भारतीय मानक ब्यूरो
(उपभोक्ता मामले, खाद्य एवं सार्वजनिक वितरण मंत्रालय, भारत सरकार)
BUREAU OF INDIAN STANDARDS
(Ministry of Consumer Affairs, Food & Public Distribution, Govt. of India)

मानक भवन, 9, बहादुर शाह ज़फर मार्ग, नई दिल्ली – 110002
Manak Bhawan, 9, Bahadur Shah Zafar Marg, New Delhi – 110002
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कार्यसूची

हमारा संदर्भ : सीईडी 22:4/ए-2.14 **19 नवंबर 2024**

विषय : अग्नि संसूचक अग्नि संचेतक एवं दमन प्रणाली उपसमिति, सीईडी 22:4 की चौदहवीं बैठक की कार्यसूची

सीईडी 22:4, के सभी सदस्य

प्रिय महोदय/महोदया,

हमारे समसंख्यक पत्र दिनांक 05 नवंबर 2024 द्वारा भेजी गई बैठक की सूचना के संदर्भ में अग्नि संसूचक एवं अग्नि संचेतक उपसमिति, सीईडी 22:4 की चौदहवीं बैठक की कार्यसूची की एक प्रति आपको भेज रहे हैं। बैठक निम्नानुसार आयोजित होगी:

समिति	तिथि एवं समय	स्थान
अग्नि संसूचक एवं अग्नि संचेतक उपसमिति, सीईडी 22:4	मंगलवार 26 नवंबर 2024 10:30 h	WebEx के माध्यम से अथवा बीआईएस मुख्यालय, नई दिल्ली

सामान्यतः अधिकृत मुख्य सदस्य, वैकल्पिक सदस्य, एवं पेशेवर युवा ही बैठक में आते है। यदि उनका अन्य कोई प्रतिनिधि बैठक में आ रहा है तो कृपया इसकी पूर्व सूचना भेज दें। यदि बैठक में चर्चा के लिए आपका कोई प्रस्ताव हो तो कृपया अधोहस्ताक्षरी को उपरोक्त पते पर भेज दें।

हम आशा करते है कि आप बैठक में उपस्थित होंगे और इसकी पुष्टि अभी तक नहीं की है तो कृपया ई-मेल से भेज दें।

धन्यवाद।

भवदीय,

ह०

(राजेश चौधरी)
सहायक निदेशक/ वैज्ञानिक 'बी'
(सिविल अभियांत्रिकी विभाग)
ईमेल: ced22@bis.gov.in
दूरभाष: 011-23608590, extn 8590

संलग्न : उपरलिखित

भारतीय मानक ब्यूरो
(उपभोक्ता मामले, खाद्य एवं सार्वजनिक वितरण मंत्रालय, भारत सरकार)
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AGENDA

Our Ref : CED 22:4/A-2.14 **19 November 2024**

Subject : Agenda for the Fourteenth Meeting of Fire Detection, Fire Alarm and Suppression Systems Subcommittee, CED 22:4

ALL MEMBERS OF CED 22:4

Dear Members,

In continuation to our Meeting Notice of even number dated 05 November 2024, please find enclosed herewith a copy of the Agenda of the 14th meeting of Fire Detection and Fire Alarm Subcommittee, CED 22:4. The schedule of the meeting is as given below:

Committee	Date &Time	Place
Fire Detection, Fire Alarm and Suppression Systems Subcommittee, CED 22:4	Tuesday, 26 November 2024 1030 h	Online through WebEx or Physically at BIS HQ, New Delhi

Normally, only the nominated Principal member, Alternate member, and Young Professional attend the meeting. In case their representative(s) are being deputed in their absence, it would be highly appreciated if you can give us prior intimation. Proposals if any for items to be included for discussions or comments may please be sent to the undersigned at the above address.

We hope, you would kindly make it convenient to attend this meeting and a line in confirmation, if not already done so, by e-mail would be highly appreciated.

Thanking you,

Yours faithfully,

Sd/-

(Rajesh Choudhary)
Assistant Director/ Scientist 'B'
Civil Engineering Department
Email: ced22@bis.gov.in
Ph: 011–23608590, extn 8590

Encl: As Above

BUREAU OF INDIAN STANDARDS

AGENDA

CED 22:04/A-2.14 **19 November 2024**

Fire Detection, Fire Alarm and Suppression Systems Subcommittee, CED 22:4 : **14th Meeting**

Tuesday, 26 November 2024 : **1030 h**

Virtually through WebEx or Physically at BIS HQ, New Delhi

1) **URL:** Click here
2) **Meeting ID:** 2517 979 7230
3) **Password:** CED22

Convener: Shri Santosh Warick **Member Secretary:** Shri Rajesh Choudhary

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Item 0 OPENING REMARKS BY THE CONVENER

Item 1 CONFIRMATOIN OF THE MINUTES OF THE LAST MEETING

1.1 The Minutes of the last meeting of Fire Detection and Fire Alarm Subcommittee, CED 22:4 held on 6 & 7 September, 20 & 21 September, and 6 October 2022 were circulated vide our letter CED 22:4/A-2.13 dated 18 April 2023. No comments were received.

The Subcommittee may **CONFIRM**.

Item 2 COMPOSITION OF THE SUBCOMMITTEE

2.1 The composition of the Subcommittee as last reviewed by the main Committee, CED 22 is given in **Annex 1**.

The Subcommittee may **CONSIDER.**

Item 3 DRAFT FOR FINALIZATION

3.1 Draft Indian Standard Design, Installation, Testing and Maintenance of Condensed Aerosol Fire Extinguishing System — Code of Practice, CED 22(25695)WC

3.1.1 The above draft was issued in wide circulation vide BIS letter no CED 22:4/T-42 dated 09 September 2024 for one months to elicit public comments. No comments have been received.

The Subcommittee may **CONSIDER** and finalise for **PUBLICATION**.

3.2 Draft Amendment No. 1 to IS 15493: 2021 Gaseous Fire Extinguishing Systems — General Requirements (First Revision), CED 22(26518)WC

3.2.1 The above draft was issued in wide circulation vide BIS letter no CED 22:H/T-1 dated 09 September 2024 for one months to elicit public comments. No comments have been received.

The Subcommittee may **CONSIDER** and finalise for **PUBLICATION**.

3.3 Draft Indian Standard on Selection Installation and Maintenance of Automatic Fire Detection and Alarm System — Code of Practice (Fifth Revision of IS 2189), CED 22(14626)WC

3.3.1 The above draft Indian Standard was issued in wide circulation for a period of one month vide BIS ref: CED 22:4/T-02 dated 22 July 2024 to eliciting public comments. The comments have been received from the following:

Sl No.	Abbreviation	Commentator
1	Detectortesters	Parul Verma, Business Development Manager - India, Detectortesters
2	Honeywell	Mithun Banerjee, National Leader | Business Development-NPI, Honeywell International (India) Pvt Ltd
3	Vighnaharta	Nitin Joshi, Managing Director, Vighnaharta Technologies Pvt Ltd
4	SBI	Shri Mayank Yadav, Fire Officer, State Bank of India

The detailed comments are given in **Annex 2**.

The Subcommittee may **CONSIDER**.

Item 4 COMMENTS ON PRINTED STANDARDS

4.1 Comments on IS 9972: 2023 Automatic Sprinkler Heads for Fire Protection Service — Specification (Second Revision)

4.1.1 The following comments have been received from New Ace Industries, Ghaziabad:

It is for your kind information that immediately after receiving your letter CMD-111/16:9972 dt. 19 May 2023, we had started action at our end to incorporate necessary testing facility at our works and most of the facilities which are already installed in house as per revised SIT at our premises are as follow:

1) General requirements & examination of sprinklers (cl 5 & 5.3.4).
2) Leakage test (cl 6.1.1).
3) Hydrostatic strength (cl 6.2).

4) Water hammer test (cl 6.3)
5) Lodgement test (cl 6.4).
6) Operating tern. Test liquid bath(cl 6.5).
7) Operating temp. test air bath {cl6.6}.
8) Heat exposure test (6.7).
9) High temp. exposure test {cl6.8).
10) Freezing test (cl 6.9).
11) High ambient temp. test (cl 6.10).
12) Thermal shock test (cl6.ll}.
13) Vacuum test(cl6.14).
14) Assembly load/Frame strength test (cl6.15).
15) Deflector strength test (cl6.17).
16) Vibration test (cl6.18).
17) Drop and tumble tests (cl6.l}.
18) Discharge coefficient (cl6.20).
19) Endurance test (cl6.21).
20) Stress cracking test (cl6.22.2.1).
21) Water distribution test (cl6.23).
22) Determination of time constant (cl6.24).

But we shall not be in a position to switch over to the revised standard due to following reasons:-

1. As per SIT, we are required to get the samples tested from BIS recognized outside lab for eight test requirements as per cl.6.13,6.16,6.22.3,6.26,cl.10 and cl.11. and we had been in touch with the existing B.I.S recognized labs but none of them has shown any interest to obtain B.I.S approval for IS:9972-2023, In the absence of which conformity of product as per revised standard cannot be established.
2. Frequency of conductivity test(cl.6.26) which is once in a week that too from outside lab and similarly frequency for fire test which is once in a month are not practicable as the total no. Of samples will be 144 in first case and 36 nos each for fire test and wood crib fire test (cl.10&11). Considering the nature of test and infrastructure and consumables required, testing charges will be very high and beyond the capacity of a normal scale licensee.
3. ln view of the situation explained above none of the licensee including our self is in the position to implement the revised standard, therefore It Is proposed that a committee of technical people involved in the field of sprinklers may be constituted, and discussion may be held, to find the practical solution which can help in implementation revised standard.
4. Further, frequency for water distribution test (cl.6.23) in each control unit, which is not at all reasonable, since there will be no change in water distribution unless the basic design of the sprinkler Is changed. It shall be done only when there is change in design and this test may be considered as type test.

Unless the SIT for revised standard is modified keeping in view frequency of tests and independent bis recognized laboratory is available for outside tests, it will not be possible for us to implement revised standard. Therefore, it is requested to extend the date for implementation of revised standard till above purpose action by bis are taken.

The Subcommittee may **CONSIDER.**

4.1.2 The following comments have been received from Omega Industries, Ghaziabad:

A) In reference to the Clause No. 6.26 -conductivity (C-Factor) test in BIS standard IS 9972: 2023, We would like to bring to your notice that,

The above test is extensive test for the critical component that is Thermo Bulb. The particular component is being procured from outside manufacturer or vendor, keeping in view the importance of performance of this component the following tests satisfies the quality and performance of the component:

1. Operating Temp. (Air Bath) test - Cl.6.6
2. Heat exposure test (Glass Bulb) - Cl.6.7
3. Freezing Test - Cl.6.9
4. Thermal Shock Test - Cl.6.11
5. Strength of Heat Responsive Element (Glass Bulb)- Cl 6.16.2

Conducting the above tests at the factory along with the test certificate provided by the manufacturer (preferably UL listed) we can absolutely be confirmed about the performance and quality of the product.

Further conducting the test as per CL.6.24 Determination of Time constant we can determine the performance of the sprinkler frame along with the Heat responsive bulb, in crust it's found that conducting the Conductivity (C-factor) test can be avoided as it will help better implementation of STI and ease for the licensee.

B) With reference to the Cl. 10.1, the said test is determining the distribution of water, in this test following difficulties or challenges will occur while conducting the test:

1) Large number of wood crib is required.
2) As the test states that we have to extinguish the fire of the crib using OTHER medium, this might affect the result of the test as in any case there will be some amount of extinguishing medium will be deposited on the wood crib which will affect the conditioning and hence the moisture content of the wood crib, in conclusion the test result can't be similar each time.
3) Conditioning of wood crib is a challenge as either we have to make a room which is temperature controlled, or we have make a very large conditioning chamber.
4) It is difficult to understand what exactly we are trying to test, as the distribution

of water from the sprinkler deflector can be tested by conducting water distribution test (100 pan or 16 pan), this test will only increase the testing time and expenses of the licensee and that too without any practical outcome of the test. Further it is almost impossible to conduct the test according to STI.

5) In case there is a failure in this test and the product passes the water distribution test in this case as manufacturer it is impossible for us to take corrective measures as we really don't understand what changes we need to do in the product.

C) With reference to the CL 6.22.3, in this test sulphur-dioxide gas is required, this gas is not available in lab size cylinder, further it is also highly polluting hazardous gas which will be difficult to use in tests.

D) With reference to CL6.22.4, in this test hydrogen Sulphide gas is required , this gas not available in lab size cylinders , further it is highly polluting and hazardous gas.

It is further requested to kindly conduct a MANAK MANTHAN or stakeholder meeting with existing licensees for point-to-point discussion on each CLAUSE. The standard is very elaborate and there is confusion among the type of sprinkler and test that shall be conducted respectively. In meeting we can also suggest and discuss on substitute tests which we feel will benefit in the practical use of the product.

The Subcommittee may **CONSIDER.**

4.1.3 The following comments have been received from Shri S. K. Nandi, Director (Tech), Advance Firetec and Research Lab Pvt. Ltd., Delhi:

We have studied the new revised standard of IS: 9972:2023 and our comments about testing Facilities are given below:

We inform you that we have test facilities most of the parameters but practically the Standard is not realistic/ justified according to the consideration of no. of samples required for each test parameters, long period of testing which involves block of testing equipment & test personnel, costly equipment like vibration machine, consumable item like firewood as per std. etc.

Considering the above lab is not interested to make the facility of 2-3 parameters for the completion of test facility as per is 9972:2023. In one sentence lab has no complete test facilities as per IS 9972:2023. The undersigned is willing to speak on this subject in details over telephone.

The Subcommittee may **CONSIDER.**

4.1.4 The following inputs have been received from the Ghaziabad Branch Office of BIS:

1. Lack of BIS-Recognized Labs: None of the existing BIS-recognized labs have shown interest in obtaining BIS approval for IS 9972:2023, particularly for critical tests like those outlined in clauses 6.13, 6.16, 6.22.3, 6.26, 10, and 11. Without approved labs, product conformity cannot be established.

2. Complexity of Conductivity (C-Factor) Test (Cl 6.26): The test for conductivity is extensive and is primarily for the critical thermo bulb component, procured externally. Alternative tests such as operating temperature, heat exposure, freezing, thermal shock, and strength of the heat-responsive element provide sufficient assurance of quality. Conducting the C-Factor test adds unnecessary complexity and costs, hindering smooth implementation.

3. Practical Issues with Fire and Conductivity Tests: The frequency of these tests is impractical, requiring 144 samples for conductivity tests and 36 samples each for fire and wood crib fire tests. The infrastructure and costs involved are beyond the capacity of a typical licensee.

4. Challenges in Water Distribution Test (Cl 10.1): This test presents several challenges, including the need for a large number of wood cribs and issues with conditioning them. The test does not seem to provide additional value beyond the standard water distribution tests and increases testing time and costs without clear practical benefits.

5. Hazardous Gases in Corrosion Tests (Cl 6.22.3 and Cl 6.22.4): The requirement to use hazardous gases like sulphur dioxide and hydrogen sulphide, which are difficult to source in lab-scale cylinders and pose significant safety concerns, is another barrier to implementation.

Given these challenges, stakeholders are requesting the following actions to facilitate the practical implementation of the revised standard:

- Formation of a Technical Committee: Formation of a committee comprising technical experts in the sprinkler field to discuss and find solutions for these practical challenges.

- Expedite the availability of independent BIS-recognized laboratories to facilitate the testing process.

- Extension of Implementation Deadline: Requesting an extension of the implementation date until the above actions are completed.

Comments received from industries regarding difficulties faced in implementation of revised IS is attached.

The Subcommittee may **CONSIDER**.

4.2 Comments on IS 15105: 2021 Design, Installation and Maintenance of Fixed Automatic Sprinkler Fire Extinguishing Systems — Code of Practice (*First Revision*)

4.2.1 Shri P D KAMAT, Shubhada Engineering, Mumbai has indicated the following:

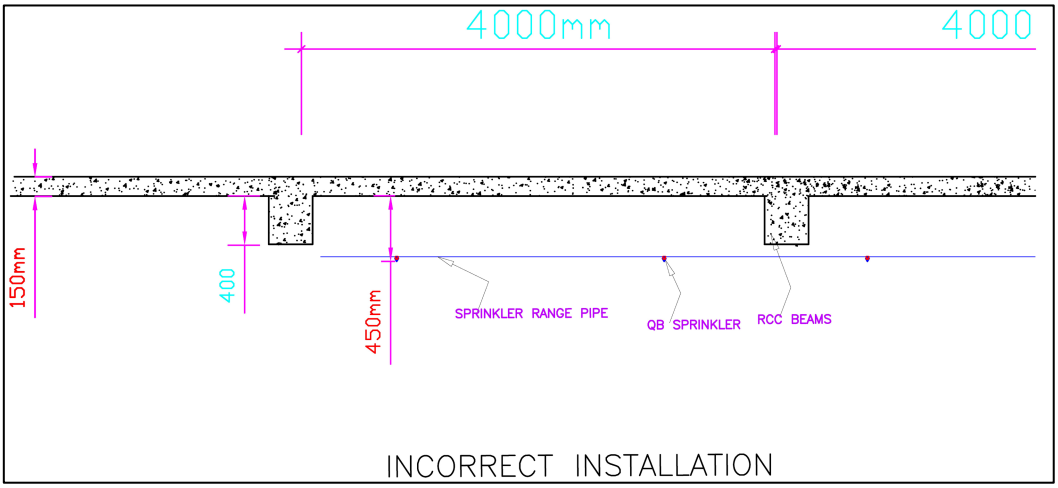
Wherever there is Fire, the flame/heat first goes up bypassing the sprinkler. The flame/heat then gets accumulated below the ceiling, moves down and then comes in contact with sprinkler with sufficient temperature to make the sprinkler operate.

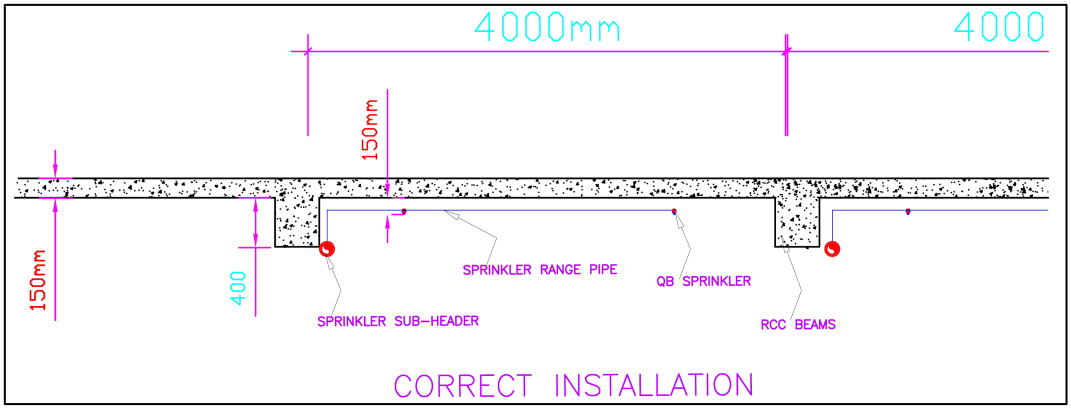
Because of this, Sprinkler installed closer to celling will come into operation faster. For this reason, in IS 15105: 2002, the sprinklers were permitted to be located maximum of 150 mm below the ceiling (clause no. 11.4.1.1 page no. 26)

However, the revised IS 15105:2021 clause no. 9.17.6 page no. 28 permits Sprinkler to be located up to 450mm below the ceiling.

This will certainly delay the operation of Sprinkler and by the time the Sprinkler comes into operation it will be too late.

I am enclosing herewith drawing showing the correct & incorrect way of installing Sprinklers.





The Subcommittee may **CONSIDER**.

Item 5 PROGRAMME OF WORK

5.1 The present position of the Programme of Work listing all the standards under CED 22, and all its subcommittees is enclosed at **Annex 3**. The standards which come under CED 22:4 is given at **Annex 4**.

The Subcommittee may **NOTE.**

5.2 Comprehensive Review of Indian Standards

5.2.1 As per the provisions of BIS standards need to be reviewed in minimum 5-years period with respect to reaffirmation, revise, or withdrawal. The standards highlighted in **Annex 4** are due for review in year 2024-2025.

The Subcommittee may **CONSIDER**.

Item 6 LIST OF ISO STANDARDS

6.1 India is an Observer 'O' member in ISO Technical Committee ISO/TC 21 'Equipment for fire protection and fire fighting' and its subcommittees namely,

1) ISO/TC 21/SC 2 'Manual transportable fire extinguishers'
2) ISO/TC 21/SC 3 'Fire detection and alarm systems'
3) ISO/TC 21/SC 5 'Fixed firefighting system using water'
4) ISO/TC 21/SC 6 'Foam and powder media and fire fighting system using foam and powder'
5) ISO/TC 21/SC 8 'Gaseous media and firefighting systems using gas'
6) ISO/TC 21/SC 11 Smoke and heat control systems and components.

6.2 A list of the standards that have been developed by the ISO/TC 21 is given in **Annex 5**.

Item 7 e-SALE OF INDIAN STANDARDS

7.1 All the published Indian Standards are available at https://standardsbis.bsbedge.com/. All the indigenous Indian Standards can be downloaded for free.

Item 8 ANY OTHER BUSINESS