri Ray D. K.  Shri Nil Mohan Kumar | P | - | P | 2/3 |
|  | CSIR - Central Building Research Institute, Roorkee [R&D] | Dr. Tabish Alam  Dr. Nagesh Babu Balam  Shri Chandan Swaroop Meena | P | P | P | 3/3 |
|  | Calderys India Refractories Limited, Mumbai [M] | Shri Santanu Basak  Shri Sahil Surana | P | - | - | 1/3 |
|  | Engineers India Limited, New Delhi [R/D] | Shri Prasenjit Saha  Shri Prasenjit Pal | P | P | - | 2/3 |
|  | Institute of Technology, Nirma University [A] | Dr Vikas J. Lakhera | P | - | P | 2/3 |
|  | Lloyd Insulations India Limited, New Delhi [M] | Shri K. K. Mitra  Ms. Sonal Gupta | P | P | P | 3/3 |
|  | MECON Limited, Ranchi [G] | Shri K K Mishra  Shri Kamesh Kumar  Shri Ashish Kumar Bairagi  Shri Sukanta Adhikari | P | P | - | 2/3 |
|  | National Dairy Development Board, Anand [R&D] | Shri Sumeet Shekhar /Shri Alark Kulkarni | P | - | P | 2/3 |
|  | Newkem Products Corporation, Mumbai [M] | Shri Nimish V Sura  Shri Kuldeep Gosain | - | P | - | 1/3 |
|  | Nuclear Power Corporation of India Limited, Mumbai [G] | Shri Venkata K.M Vuppada  Shri Pankaj Kumar | - | P | P | 2/3 |
|  | Pibco Limited, New Delhi (R&D Centre) | Dr. Punit Kumar  Shri Vishwa Bandhu Gupta | P | P | P | 3/3 |
|  | Punjstar Industries Private Limited, New Delhi [M] | Shri Kisalay Kumar  Shri Anil Singh Rawat | P | P | P | 3/3 |
|  | Reliance Industries Ltd, Mumbai [M] | ~~Shri Manish Darji~~  Shri Ranjan Singh | P | P | - | 2/3 |
|  | Research Designs and Standards Organization (RDSO), Lucknow [G] | Shri Shravan Kumar Srivastava  Shri P K Naik | P | P | P | 3/3 |
|  | Roxul Rockwool Technical Insulation, Mumbai [M] | Shri Debapratim Dinda  Shri Vinay Pratap Singh | P | P | P | 3/3 |
|  | Rockwool Insulation Manufacturers Association | Shri Amit Jain  Shri Bharat Lakhotia  Shri Vikas Patel |  | P | - | 1/2 |
|  | Saint-Gobain India Private Limited, Chennai [M] | Shri Biswajit Roy  Shri Rahul Karmakar  Shri Ajay Kulkarni | P | P | P | 3/3 |
|  | Tata Consulting Engineers Limited, Navi Mumbai [M] | Shri Shivnarayan Pareek | P | P | - | 2/3 |
|  | In Personal Capacity | Shri P. P. Lahiri | P | P | - | 2/3 |

**Panel CHD 27: P8**

**Scope:** To prepare the strategic roadmap of CHD 27 for 5 years.

**Composition:**

|  |  |  |
| --- | --- | --- |
| **Sl. No.** | **Organization** | **Representative** |
|  | Pibco Limited, New Delhi | Dr. Punit Kumar **(Convener)** |
|  | Armacell India Private Limited, New Delhi | Shri Shadab Ahmed |
|  | Saint-Gobain India Private Limited, Chennai | Shri Biswajit Roy |
|  | CSIR-CBRI | Dr. Tabish Alam |
|  | In Personal Capacity | Shri P P Lahiri |

**Panel CHD 27: P9**

**Scope:**

* 1. Revision of [IS 12436 : 1988](https://www.services.bis.gov.in:8071/php/BIS_2.0/MembershipManagement/CRef.php?ID=Mzc3OA%3D%3D) Specification for preformed rigid polyurethane (Pur) and polyisocyanurate (Pir) foams for thermal insulation
  2. Revision of parts 6 to 11 of IS 11239
  3. Preparation of P-draft on Extruded Polystyrene (XPS) Insulation

**Composition:**

|  |  |  |
| --- | --- | --- |
| **Sl. No.** | **Organization** | **Representative** |
|  | Engineers India Limited, New Delhi | Shri Prasenjit Saha **(Convener)** |
|  | Pibco Limited, New Delhi | Dr. Punit Kumar |
|  | In Personal Capacity | Shri P P Lahiri |
|  | Lloyd Insulations India Limited, New Delhi | Shri K. K. Mitra |
|  | Newkem Products Corporation, Mumbai | Shri Kuldeep Gosain |
|  | Nirma University, Ahmedabad | Shri Vikash Lakhera |
|  | Supreme Petrochem Ltd, Mumbai | Shri Amaresh Panda |

**Panel CHD 27: P10**

**Scope:** Preparation of P-draft of Thermal insulation product — Aerogel

**Composition:**

|  |  |  |
| --- | --- | --- |
| **Sl. No.** | **Organization** | **Representative** |
|  | Pibco Limited, New Delhi | Dr. Punit Kumar **(Convener)** |
|  | Nirma University, Ahmedabad | Shri Vikash Lakhera |
|  | Lloyd Insulations India Limited, New Delhi | Shri K. K. Mitra |
|  | CSIR - Central Building Research Institute, Roorkee | Dr. Tabish Alam |
|  | Manufacturer (Shimita Systems)  Manufacturer Chemtron Science Laboratories Private Limited, Navi Mumbai | Shri Pritish Daudkhane  Shri Ashok Yadav |