European Standards
respecting the environment

Maintaining a healthy environment and taking care of natural resources is essential to our world. Standards play a key role in enabling more efficient use of energy and natural resources, as well as preventing unfavourable environmental impacts.

CEN and CENELEC work with their members and stakeholders to develop standards that help companies and organizations improve their environmental performance. Many of the European Standards developed by CEN and CENELEC aim at supporting the implementation of EU Directives and Policies, for example those in relation to construction products, drinking water, ecodesign, and energy efficiency.

CEN and CENELEC also promote a horizontal approach by encouraging their Technical Committees and Working Groups to consider environmental aspects when developing standards for diverse products, services, processes and systems. A range of tools, guidance and support is available to help standard writers understand and integrate objectives such as environmental sustainability, resource efficiency, and climate resilience.

- By making use of environmentally respectful standards, businesses and organizations can benefit from higher levels of public trust and customer satisfaction.
- By using less energy and resources, they can also gain in terms of less waste and lower costs.

Thanks to standards, sustainability and competitiveness can go hand-in-hand!

CEN and CENELEC **developing standards** that help companies and organizations **improve** their **environmental performance**.

USE OF RAW MATERIALS AND RESOURCES

Our raw materials, from the environment surrounding us, are limited resources making ecodesign a future core component of a sustainable, circular global economy.

Standardization is a key tool, ensuring the performance specifications of materials and products are compliant while allowing the flexibility of innovative organizations to develop materials and products which meet those specifications.

Economies of the future will need to become increasingly eco-efficient.

Economies of the future will need to become increasingly eco-efficient, delivering products and services while utilising fewer virgin materials. Industries of the future will need to work within a circular economy where re-use and recycling of materials and products as well as efficient use of resources is common practice.

As virgin materials become increasingly scarce and expensive, alternatives will be innovated and developed. Using less natural resources in production increases profitability and improves our long term prospects to remain sustainable.

Examples include:

The EU construction sector is a major user of natural resources. **EN 15804:2012** sets out horizontal rules, requirements and guidelines (Product Category Rules) for developing environmental product declarations (EPDs) of construction products which meet the requirements of ISO 14025:2006 and ISO 21930:2007.

By applying **EN 15804:2012** within EPDs, all those involved in the construction supply chain can make decisions on environmental impacts of buildings and other construction works as the same rules and a set of environmental indicators are also employed at the level of the end product, i.e. for buildings **EN 15978:2012**.

EN 50242:2008 (as amended 2012) provides methods for measuring performance characteristics of electric dishwashers and **EN 50440:2015** specifies methods for measuring the performance of electric storage water heaters for the production of sanitary hot water for household use. Both were developed in support of the Ecodesign Directive. These standards take into account water and energy consumption.

"Standardization has a vital role to play in ensuring that environmental aspects are taken into account when considering processes, and technical and product specifications."

Richard Allan, Chair of CEN Strategic Advisory Body on Environment

WASTE AND THE CIRCULAR ECONOMY

Waste can be economically harmful as it represents a product or raw material that we have paid for and are paying to discard. Producing waste reduces profitability and, in a global market where resources are increasingly scarce, it risks our ability to sustain our economic activity.

We usually think of the cost of waste in terms of the cost of disposal. We forget that the true cost of waste also includes the cost of purchasing the materials which we are now discarding or processing, treating, converting and handling as waste using costly energy, water and other resources which might be better reserved for producing products and delivering services.

Waste can be turned into a resource.

Similarly, waste is environmentally harmful. We deposit waste on land or discharge emissions to water or air, often relying on natural processes to clean it up for us. This puts pressure on already burdened natural systems. In a more circular economy waste needs to be prevented and what used to be regarded as 'waste' can be turned into a resource by re-using, repairing, refurbishing and recycling.

Examples include:

In order to properly handle different types of waste at the end of life as a product, it is important to correctly identify, collect and treat it. **EN 50574** and **EN 50625** series provide details on how to collect, transport, sort and treat waste electrical and electronic equipment (WEEE) so that it can be routed to the best end of life option for recovery, recycling or re-use.

Reduction of the overall impact of waste is possible by using it as secondary or alternative material in other processes. The technical specification **CEN/TS 14243** highlights categories for materials produced from end of life tyres. This categorization enables potential users of these materials to rely on the consistent specification of these secondary materials.

The plastics industry is a cornerstone in today's fast changing world and a variety of standards address the characterization of plastic recyclates. These standards enable end of life plastics to re-enter the production cycle as alternative materials and work towards a circular economy.

"The standards of CEN/TC350 allow freedom of design and support for innovation and protection of the environment while construction work is fulfilling the desired functional and technical performance requirements."

Ari ILomaki, Chair of CEN/TC350

ENERGY AND CARBON MANAGEMENT

Energy enables food production, manufacturing, heating and cooling, water and wastewater treatment, however, it significantly impacts the economy and the environment. Emissions of greenhouse gases from energy production and energy use in industry result in climate change, affecting the environmental conditions in which we live and work. Changes in temperature and water availability impact our ability to produce food and goods while weather extremes interrupt the transport of goods and resources. Buildings and infrastructure must be modified to adapt to changing conditions. Finding ways to reduce our energy demand and to produce energy with a lower environmental impact results in lower economic costs, in both the short and long terms.

Standardization helps reduce environmental impact, resulting in lower economic cost.

Standardization helps us control emissions arising from fuel consumption and manufacturing while strengthening the development of efficient distribution infrastructures and enabling us to consistently measure energy data. Standards support renewable energy production such as systems for photovoltaic conversion of solar energy and wind turbine systems.

In the future, standardization will have an even greater impact in areas such as smart metering, interoperability across systems, more efficient generation, and the development of energy efficient products and services.

Examples include:

Over the past years, CEN, CENELEC and ETSI have collaborated to develop an open architecture that would support the implementation of 'intelligent metering systems' to assist active participation of consumers in the energy market, and produced a technical report (**CEN-CLC-ETSI TR 50572**) to address some of the technical issues that technical / data communication standards should focus on. **EN 13757-1:2014** addresses the communication systems for meters.

In 2015, CEN and CENELEC published a series of European Standards that set out requirements and provide guidance on how to carry out energy audits. The **EN 16247** series of standards are intended to help companies throughout Europe comply with the requirements of the European Union's Energy Efficiency Directive (2012/27/EU).

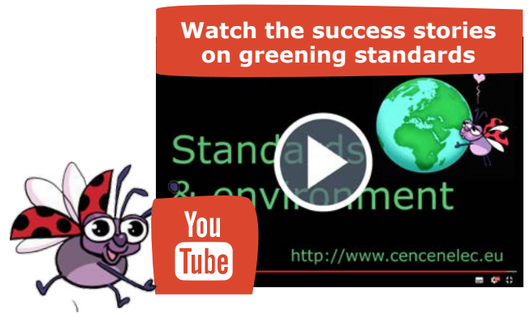
In 2012 CEN published **EN 16258**, a 'Methodology for calculation and declaration of energy consumption and GHG emissions of transport services (freight and passengers)'. This standard sets a harmonized methodology and requirements for calculating and reporting energy consumption and GHG emissions in transport services.

"In CEN and CENELEC, we cooperate within Europe and internationally to develop and adopt state-of-the-art-standards, supporting the shift to a greener and more energy efficient economy."

Bernard Gindroz, Chair of the CEN-CENELEC Sector Forum 'Energy Management' (SFEM)

"Europe's gas industry does not consider environmental commitment as a constraint, but rather as an opportunity. Environmental provisions included in European Standards is a way to enable compliance with EU Directives, and also helps to promote a positive image of natural gas."

François Dupin, CEN Sector Forum Gas-Marcogaz



WATER QUALITY AND USE

Freshwater consumption worldwide has more than doubled since the 1950s and is expected to rise another 25% by 2030 (UNEP 2012).

The total renewable freshwater resource in Europe is approximately 3500 km3/yr. Although this may appear sufficient, the quantity, quality and distribution of water available to us is changing as climatic conditions respond to global warming. Increasing demand from domestic, agricultural and industrial activities, including energy production, requires users to become more efficient in preventing the emission of pollutants. This growing demand also impacts natural water sources by limiting their ability to deliver valuable ecosystem services.

Standards define ways of measuring water chemistry and biology.

Standards help us define water use and reuse as well as deliver a range of standard approaches to treatment. They also help us define ways of measuring water chemistry and biology, allowing us to monitor improvements or deterioration of water quality. Furthermore, standards help control discharge of waste into water bodies so healthy ecosystems are maintained.

Examples include:

EN 246:2003 (confirmed in 2013) specifies performance criteria to regulate the flow of water through sanitary taps and their related accessories. This helps us to manage the use of water.

EN 16698:2015 provides guidance on the qualitative and quantitative sampling of phytoplankton from inland waters. This is used to help investigate water quality.

A range of technical reports (TRs) deal with the characterisation and handling of sludges arising from water treatment. For example **CEN/TR 13097** provides guidance on good practice for the utilisation of sludges in agriculture.

AIR QUALITY

Standards provide tools for measuring air quality.

Despite the critical role air plays in supporting our life and that of the earth's biological resources, we emit pollutants into our atmosphere by burning fossil fuels, through industrial activities, and through transportation. At the same time we damage the planet's ability to replenish our air by reducing trees and other plants.

Poor air quality also impacts economic activity. Respiratory and cardiovascular diseases and cancers reduce the available workforce while increasing demands on healthcare services and products.

Furthermore, airborne pollutants such as NOx and SOx can cause acid damage to buildings, metalwork and other elements of our infrastructure.

Standards help specify safe levels of pollutants in our air and provide tools for measuring air quality.

Examples include:

Certain test standards measure concentrations of nitrogen oxides (**EN 14211:2012**) and oxides of sulphur (**EN 14212:2012**) to help meet the requirements of the Air Quality Framework Directive (96/62/EC) and its subsequent 'daughter directives' and regulations.

Emissions to air from the burning of solid fuel by residential appliances can be tested using methods described in the Technical Specification **CEN/TS 15883:2009**.

The **EN 16321** series support the petrol vapour recovery during refuelling of motor vehicles at service stations by efficiency assessment and verification methods.

"Standards for the ecodesign of electrical products and for their proper treatment when they reach the end of their useful lives are especially important, resulting in minimized waste and recycling of valuable materials."

Dr. Herbert Mrotzerk, Chair of CENELEC/TC111X

"Standards have the ability to assist in truly protecting the environment for instance by improving the performance of products throughout their life cycle and providing measurement methods for energy consumption or pollutants."

Laura Degallaix, Director of ECOS, The European Environmental Citizens' Organization for Standardization

Support for standard writers

5 ways of considering environmental aspects within the CEN Technical Committee management process.

1 Standing item on the meeting agenda
Environmental aspects must be included as a standing item on meeting agendas and used to review environmental strategy and actions (in CEN).

2 Environment cannot be excluded from a committee's scope
You cannot exclude environmental issues from the scope of your TC. It is important that every committee makes the effort to consider how its work might impact the environment.

3 New work item proposal
The proposal for every new work item must estimate which environmental aspects are likely to be relevant and how the committee plans to address them.

4 Formatted decision on the adoption of new work items
Environmental aspects must be identified in all new work item decisions of a committee (in CEN).

5 Including environmental considerations within the TC business plan
Identify how your work programme might impact the environment, and how you plan to investigate and address this.

How to include environmental aspects in your standardization work

A number of strategies are currently being used by TCs within CEN and CENELEC. Some of these might work well for your own committee, or you might develop a technique which better suits your specific needs. Examples of strategies used by committees include:

Including the environmental checklist as an annex

CEN Guide 4 "Guide for addressing environmental issues in product standards" includes a helpful environmental checklist that you can use to start identifying environmental aspects within your standards and how you might begin to address them.

IEC Guide 109 "Environmental aspects – Inclusion in electrotechnical product standards" provides a similar guidance and a checklist to help include environmental aspects in electro technical standards.

Developing a specific environmental standard

It might be helpful to develop a guidance standard which puts a committee's scope of work into an environmental context. For example CEN/TC 121 produced EN14717. This standard outlines the likely environmental aspects associated with each stage of the process for welding and allied processes.

Incorporating specific environmental clauses within your standards

Including specific, environmentally relevant content within a standard is one of the most effective ways to clearly address its environmental aspects. This might include:

- the insertion of a specific clause which puts an environmental issue into the context of the standard,
- the insertions of environmentally relevant content throughout the clauses of the standard,
- a mixture of both.

Transpose or reference environmental requirements from EU legislation

Where environmental requirements are drawn directly from an EU legislation, it might be practical to transpose these directly into a related standard. Alternatively you can reference these requirements from within the standard.

Reference other environmental standards

Sometimes it proves necessary to reference content within a related environmental standard, for example when linking to a specific test methodology or a standard which outlines agreed principles and framework.

About CEN and CENELEC

The European Committee for Standardization (CEN) and the European Committee for Electrotechnical Standardization (CENELEC) are officially recognized by the European Union (EU Regulation 1025/2012) as European Standardization Organizations (ESOs) responsible for developing and defining standards at European level.

The Members of CEN and CENELEC are, respectively, the National Standardization Organizations and National Committees of 33 European countries including all of the EU member states, three EFTA countries (Iceland, Norway and Switzerland), Turkey and the former Yugoslav Republic of Macedonia.

CEN and CENELEC and their respective Members work with various stakeholders – including industry, SMEs, consumers and other societal stakeholders, public sector bodies, academics and researchers – to develop voluntary European Standards (ENs) and other standardization deliverables.

CEN works in partnership with the International Organization for Standardization (ISO) and CENELEC collaborates with the International Electrotechnical Commission (IEC), in order to coordinate their respective standardization activities and enable the alignment of European and international standards.

CEN – European Committee for Standardization
CENELEC – European Committee for Electrotechnical Standardization
Avenue Marnix 17 - 1000 Brussels - Belgium | info@cencenelec.eu

www.cen.eu | www.cenelec.eu | www.cencenelec.eu

Publisher: Sarah Penny - © CEN and CENELEC 2016