BUSINESS PLAN

CEN/TC 155

Plastics piping systems and ducting systems

EXECUTIVE SUMMARY

Business environment

- Piping systems are essential elements of the infra-structures in urban environments, in buildings, in irrigation systems and in industrial plants, among others. The controlled conveyance of fluids is an essential aspect of protection of people's health and the surrounding environment. These fluids are mainly water intended for human consumption, gas and waste waters, including rain water and surface water.
- Application sectors are design, construction, operation and installation of plastics piping systems for the conveyance of water intended for human consumption, for gas supply, for soil and waste discharge, for drainage and sewerage, for storm water handling, cable ducting, industrial applications….
- Parties involved:
  - raw material producers and product manufacturers;
  - system operators (e.g. water and gas companies);
  - legislators, public and semi-public authorities;
  - consultants and contractors;
  - test institutes (laboratories) and certifiers;
  - (end) users.
  - end of life managers (collectors and recyclers)

Benefits

European Standards of CEN/TC155 are used to establish the desired levels of commercial interoperability in Europe, considering its very significant position in the international market.

- Availability of standards to the market to cover its needs and the implementation of European Directives/Regulations and the need to reinforce the European internal market by removing technical barriers to trade, ensuring reliable information (common technical language and knowledge) and providing uniform assessment methods of the product performances including type testing and factory production control.
- Regional and international alignment of product specifications and test methods, improving interchangeability and flexibility.
- Confidence of users and end users in respect of high level of performance requirements, fitness for purpose, reliability and functional safety in the application fields of the plastics piping systems.

Since 1989, under the scope of the CEN/TC 155, more than 200 European Standards, including Technical Specifications and Technical Reports, have been published and adopted in all CEN Member States. Among these standards, 120 are EN ISO standards (i.e. identical standards in CEN and ISO organizations) granting for a common level playing field in the global market.

Priorities

To develop and make European standards available, and revise and update standards for the products and applications under the CEN/TC scope related to Performance, product assessment*, and installation;

- *Environmental aspects considered in European Standards mainly focus on Circular Economy aspects

1 BUSINESS ENVIRONMENT OF THE CEN/TC

1.1 Description of the Business Environment

The following political, economic, technical, regulatory, legal, societal and/or international dynamics describe the business environment of the industry sector, products, materials, disciplines or practices related to the scope of this CEN/TC, and they may significantly influence how the relevant standards development processes are conducted and the content of the resulting standards:

Legislative factors

The following legislative factors are to be observed:

- European Directives [1)], i.e.:

  - Construction Products Directive currently replaced by the Regulation No.305/2011/EC (CPR); The Construction Products Regulation (CPR), is a legal framework aiming at a single European market without trade barriers;

  - Drinking water Directive (DWD); The Drinking Water Directive (DWD) is a legal framework for aiming at optimal safety in regard to health;

  - Pressure Equipment Directive (PED);The Pressure Equipment Directive (PED) provides. for a legal framework covering the hazard regarding pressurised systems.

Apart from the a.m. legislative factors the business environment of the CEN/TC is also being influenced by the EU Action Plan for the Circular Economy and the further publication in 2018 of the **European Strategy for Plastics in a Circular Economy** which introduces certain measurements and objectives for the European Plastic Industry.

As an important part of the plastics industry, TEPPFA has signed the declaration under the Circular Plastic Alliance, to contribute to the aim of the Alliance of ensuring that 10 million tonnes of recycled plastics are used to make products in Europe in 2025.

Economical factors

The transition of the European Union towards a Circular Economy and the European Strategy for Plastics can be considered a major economical factor.

The existence of European standards generally increase interchangeability, and enables European-wide accepted third party certification and the beneficial concept of Mutual Recognition. Further installation of piping systems as an essential infra-structure is considered a long-term

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1) The Public Procurement Directive (PPD) is not listed, because this Directive does not directly influence the products. However it strongly favours the existence of European Standards in public purchasing, which forms a major market for piping systems.

investment. The further increase of confidence of customers in regard to this interchangeability and durability are also economical market factors.

1.2 Quantitative Indicators of the Business Environment

Unfortunately reliable figures on market shares could not be obtained, because existing data often includes plastics not used for plastics piping products or covers varying grouping of materials and/or products and/or intended use.

The total plastics piping systems market in Europe is about 15-20 billion Euros.

2 BENEFITS EXPECTED FROM THE WORK OF THE CEN/TC

Removal of technical barriers;
Common technical language and knowledge;
Uniform assessment methods of the product performances (including type testing and factory production control);
Support of European legislation;
Environment for stimulating and regulating innovation;
Contribution to sustainable piping networks.

3 PARTICIPATION IN THE CEN/TC

All the CEN national members are entitled to appoint delegates to CEN Technical Committees. Delegates represent the national standards organization and put forward the national view on issues that are dealt with during the plenary meetings.

CEN national members are also entitled to appoint experts to Working Groups, ensuring a balance of all interested parties. These Working Groups principally deal with technical issues.

Under certain conditions, participation as observer of recognized European or international organizations is also possible.

To participate in the activities of this CEN/TC, please contact the national standards organization in your country.

4 OBJECTIVES OF THE CEN/TC AND STRATEGIES FOR THEIR ACHIEVEMENT

4.1 Defined objectives of the CEN/TC

The objectives of the CEN/TC are the following:

- to provide the market with standards to cover its needs partly induced by the implementation of European Directives and/or Regulations;
- to enable harmonisation of existing voluntary certification practices for plastics piping systems;
- to promote regional and international harmonisation of product specifications and test methods;
- to stimulate innovation and reflect any developments in standards;
- to respond to environmental challenges, especially related to product environmental footprints, use of recyclates and other factors related to circular economy.

NOTE: The following types of standards were found necessary for this purpose:
- standards with product specifications;
- standards on test methods and common definitions
- standards giving guidance for the assessment of conformity;
- standards giving guidance for installation;
- standards intended to be harmonised in the light of the Directives (harmonised European Standards).

- standards that provide rules, requirements, and guidelines for developing an EPD or PEF. They are a key part to enable Environmental Product Declarations (EPDs) or Product Environmental Footprints (PEFs) of construction products. Construction services and construction processes are derived, verified and presented in a harmonized way (according to EN 15804).

4.2 Identified strategies to achieve the CEN/TC's defined objectives.

The TC established the following strategy to produce the standards:

- The CEN/TC created a relatively high number of WG's to cover the different applications/materials in order to involve as many dedicated experts as reasonably possible to support the expected high work load and to achieve a good commitment to the CEN work. To comply with CEN rules, some of the WGs were disbanded once their work was completed and some others created in order to give answer to new needs;
- To be as comprehensive as possible the structure of standards was chosen such that sets of standards would cover product specifications, system functionality, assessment of conformity and installation;
- The CEN/TC decided to follow the basic dimensioning principles established in ISO/TC 138 *Plastics pipes, fittings and valves for the transport of fluids*, as a basis for the products;
  The CEN/TC decided to use as a basis for its own specifications the product specifications as established in ISO/TC 138 as they were considered the result of compromises reached with the involvement of also CEN members;
- As ISO/TC 138 already published numerous test methods the TC decided wherever possible to refer to these standards. Further the CEN/TC decided in general not to develop new test methods but to leave such work to ISO/TC 138/SC 5 (methods relative to thermoplastics) or ISO/TC 138/SC 6 (methods relative to thermosetting plastics);
- To stablish liaisons with other CEN technical committees to co-ordinate the development of standards and to be kept informed of the work made by other committees; Liaison with international committees, to develop common standards in parallel and to harmonise global market and avoid the duplication of work: and partnership with other organisations which are interested by CEN/TC 155 work;
- To take advantage of the ongoing technical cooperation between CEN and ISO (Vienna Agreement) and its benefits to international trade and markets harmonization;
- The TC decided to draft harmonised European Standards separate from standards covering product specifications and system functionalities. This decision was taken on one hand to make possible the CE marking for products for which no standards are in existence or considered necessary and on the other hand to ensure that co-operation between the CEN/TC and ISO/TC 138 is not affected or made complicated as this International technical committee is not concerned with European legislation.

In regard to the objective to harmonise certification practices and to easy the mutual recognition, the CEN/TC decided to draft standards which are intended to serve as guidance for the drafting of individual voluntary certification schemes. This approach should eventually lead to European-wide harmonisation of voluntary certification schemes.

With regard to international harmonisation, the CEN/TC is operating in co-operation with ISO/TC 138 and draft product standards are made available for consideration by this ISO/TC. As mentioned earlier, the drafting of test methods is left to ISO/TC 138/SC 5 and/or ISO/TC 138/SC 6. Whenever possible, reference will be made to ISO test method standards. Only test methods for new applications not existing in ISO will be developed in CEN/TC 155.

Principally product standards remain the full responsibility of the TC. They can however be drafted under the Vienna Agreement, with ISO lead, i.e. drafted by ISO.

4.3 Environmental aspects

The TC includes the following considerations on environmental aspects in the standardisation of plastic piping systems.

Environmental declaration

CEN/TC 155 is developing Product Category Rules (PRC's) along the model provided by CEN/TC 350 Sustainability of construction works (EN 15804 Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products).
Stakeholders in Europe are investigating how the sustainability of the building materials should be validated on building level.
The EC has also introduced the Product Environmental Footprint (PEF), in which plastics pipes are involved as one of the pilot projects.

Efficient use of material

Based on the type and strength of the plastic material (e.g. PVC-U, PE, PP, GRP) pipe product standards specify test methods, design factors and procedures to allow determination of the most efficient wall thicknesses as related to pressure and/or stiffness classes.

Development of new high-performance materials can reduce the quantities of raw materials needed to perform a certain function as well as the wall structure design

Utilisation of recyclable materials

There are clear advantages, from an environmental viewpoint, in being able to utilize recycled plastic materials compared with using virgin materials.

Recycling and processing technologies have been progressed during the past several years such that utilisation of post-consumer recycled material now is possible. Research on recycling of composite materials is on-going and progress is followed by the TC.

CEN/TS 14541 has been created to serve as a guidance to specify the quality of recycled PVC-U, PE and PP materials (recyclates).

In thermoplastic piping product standards for piping systems for non-pressure applications, utilisation of recycled material is allowed and quality requirements for the materials and products are specified.

The TC 155 will continue to support the development of using recycled materials in the products covered by TC 155 as the technology is refined to allow safe, efficient and economic use. Existing standards will be updated and/or new ones will be developed accordingly

Fitness for purpose of the products during product life time

The design of plastic piping systems is based on a 50-year rating time to establish long term properties and product designs. It is to this 50-year rating point that design factors are applied. For thermoplastic pressure pipe materials, the strength of the material per the MRS classification is based on a 50-year value in accordance with ISO 9080. For GRP materials the product standards specify the long-term testing, analysis and design procedures for establishing product designs. For all products, as the 50-year point is used for classification and design, and as many studies

and analysis of buried pipes have demonstrated, it is reasonable to expect lifetimes above 100 years.

CEN/TC 155 is developing a package of test standards determining the feasibility of thermoplastic material for non-pressure applications with a life time expectancy of more than 100 years. This package of test standards may be implemented in the relevant product standards.

In product standards the tests for fitness for purpose are related to the long-term life of plastic piping systems. The most important tests with respect to impact on environment during the functional life of the piping system are mechanical integrity and joint tightness. The TC will continue to include requirements for these characteristics in the product standards.

Innovation

The TC will conduct reviews of product standards whenever any environmental impact might be significantly reduced by application of new knowledge and technology.

5 FACTORS AFFECTING COMPLETION AND IMPLEMENTATION OF THE CEN/TC WORK PROGRAMME

The complexity of CE marking and inability to reach full consensus between all European Stakeholders have so far prevented the publication of harmonized standards for plastics pipes and fittings. An investigation is ongoing in cooperation with the EC on how to continue with CE marking.

One major concern is to ensure/maintain the high level of expertise, knowledge and commitment to the standardization work of CEN/TC 155 experts when retiring or leaving the industry.

Since financial resources for the development and validation of new testing methods and a limited number of technical experts can only devote a limited amount of time to standardization activities it is becoming difficult to develop and to standardize new testing methods.