

टीएनएंडएमडी

संदर्भ: टीएनएमडी/एसपी/4

7 मार्च 2023

**विषय: इंजीनियरिंग और अन्य कॉलेजों के तहत मानक क्लब गतिविधियों के लिए पूरक दिशानिर्देश**

भारतीय मानक ब्यूरो के सभी विभागों/क्षेत्रीय कार्यालयों/शाखा कार्यालयों/प्रयोगशालाओं से अनुरोध है कि उपरोक्त विषय से सम्बंधित सलग्न प्रपत्र का अनुपालन हेतु अवलोकन करें।

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**वैज्ञानिक एफ एवं प्रमुख (टीएनएमडी)**

मुख्यालय के सभी विभागों/क्षेत्रीय एवं शाखा कार्यालयों/प्रयोगशालाओं को परिचालित (इंट्रानेट के माध्यम से)

TN&MD

Ref: TNMD/SP/4

7 March 2023

**Subject: Supplementary Guidelines for Standards Club activities under Engineering & Other colleges**

All Department at HQs/Regional Offices/Branch Offices/Labs may kindly see the attached circular on the subject mentioned above for compliance.

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Sc. 'C' (TNMD)

**Sc F & Head (TNMD)**

**Circulated to all Department at HQs/ROs/BOs/Labs (Through Intranet)**

## Supplementary Guidelines for Standards Club activities under Engineering & Other colleges

### 1. Introduction

1.1 Standards Clubs are being established under educational institutions and various activities are being undertaken therein as per the Guidelines for Standards Clubs, the latest version of which is dated 15 Nov 2022. Majority of the Standards Clubs have been established under schools and therefore the types of activities have also been largely those appropriate for the school children. With the experience gained, efforts are now being made towards establishing more such Clubs under higher institutions such as the Engineering Colleges for which provisions for higher financial support have already been made under the existing guidelines (Refer Item 5.4.3).

1.2 These supplementary guidelines primarily provide details of activities to be undertaken in the Standards Clubs established in Engineering colleges and other institutions as different from schools. It is envisaged that members of these Clubs would engage in a higher level of activities for exploring the ecosystem of quality and standards.

### 2. Categorization of Standards Clubs

2.1 Following broad categorization have been made for the Standards Clubs:

- a) **Standards Clubs in Schools** – Students pursuing studies in science subjects in Class 9<sup>th</sup> to 12<sup>th</sup> and ITI Diploma & Certificates Courses
- b) **Standards Clubs in Colleges** - Students pursuing degree courses in science related subjects in Engineering & Science colleges, University Deptts., Professional courses institutions and Polytechnics

2.2 To facilitate discipline-wise activities, the Standards Clubs in Engineering Colleges may be made Deptt.-wise/Discipline-wise e.g., Mechanical Engg., Civil Engg. etc. wherein the Mentors could be the Professors/Lecturers of the respective Deptt/Discipline. Thus, there could be more than one such Standards Club in a single Engineering college. The required Affidavit and Account details could be submitted Principal/Director of the institution or Head of the Deptts. or Administrative Head on specific authorization by the Head of the institution. Identification of such Clubs and their listing on the Standards Promotion Portal would be as per the designation/Ids as decided by ITSD.

### 3. Activities under Standards Clubs in Colleges

3.1 Each Standards Club in Colleges should organize at least two activities in an academic year. Activities could be in the form of workshops/seminars on specific standards, identifying areas for developing new standards, industry-oriented projects on standards, etc. and competitions on writing standards, debates, quiz etc. engaging student members in brain-storming sessions and creative thinking.

3.2 Suggested activities for the Standards Club in Colleges are as given below.

- a) Presentation on Standards
- b) Standards Parliament
- c) Treasure-hunt via Standards (TvS)
- d) Ad-Mad
- e) Technical Quiz
- f) Standards Hunt

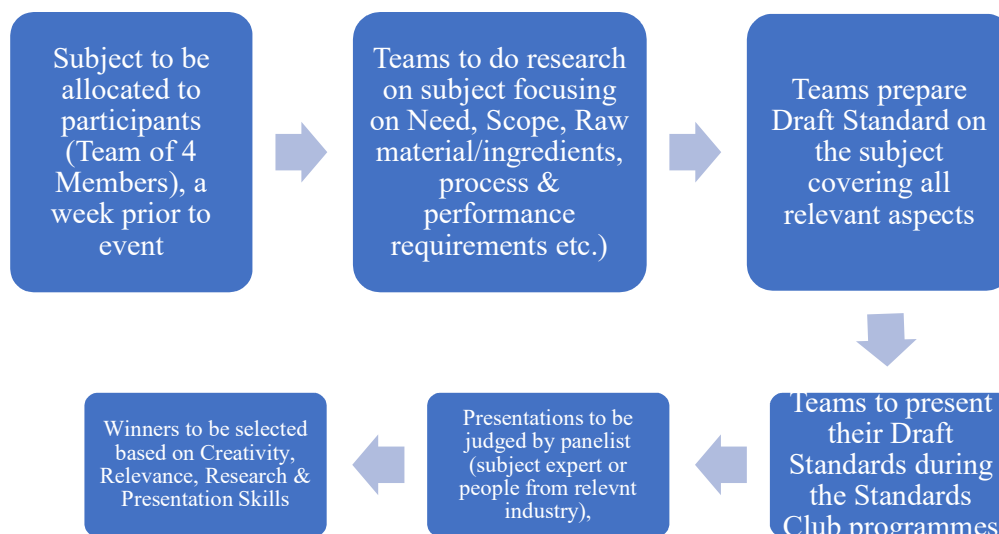
- g) Crosswords on a mix of subjects involving scientific principles & laws, terminologies, inventors, interdisciplinary topics etc.
- h) Skits on identified subjects
- i) Showcasing standards – Writing standards
- j) Explore – identify all the components used in the product
- k) Mock Technical Committee Meeting
- l) JAM Sessions (Just a Minutes) etc.

3.3 Details of some of the suggested activities are given in the Annexure.

3.4 Topics for activities under the Clubs could be selected based on importance of subject in day-to-day life, interest of participants as well as promoting inquisitiveness and creativity. The BIS officers and Resource Personnel engaged for facilitating activities under the Clubs should interact with the Mentors and Core Group for decision in this regard. Open forum discussions could be held on existing standards and emerging technologies and industrial visits could also be planned. Some illustrative general topics are given below:

- a) Standards for everything
- b) World without standards
- c) Touring the world of standards.
- d) World of Standard and Standards of the World,
- e) Sustainability
- f) Circular Economy
- g) Standards to channelize growth
- h) Cost of quality /poor quality
- i) Standards made in non-standards way
- j) Is standard a necessity or a fad
- k) Quality above standards etc.

3.5 It would be desirable to plan a variety of activities, either on a particular subject or a combination of subjects so that the students are engaged for the whole day. Standards Clubs activities may also be aligned with other programmes/functions of the educational institutions and/or dedicated national day celebrations.

AnnexureSuggested Activities under Standards Clubs in Colleges**1. Presentation on Standards****2. Treasure via Standards (TvS) Hunt**  
(Standard-based Treasure Hunt)

Treasure via Standards Hunt activity would involve searching for hidden items or clues using a set of predetermined guidelines or rules. These guidelines or rules could be based on established standards, such as a particular coding language or protocol, or a specific set of safety regulations, requirements etc. Participants would need to use their knowledge of these standards to decipher clues and locate the hidden items. This type of activity could be used to reinforce understanding of standards or regulations in a fun and engaging way, and to encourage participants to apply their knowledge in a practical setting.

**Illustrative Design of TvS Hunt activity for Indian standard on pressure cookers:**

**Objective:** To reinforce understanding of Indian Standard on Pressure Cookers (IS 2347:2007) in a fun and engaging way.

**Activity:**

- i) Divide the participants into teams of 4-5 members.
- ii) Provide each team with a copy of Indian Standard on Pressure Cookers (IS 2347:2007) and explain the important safety guidelines.
- iii) Hide clues in various locations around the area, and provide each team with a set of clues that they need to decipher in order to find the next clue.
- iv) Each clue should be related to a specific aspect of the IS 2347:2007 standard, such as the maximum pressure limit or safety valve requirements.
- v) Once a team finds a clue, they should answer a question related to that aspect of the standard in order to proceed to the next clue.
- vi) Team that reaches the final clue and solves the final puzzle first wins the treasure hunt.

### 3. Standards Parliament

**3.1 Introduction** - Participating student members to form Groups (like Parties in a democracy). On the day of the (Parliament) Session, the deliberation will be chaired by Speaker (from related Industry, Academia, Expert etc.). The parties would deliberate on the identified subjects like Acts/Rules/ Regulations/Amendments related to QCOs/Indian Standards. Views may be put forth by the parties in power, opposition, others and also independents members (Groups of students). The deliberations may cover social, economic, political and sustainability factors along with technical aspects related to the subject.

e.g. : Quality Control Order on Fatty Acids  
Addressing sustainability in standards  
Regulations for All Products to Follow Standards

### 3.2 Activity:

- a) Identify topic for debate: The topic for discussion could be a current issue or challenge related to standards, or a particular standard that is important for the engineering discipline or subject of science.
- b) Formulate teams: Divide the club members into two or more teams, with each team representing a different viewpoint or perspective on the chosen topic.
- c) Research and preparation: Each team should conduct research on their assigned viewpoint and prepare arguments and evidence to support their position. They can use resources such as published literature, industry standards, case studies, and expert opinions.
- d) Debate: The teams present their arguments and evidence in turn, with the opposing team given the opportunity to respond and refute. This should be done in a structured and organized way, such as through a parliamentary debate format.
- e) Consensus-building: The aim of the debate is to arrive at a consensus or decision on the topic. This can be done through a vote, or through a discussion in which the members of the opposing teams identify areas of agreement and work together to find a solution or compromise.

### 3.3 Benefits of standards parliament as an activity under Standards Clubs

- a) Promotes awareness and understanding of standards: Activity encourages club members to learn about different standards, their purpose, and their importance.
- b) Enhances critical thinking and problem-solving skills: The debate format requires club members to research and analyze different viewpoints, and to formulate arguments based on evidence and logic.
- c) Improves communication and public speaking skills: Activity provides opportunities for Club members to practice public speaking, and to communicate their ideas and opinions effectively.
- d) Fosters teamwork and collaboration: The opposing teams work together to prepare and present their arguments, and to find common ground in order to reach a consensus.

- e) Overall, the standards parliament activity can be a valuable tool for standards clubs in engineering colleges to promote understanding and appreciation of standards, and to develop important skills and qualities in club members.

### 3.4 Illustration of Standards Parliament activity under Standards Clubs

**Topic:** Use of Sustainable Materials in Construction Industry

**Teams:** **Team A:** Arguing for the mandatory use of sustainable materials in construction industry, based on the premise that it is essential to protect the environment and ensure long-term sustainability.

**Team B:** Arguing against the mandatory use of sustainable materials in the construction industry, based on the premise that it is not cost-effective and that the quality of materials may be inferior.

**Debate:** Team A presents their argument, using examples of the negative impact of traditional construction materials on the environment, and the benefits of using sustainable materials such as bamboo, timber, and natural stone. They also highlight the long-term cost savings associated with using sustainable materials.

Team B responds by citing the high initial cost of sustainable materials, which may be prohibitive for smaller construction companies, and the potential quality and safety issues that could arise from using untested or unproven materials.

Team A rebuts by presenting examples of successful projects that have used sustainable materials, and the availability of established standards and certifications for sustainable materials that ensure their safety and quality.

Team B rebuts by questioning the viability of sustainable materials for use in larger and more complex construction projects, and the potential challenges associated with sourcing and transporting such materials.

**Consensus-building:** After the debate, the club members hold a discussion in which they identify areas of agreement and seek to find common ground. They identify that while there may be initial cost and quality challenges associated with using sustainable materials in construction, there are long-term environmental and economic benefits that could justify their use. They also agree that established standards and certifications for sustainable materials are important to ensure their safety and quality.

**Conclusion -** The standards parliament activity can provide a valuable platform for standards clubs in engineering colleges to engage in informed and constructive debate and discussion, and to promote greater understanding and appreciation of standards and their impact on the engineering discipline.

## 4. Ad-Mad for Standards Clubs in Colleges

**4.1 Introduction:** Ad-Mad activity is a creative and engaging way to promote awareness and understanding of standards among members of standards clubs. The activity involves creating and presenting a short advertisement that highlights the importance and benefits of complying with specific standards e.g., the National Building Code and Indian Standards in Construction sector.

#### 4.2 Activity:

- a) **Dividing the members into teams:** Divide the club members into small teams of 3-5 members for creating and presenting their own advertisement.
- b) **Topic selection:** Choose a specific standard to focus on e.g., the National Building Code of India, which lays down minimum requirements for the design and construction of buildings, or Indian Standards related to construction materials, such as cement, concrete, or steel.
- c) **Research:** Each team should conduct research on the standard and its importance, using resources such as the relevant documents, case studies, and expert opinions.
- d) **Advertisement creation:** Teams should then create an advertisement that highlights the benefits of complying with the standard, and the potential consequences of not doing so. The advertisement should be creative and engaging, and can be in any format, such as a video, poster, or skit.
- e) **Presentation:** Each team should present their advertisement to the rest of the group. The presentations should be short (no more than 3-5 minutes) and should focus on the key message of the advertisement.
- f) **Evaluation:** The rest of the group should evaluate each presentation based on criteria such as creativity, clarity of message, and effectiveness in promoting the standard.
- g) **Discussion:** After all the presentations have been made, the group should hold a discussion on the importance of the standard, the challenges of complying with it, and ways to encourage greater adherence to the standard in the construction sector.

#### 4.3 Benefits of Ad Mad activity for Standards Clubs in Engineering Colleges

- a) **Promotes awareness and understanding of standards:** The activity encourages club members to learn about specific standards and their importance in the construction sector.
- b) **Enhances creativity and communication skills:** The advertisement creation and presentation require club members to be creative in their approach and to communicate their ideas effectively.
- c) **Encourages teamwork and collaboration:** The activity fosters teamwork and collaboration among the club members, as they work together to create and present their advertisements.
- d) **Reinforces the importance of compliance:** The activity highlights the potential consequences of non-compliance with standards, and reinforces the importance of adhering to them to ensure the safety and quality of construction projects.

**4.4 Conclusion** - Ad Mad activity is an effective and engaging way to promote awareness and understanding of standards among members of standards clubs in colleges, while also reinforcing the importance of compliance with specific standards in the construction sector, such as the National Building Code of India and Indian Standards related to construction materials.

### 5. Mock Technical Committee Meeting

**5.1 Introduction** – Activity of Mock technical committee meeting on standardization of identified subject/group of subjects encourages the following:

- a) Providing college student members with a hands-on learning experience in the field of standardization and technical committee meetings.
- b) Enabling students to understand the importance of standardization in ensuring safety and quality of products.
- c) Gaining insight into the technical specifications, manufacturing processes, quality and performance characteristics, handling storage etc.

- d) Encouraging students to think critically about the practical aspects and implications of standardization in a real-world context.
- e) Providing opportunity to engage in collaborative decision-making and problem-solving in a simulated technical committee meeting.
- f) Fostering communication and teamwork skills among students as they take on different roles and work towards a common goal.
- g) Increasing awareness among students of the role of regulatory bodies and consumer representatives in the standardization process.
- h) Providing a forum for students to exchange ideas and perspectives on standardization of a variety of subjects.

## 5.2 Illustration of Mock Technical Committee meeting on standardization. of

- a) Introduction of Topic - Pneumatic tyres for trucks
- b) Importance of standardization for ensuring quality of products and safety.
- c) Define the objective of the meeting - To discuss and agree upon the standards for pneumatic tyres for trucks that will ensure the safety and performance of the tyres and also considering the practical aspects of manufacturing and usage.
- d) Assign roles to the students such as
  - i) Chairperson to lead the meeting and ensuring that everyone follows the agenda and stays on topic.
  - ii) Technical experts, representing different tyre manufacturers or in personal capacity, for providing technical input on the subject.
  - iii) Regulatory experts, representing government agencies and ensuring that the standards are aligned with relevant regulations.
  - iv) Consumer representatives for ensuring that the standards reflect the needs and expectations of end-users.
  - v) Secretary for presenting the Agenda and taking notes of the meeting.
- e) Develop an agenda for the meeting, which should include the following items:
  - Welcome and introductions
  - Review of the objectives and agenda
  - Presentation of technical requirements for pneumatic tyres for trucks
  - Discussion of manufacturing and practical aspects
  - Review of relevant regulations and safety standards
  - Input from consumer representatives on usability and performance
  - Proposals for draft standards and guidelines
  - Discussion of the benefits and challenges of the proposed standards
  - Vote on the adoption of the proposed standards
  - Review of action items and next steps
  - Closing remarks
- f) Conduct the meeting as per the agenda with members playing out assigned roles. The meeting should conclude with a vote on the adoption of the proposed standards.
- g) Debrief the students and evaluate the effectiveness of the meeting. Ask for feedback on the agenda, the roles, the discussion, and the voting process. Discuss what worked well and what could be improved for future mock technical committee meetings.

## 6. Technical Quiz

Technical quiz aims to test students' knowledge about different standards and their applications relating to the scientific and engineering principles. The questions could be selected from a vast variety of topics ranging from product characteristics to management systems, test methods and code of practices, national and international standards which could be directly related to the classroom studies.