ISO Form 4
NEW WORK ITEM PROPOSAL (NP)

Circulation date: 2025-06-10 **Closing date for voting:** 2025-09-02	**Reference number:** ISO/NP 25983 ISO/TC 296 **N 210**
Proposer SAC	
Secretariat 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)

TITLE

English title:

Bamboo winding composite pipe

French title:

(In the case of an amendment, revision or a new part of an existing document, show the reference number and current title)

SCOPE

This International Standard specifies the terms and definitions, classification and marking, technical requirements, test methods, inspection rules, signs, packaging, transportation and storage of bamboo winding composite pipes.
It is applicable to bamboo winding composite pipe with a nominal diameter of 150 mm - 3,000 mm, pressure level not greater than 1.6 MPa, ring stiffness class of 5000 N/m2 - 20 000 N/m2, operating ambient temperature of -40°C - 80°C, with a maximum temperature not exceeding 90°C for the transmitted medium, for hydraulic, municipal, industrial water supply and drainage works applications.

PURPOSE AND JUSTIFICATION

Traditional pipes such as metal corrugated pipes, plastic pipes, and cement pipes have been widely used in global infrastructure construction for many years, but they pose multiple hazards to the ecological environment. According to the United Nations Environment Programme, the annual environmental remediation costs generated by the production and disposal of traditional pipes worldwide exceed $12 billion, becoming a key bottleneck restricting carbon neutrality goals and the development of circular economy.
Bamboo has the advantages of fast growth rate, bamboo maturity, and short rotation period, making it an excellent natural renewable and biodegradable resource. The bamboo industry, which develops and utilizes bamboo resources, is a globally recognized green and low-carbon industry. It provides economic income, food, and housing for 2.5 billion people worldwide every year, and the annual trade volume of bamboo products worldwide exceeds 8.5 billion US dollars. Bamboo wrapped composite pipe is a new type of bio based pressure pipeline made of bamboo as the substrate and processed through winding technology. It has the characteristics of energy saving and emission reduction, carbon sequestration and storage, lightweight and high strength, good insulation performance, seawater corrosion resistance, good sound insulation performance, and good fire resistance. Bamboo wrapped composite pipes have significant economic and environmental benefits as they can replace most traditional pipes in the market, such as spiral welded pipes, prestressed steel cylinder concrete pipes, plastics, and metals, at a lower cost than traditional materials. At present, there are no bamboo winding related standards in the ISO international standards, which limits the development of bamboo winding composite pipes in the international market. The formulation of this standard can significantly enhance the visibility of bamboo winding composite pipes in the international market, promote the standardized development of the bamboo winding composite pipe industry, and contribute to the global green environmental protection cause.
The development and implementation of the ISO international standard for "Bamboo Wrapped Composite Pipe" is in line with the national industrial development policy in the current global era of carbon peak and carbon neutrality. It is of great significance for the development of the bamboo industry and the promotion of its green and low-carbon transformation. Therefore, a proposal for the ISO international standard for "Bamboo Wrapped Composite Pipe" is proposed.

Sustainable Development Goals (SDGs)

Goal 1: No Poverty
The standard enhances market acceptance and supports value chain development that includes smallholder farmers and rural enterprises.

Goal 8: Decent Work and Economic Growth
It promotes safe, consistent, and scalable production methods, encouraging job creation with better working conditions and technical upskilling.

Goal 9: Industry, Innovation, and Infrastructure

The standard supports innovation in bio-based composites and enables integration of bamboo-based materials into infrastructure development globally.

Goal 12: Responsible Consumption and Production
It encourages the use of renewable, eco-friendly materials and promotes efficient processing, contributing to sustainable material use and reduced environmental impact.

Goal 13: Climate Action
Promoting bamboo winding composite pipes as a viable alternative supports low-carbon infrastructure and mitigates climate change by reducing emissions associated with conventional pipe materials.

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 workrequired:

☒ 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

Draft project plan (as discussed with committee leadership)

Proposed date for first meeting: 2025-11-10

Dates for key milestones: Circulation of 1st Working Draft (if any) to experts: 2025-09-15

Committee Draft consultation (if any): 2027-03-08

DIS submission*: 2027-10-29

Publication*: 2028-04-25

* Target Dates for DIS submission and Publication should be set a few weeks ahead of the limit dates automatically determined when selecting the SDT.

NOTE: ISO/Meetings and ISO/Projects allow you to register and continuously update the meeting dates and project target dates during the development of the project.

Known patented items (see ISO/IEC Directives, Part 1 for important guidance)

☐ Yes ☒ No

If "Yes", provide full information as annex

Co-ordination of work: To the best of your knowledge, has this or a similar proposal been submitted to another standards development organization?

☐ Yes ☒ No

If “Yes”, please specify which one(s):

Listing of relevant documents (such as standards and regulations) at international, regional and national level

ISO 11925-2: 2010, Reaction to fire tests. Ignitability of products subjected to direct impingement of flame. Part 2:Single-flame source test
ISO 14125: 1998, Fibre-reinforced plastic composites. Determination of flexural properties
ISO 30021: 2013, Plast. Burning behaviour. Intermediate-scale fire-resistance testing of fibre-reinforced polymer composites
ASTM D1599: 2014e1, Standard Test Method for Resistance to Short-Time Hydraulic Pressure of Plastic Pipe,Tubing,and Fittings
ASTM D2290: 2016, Standard Test Method for Apparent Hoop Tensile Strength of Plastic or Reinforced Plastic Pipe
ASTM D2291/D2291M: 2016, Standard Practice for Fabrication of Ring Test Specimens for Glass-Resin Composites
ASTM D2344/D2344M: 2016, Standard Test Method for Short-Beam Strength of Polymer Matrix Composite Materials and Their Laminates
ASTM D2412: 2011, Standard Test Method for Determination of External Loading Characteristics of Plastic Pipe by Parallel-Plate Loading
GB/T 3139: 2005 Fiber-reinforced plastics composites-Dtetermination of thermal conductivity
GB/T 8237: 2005 Liquid unsaturated polyester resin for fiber reinforced plastics

Identification and description of relevant affected stakeholder categories (Please see ISO CONNECT)

	Benefits/Impacts/Examples
Industry and commerce - large industry	Ensure product quality, improve enterprise management level and production level, build customer confidence, expand domestic and foreign market scale. Zhejiang Xinzhou Bamboo-based Composites Technology Co.,ltd.

Industry and commerce - SMEs	Ensure product quality, improve enterprise management level and production level, build customer confidence, expand domestic and foreign market scale. .Xinzhuhai(Shandong) Pipelines Co.,Ltd; China Railway Construction bamboo winding development Co., LTD
Government	This will help the government formulate relevant policies and regulations, and use bamboo winding composite pipes to agent high-pollution materials such as plastics, metals and concrete, and promote the green development of the industry.China, India, Malaysia, the Philippines, Indonesia, Kenya, Ethiopia, Nigeria, etc.
Consumers	To provide consumers with high quality, safety, environmental protection products. Franch, Netherland, United states, and Australia etc.
Labour	Provide more job opportunities. China, India, Malaysia, the Philippines, Indonesia, Kenya, Ethiopia, Nigeria, etc.
Academic and research bodies	The bamboo winding composite pipe can be studied in many aspects to provide a solid research and development foundation for the future development of products. International Centre for Bamboo and Rattan; National Forestry and Grassland Administration Engineering Research Center for Bamboo Winding Composites.
Standards application businesses	Standardize the production and sales of products, and improve the quality of bamboo wrapped composite pipes in international trade.Zhejiang Xinzhou Bamboo-based Composites Technology Co.,ltd.
Non-governmental organizations	Further enhance public awareness of bamboo wrapped composite pipes and promote global green and sustainable development.International Network for Bamboo and Rattan (INBAR); China Bamboo Industry Association,etc.
Other (please specify)	

Liaisons:	**Joint/parallel work:**
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. International Network for Bamboo and Rattan (INBAR)	**Possible joint/parallel work with:** ☐ IEC (please specify committee ID) ☐ CEN (please specify committee ID) ☐ Other (please specify)

A listing of relevant countries which are not already P-members of the committee.

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

Proposed Project Leader (name and e-mail address)	**Name of the Proposer** (include contact information)
Ye Ling xzip@xzbbc.com	XIAO Han sac_82261017@126.com

This proposal will be developed by:

☐ An existing Working Group:

☒ A new Working Group: (title: Working group for bamboo engineering applications)

(Note: establishment of a new Working Group requires approval by the parent committee)

☐ The TC/SC directly

☐ 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 for Bamboo winding composite pipe and the general introduction

Additional information/question(s)