



# ISO Form 4

## NEW WORK ITEM PROPOSAL (NP)

<b>Circulation date:</b> 2025-06-10	<b>Reference number:</b> ISO/NP 25984  ISO/TC 296  <b>N 213</b>
<b>Closing date for voting:</b> 2025-09-02	
<b>Proposer</b> SAC	
<b>Secretariat</b> SAC	

A proposal for a new work item within the scope of an existing committee shall be submitted to the secretariat of that committee.

A proposal for a new project committee shall be submitted to the Central Secretariat, which will process the proposal in accordance with ISO/IEC Directives, Part 1, Clause 2.3.

Guidelines for proposing and justifying new work items or new fields of technical activity (Project Committee) are given in ISO/IEC Directives, Part 1, Annex C.

**IMPORTANT NOTE:** Proposals without adequate justification and supporting information risk rejection or referral to the originator.

☒ The proposer confirms that this proposal has been drafted in compliance with Annex C of ISO/IEC Directives, Part 1.

### PROPOSAL

(to be completed by the proposer, following discussion with committee leadership if appropriate)

<p><b>TITLE</b></p> <p><b>English title:</b></p> <p>Bamboo-based packing products for cooling tower</p> <p><b>French title:</b></p> <p><i>(In the case of an amendment, revision or a new part of an existing document, show the reference number and current title)</i></p>
<p><b>SCOPE</b></p> <p>It always used in cooling tower, removes heat as a cooling materials used for power plant, petrochemicalrefrigeration and air condition processes</p>
<p><b>PURPOSE AND JUSTIFICATION</b></p> <p>The cooling tower is an important energy-saving cooling device in the thermal power generation industry. The global market size of cooling towers in 2021 was 3.2431 billion US dollars. It is expected that the global market size of cooling towers will reach 5.3342 billion US dollars by 2030. Among them, the market for cooling tower fillers, which account for 60% to 80% of the cooling capacity, is huge, reaching a scale of 2.5 billion US dollars in 2023. However, with the proposal of the dual-carbon target strategy, the plastic water-filling fillers that currently account for the largest proportion in the market no longer meet the strategic requirements of low-carbon and environmental protection, and have defects such as easy accumulation of dirt and short service life. The annual replacement volume is 150 to 180 million cubic meters, consuming a large amount of petrochemical resources, and is difficult to degrade. Bamboo water-filling fillers, as a new type of water-filling filler, have advantages such as high strength and low cost, and have significantly better durability and service life compared to plastic water-filling fillers. In recent years, as our understanding of the properties of bamboo materials has gradually improved, there have been significant progress in the standardization and normalization of bamboo water-filling fillers. However, there is only one industry standard, "Technical Conditions for Bamboo Water-Filling Fillers in Thermal Power Plants Cooling Towers", for the standards of bamboo water-filling fillers. It does not stipulate the characteristics of bamboo materials after wet and heat aging, such as deformation characteristics, wet weight characteristics, and low-temperature cold resistance performance, especially when the producers of bamboo water-filling fillers negotiate business with foreign enterprises, there is no international standard for reference, which has a great impact on the development of this product.</p>
<p><b>Sustainable Development Goals (SDGs)</b></p> <p>Goal 1: No Poverty By establishing recognized quality and performance benchmarks, the standard supports market expansion and value chain development, benefiting bamboo-producing rural areas and reducing poverty.</p> <p>Goal 3: Good Health and Well-Being for People By ensuring bamboo packing products meet hygiene, durability, and safety requirements (e.g., reduced microbial growth and chemical leaching), the standard supports safer working environments and public health.</p> <p>Goal 9: Industry, Innovation, and Infrastructure The standard promotes technological innovation in material science and industrial applications, fostering eco-conscious infrastructure development.</p> <p>Goal 11: Sustainable Cities and Communities Promoting reliable, bio-based alternatives in utility systems supports the transition to greener urban infrastructure and resource-efficient cities.</p> <p>Goal 12: Responsible Consumption and Production Establishing lifecycle-focused product criteria supports sustainable sourcing, production, use, and disposal, advancing circular economy goals.</p> <p>Goal 13: Climate Action By encouraging the adoption of low-carbon materials in industrial processes, the standard supports</p>

emissions reduction and climate change mitigation.

### Preparatory work

- ☒ A draft is attached      ☐ An outline is attached      ☐ An existing document serving as the initial basis is attached

The proposer is prepared to undertake the preparatory work required:

- ☒ Yes      ☐ No

### If a draft is attached to this proposal:

Please select from one of the following options:

- ☒ The draft document can be registered at Preparatory stage (WD – stage 20.00)  
☐ The draft document can be registered at Committee stage (CD – stage 30.00)  
☐ The draft document can be registered at enquiry stage (DIS – stage 40.00)

If the attached document is copyrighted or includes copyrighted content:

- ☐ The proposer confirms that copyright permission has been granted for ISO to use this content in compliance with the ISO/IEC Directives, Part 1 (see also the Declaration on copyright).

### Is this proposal for an ISO management System Standard (MSS)?

- ☐ Yes      ☒ No

Note: If yes, this proposal must have an accompanying justification study. Please see the Consolidated Supplement to the ISO/IEC Directives, Part 1, Annex SL or Annex JG

### Indication of the preferred type to be developed

- ☒ International Standard      ☐ Technical Specification  
☐ Publicly Available Specification \*

\* While a formal NP ballot is not required to start developing a PAS (no eForm04), the NP form may provide useful information for the committee P-members to consider when deciding to initiate a Publicly Available Specification.

### Proposed Standard Development Track (SDT – to be discussed by the proposer with the committee manager or ISO/CS)

- ☐ 18 months      ☐ 24 months      ☒ 36 months

<b>Draft project plan (as discussed with committee leadership)</b> Proposed date for first meeting: <a href="#">2025-11-13</a> Dates for key milestones: Circulation of 1st Working Draft (if any) to experts: <a href="#">2025-09-19</a> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <span>Committee Draft consultation (if any):</span> <span><a href="#">2027-03-10</a></span> </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <span>DIS submission*:</span> <span><a href="#">2027-10-15</a></span> </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <span>Publication*:</span> <span><a href="#">2028-04-17</a></span> </div> <p style="font-size: small; margin-top: 10px;">* Target Dates for DIS submission and Publication should be set a few weeks ahead of the limit dates automatically determined when selecting the SDT.</p> <p style="font-size: small;">NOTE: <a href="#">ISO/Meetings</a> and <a href="#">ISO/Projects</a> allow you to register and continuously update the meeting dates and project target dates during the development of the project.</p>	
<b>Known patented items (see ISO/IEC Directives, Part 1 for important guidance)</b> <div style="display: flex; align-items: center; margin-top: 5px;"> <input type="checkbox"/> Yes         <input checked="" type="checkbox"/> No       </div> <p style="font-size: small; margin-top: 10px;">If "Yes", provide full information as annex</p>	
<b>Co-ordination of work:</b> To the best of your knowledge, has this or a similar proposal been submitted to another standards development organization? <div style="display: flex; align-items: center; margin-top: 5px;"> <input type="checkbox"/> Yes         <input checked="" type="checkbox"/> No       </div> <p style="font-size: small; margin-top: 10px;">If "Yes", please specify which one(s):</p>	
<b>Listing of relevant documents (such as standards and regulations) at international, regional and national level</b> <div style="margin-top: 10px;"> <a href="#">ISO 11855-2:2021 Embedded radiant heating and cooling systems — Part 2: Determination of the design heating and cooling capacity</a>  <a href="#">ISO 16345:2014 Water-cooling towers — Testing and rating of thermal performance</a> </div>	
<b>Identification and description of relevant affected stakeholder categories (Please see ISO CONNECT)</b>	
	Benefits/Impacts/Examples
<b>Industry and commerce - large industry</b>	<a href="#">Improve product quality and enhance production efficiency. Jiangsu Hengda Bamboo Grid Packing Co., Ltd.</a>
<b>Industry and commerce - SMEs</b>	<a href="#">Reduce power generation costs and increase production capacity. China Railway No. 18 Bureau Group</a>
<b>Government</b>	<a href="#">Promoting more and more countries to reduce plastic pollution and address climate change, providing scientific and standardized methods to assess product quality. Countries such as China, India, Vietnam, Malaysia, Colombia, etc.</a>
<b>Consumers</b>	<a href="#">Provide bamboo-based water-filling fillers with low cost and excellent energy-saving performance, thereby reducing energy costs. This solution is applicable in countries such as France, the Netherlands, and Australia</a>
<b>Labour</b>	<a href="#">Increase income and expand the application scope of bamboo in cross-disciplinary fields. The International Bamboo and Rattan Organization (INBAR)</a>
<b>Academic and research bodies</b>	<a href="#">Promote international trade. Jiangsu Hengda Bamboo Mesh</a>

<b>Standards application businesses</b> Packing Materials Co., Ltd. Provide scientific and standardized methods for evaluating product quality. China Bamboo Industry Association, China Electric Power Industry Federation, etc	
<b>Non-governmental organizations</b> <b>Other (please specify)</b>	
<b>Liaisons:</b> A listing of relevant external international organizations or internal parties (other ISO and/or IEC committees) to be engaged as liaisons in the development of the deliverable.  <a href="#">International Network for Bamboo and Rattan (INBAR) and ISO/TC 205</a>	<b>Joint/parallel work:</b> <b>Possible joint/parallel work with:</b> <input type="checkbox"/> IEC (please specify committee ID)  <input type="checkbox"/> CEN (please specify committee ID)  <input type="checkbox"/> Other (please specify)
<b>A listing of relevant countries which are not already P-members of the committee.</b>   Note: The Committee Manager shall distribute this NP to the ISO members of the countries listed above to ask if they wish to participate in this work	
<b>Proposed Project Leader</b> (name and e-mail address)  <a href="#">Xinxin Ma</a> <a href="mailto:maxx@icbr.ac.cn">maxx@icbr.ac.cn</a>	<b>Name of the Proposer</b> (include contact information)  <a href="#">XIAO Han</a> <a href="mailto:sac_82261017@126.com">sac_82261017@126.com</a>
<b>This proposal will be developed by:</b> <input type="checkbox"/> An existing Working Group: <input checked="" type="checkbox"/> A new Working Group: <a href="#">(title: Working group for bamboo engineering applications)</a> (Note: establishment of a new Working Group requires approval by the parent committee) <input type="checkbox"/> The TC/SC directly <input type="checkbox"/> To be determined:	

**Supplementary information relating to the proposal**

- ☒ This proposal relates to a new ISO document
- ☐ This proposal relates to the adoption as an active project of an item currently registered as a Preliminary Work Item
- ☐ This proposal relates to the re-establishment of a cancelled project as an active project

Other:

**Maintenance agencies (MA) and registration authorities (RA)**

- ☐ This proposal requires the designation of a maintenance agency. If so, please identify the potential candidate:
- ☐ This proposal requires the designation of a registration authority. If so, please identify the potential candidate:

NOTE: Selection and appointment of the MA or RA are subject to the procedure outlined in ISO/IEC Directives, Part 1, Annex G and Annex H.

- ☒ Annex(es) are included with this proposal (provide details)

[1st draft of bamboo-based packing products for cooling tower and the general introduction](#)

**Additional information/question(s)**