NEW INTERNATIONAL STANDARD ON BAMBOO STRUCTURES FOR INBAR MEMBER STATES

The INBAR website reports that in June 2021 the International Organization on Standardization (ISO) published a new standard on structural design with bamboo poles representing a significant step forward for bamboo construction around the world.

The new standard ISO 22156 is a general framework laying out guidance for bamboo constructions. It is intended to act as the skeleton of a national design code that needs to be fleshed out in each country to adapt to their bamboo species and requirements.

The International Network for Bamboo & Rattan INBAR has been working with the International Organization for Standardization (ISO) to develop and publicize standards for bamboo and rattan products for many years. In particular, INBAR is a liaison organization of the ISO Technical Committee promoting the standardization of bamboo, rattan, and derived materials. In this framework, the new standard on structural design with bamboo poles was also developed with the support from INBAR staff and members of INBAR's Bamboo Construction Task Force.

Although bamboo is a common housing material in many parts of the world, until recently there were no international standards to regulate its use and designs. ISO 22156:2021 builds on previous standards published in 2004, providing more comprehensive guidelines for designers and architects about how to build with round bamboo. Specifically, the standard applies to the design of bamboo structures up to 7 metres high, "whose primary load bearing structure is made of round bamboo or shear panel systems in which the framing members are made from round bamboo", and specifies their "requirements for mechanical resistance, serviceability and durability".

According to the INBAR's Bamboo Construction Task Force, ISO 22156 is particularly important in the context of low-carbon housing. In recent years, increasing concerns about emissions from the construction sector, particularly the use of materials like cement and steel, has prompted a search for biobased alternatives. In developing countries, bamboo can be a fast-growing substitute for timber and ISO 22156 provides a solid basis for architects and engineers who want to build with bamboo.

In some countries where there is no significant commercial forestry, instead of waiting 30-50 years for tree forests to be planted and be ready to supply the market, bamboo forests can take 10 years to be established from scratch, assuring a steady and continuous production of stems. Stems are ready to harvest within 3-5 years after emerging from the ground. This speed, as well as the extraordinary strength of bamboo, offer the prospect of a quick transition to bio-based structures

and the ISO 22156 standard provides the solid basis from which to launch this transformation.

INBAR underlines that ISO 22156 new standard is one of the most important for INBAR Member States also taking into account other important aspects:

- It is the first bamboo standard written by a team of bamboo and construction experts from across the world. This includes critical support from several members of INBAR's Bamboo Construction Task Force.
- The standard builds on over 20 years of research into bamboo and is integrated into a suite of ISO standards that have been harmonized to complement it.
- This is also the most modern bamboo standard in the world, outlining in detail the process of connection and element design, as well as advising users clearly how to ensure bamboo structures are durable.

In accordance with is function of liaison organization to ISO, INBAR will help to disseminate the standard across its Member States, encouraging national standards authorities to adopt the guidelines, and sharing them with universities and architecture firms. The intergovernmental organization INBAR, established in 1997 in China, currently includes 48 Member States most of which are producers of bamboo and rattan.

A more comprehensive report on the new standard will be published in issue 4 of INBAR's Bamboo and Rattan Update magazine and INBAR invites all interested to subscribe to the Newsletter.

To know more

News ISO 22156 in INBAR website

ISO 22156 standard in ISO website

INBAR Task Force on Bamboo Construction

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