WORK PROGRAMME 2022

EUROPEAN COMMITTEE FOR STANDARDIZATION
EUROPEAN COMMITTEE FOR ELECTROTECHNICAL STANDARDIZATION

CEN CENELEC

European Standardization
and related activities

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All facts and figures in this publication were correct on 31 December 2021

Introduction

As Europe is slowly leaving behind the Covid emergency and learning to get the best from the "new normal", new challenges call all of us to decisive action. From the fight against global warming to digital technologies, from fostering a sustained and fair economic recovery to the quest for strategic autonomy, in 2022 Europe will face some era-defining decisions.

In this context, as CEN and CENELEC we believe that European standards have a strategic role to play: as the success of our collective effort in the Covid emergency and its aftermath has shown, European standardization can offer timely innovative solutions to present and future challenges. This is thanks to a strong, flexible and inclusive standardization system.

European standards have the potential to support the most relevant priorities of Europe, such as the Recovery Plan and the twin Green and Digital Transition. We are sure that the tactical role of standards will be recognised and strengthened thanks to the new European Standardization Strategy, to provide a renewed platform of collaboration between the Standardization Community and the European institutions.

CEN and CENELEC's commitment to sustainability is long-standing. Our experts and Members are working diligently to include climate considerations throughout all our standardization work and anticipate industry and societal needs. These efforts will be reinforced in 2022 with the implementation of the recently signed London Declaration, joining our international sister organizations ISO and IEC on the commitment of standards to climate action, and with the ongoing project of connecting European Standards to the UN's Sustainable Development Goals (SDGs), that will see visible results in the coming months.

Our ability and capacity to deliver "Smart Standards" together with ISO and IEC and to innovate our digital workplace will be critical for our dual ambition to address user needs and facilitate business transformations to succeed in the digital economy. Many standards are under development to support the implementation of the many new pieces of digital legislation currently in the pipeline on domains as varied as Artificial Intelligence, cybersecurity, industrial data and for the digitalisation of the industry.

A well-running European Standardization System, powered by the timely citation of harmonised standards (hENs) in the Official Journal of the EU, is vital for the smooth functioning of the Single Market and to succeed in the global market. Hence, we are committed to keeping up the good work with the European Commission to have an efficient system able to anticipate strategic policies and initiatives and define organic, long-term solutions that involve all interested stakeholders.

Furthermore, the robustness of our system has been strengthened with the revision of our statutes: this revision, in application since the 1st

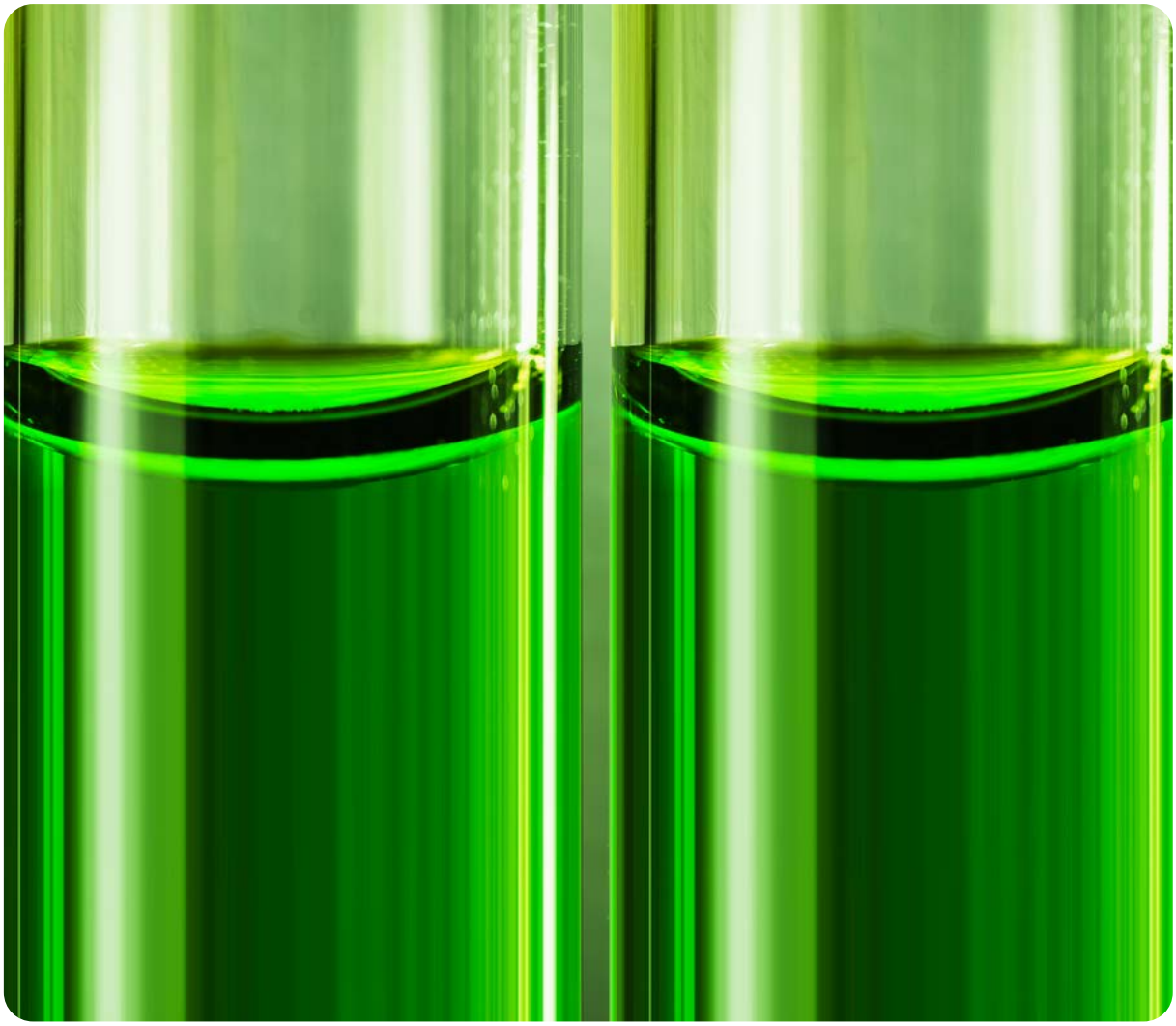
of January, introduces three types of membership and defines clear and strong requirements. The objective is to safeguard the principles of the European standardization system and provide seamless market access across Europe, including the UK.

All these ambitions will become a reality with the implementation of the forward-looking goals of our Strategy 2030, thanks to the commitment and enthusiasm of all our Members and stakeholders. In 2022, we will kick-off the journey with five dedicated projects.

2022 promises to be a key year for CEN and CENELEC. I am sure that, by working together as a community, we will continue building a successful, resilient, and effective European Standardization model to the benefit of Europe's economy, industry and citizens.

Elena SANTIAGO CID
Director General of CEN and CENELEC

Chemicals



Chemical production in the EU accounts for about 13,5% of total chemical production all over the world. With around 7,5% of EU manufacturing by turnover, the chemicals industry is one the largest manufacturing sectors in Europe.

Being at the very base of many other industries - and having an impact on safety, health, and environment - it is a highly regulated sector. Within Europe, chemicals are predominantly regulated through comprehensive legislations, among which the most relevant are Regulation on 'Registration, Evaluation, Authorisation and Restriction of Chemicals' (REACH) and Regulation on 'Classification, Labelling and Packaging of chemical substances' (CLP).

REACH (EC 1907/2006) aims at improving the protection of human health and environment and at enhancing innovation and competitiveness in the EU chemicals industry. Currently, more than 25.000 substances have been submitted to the European Chemicals Agency (ECHA) under REACH. Other groups of chemicals such as fertilisers, explosives, biocides, pesticides, pharmaceuticals, and cosmetics are addressed by specific legislations.

The EU Chemicals Strategy for Sustainability, published in 2020, increases the efforts towards the protection of the citizens and the environment, while boosting innovation for safe and sustainable chemicals.

23 technical bodies responsible

CEN/SS C10	Starch
CEN/SS C20	Explosives and firework
CEN/SS I44	Nanotechnologies
CEN/TC 139	Paints and varnishes
CEN/TC 193	Adhesives
CEN/TC 223	Soil improvers and growing media
CEN/TC 249	Plastics
CEN/TC 260	Fertilizers and liming materials
CEN/TC 276	Surface active agents
CEN/TC 298	Pigments and extenders
CEN/TC 317	Derivatives from coal pyrolysis
CEN/TC 321	Explosives for civil uses
CEN/TC 347	Methods for analysis of allergens
CEN/TC 352	Nanotechnologies
CEN/TC 360	Coating systems for chemical apparatus and plants against corrosion
CEN/TC 363	Organic contaminants (tar) in biomass producer gases
CEN/TC 366	Materials obtained from End-of-Life Tyres (ELT)
CEN/TC 386	Photocatalysis
CEN/TC 401	Reduced Ignition Propensity Cigarettes
CEN/TC 421	Emission safety of combustible air fresheners
CEN/TC 437	Electronic cigarettes and e-liquids
CEN/TC 462	Regulated chemicals in products
CEN/WS 089	Platform - Guidelines and best practices for sustainable production of carbon nanotube-based nano-enabled products (CNT-based NEPs)

Standards published by CEN and CENELEC

CEN and CENELEC portfolio of deliverables: 1315 ENs + 81 other deliverables

Work Items currently in the Work Programme: 221 ENs + 57 other deliverables

Standardization requests from EC/EFTA

M/564 – Fertilisers

M/562 – Explosives for civil use

M/556 – Polycyclic Aromatic Hydrocarbons (PAH)

M/XXX – Pyrotechnical articles, expected in 2021

M/XXX – Plastics recycling and recycled plastics, expected in 2022

Further information

- Chemicals

PLASTICS

In September 2019, CEN and CENELEC signed the Circular Plastics Alliance declaration – hosted by the European Commission – which aims to increase the EU market for recycled plastics to 10 million tonnes by 2025. In the Declaration, standards are identified as a key contributor to this ambitious goal.

Through 2020 and 2021, *a Standardization Request Ad-Hoc Group* and relevant CEN and CENELEC Technical Bodies provided inputs for the upcoming Standardization Request 'Plastic Recycling and Recycled Plastics', expected in 2022.

The Standardization Request will address the design for the recycling of plastics products, quality of waste, quality of recyclates, and the integration of recyclates into products. It will cover the fields of automotive, packaging, agriculture, building & construction, and electronic & electrical.

Independently of the Standardization Request, CEN/TC 249 'Plastics' is expected to publish EN 17615 'Plastics - Environmental Aspects – Vocabulary' and will continue working on the revision of three standards:

- EN 15348 'Plastics - Recycled plastics - Characterization of poly(ethylene terephthalate) (PET) recyclates';
- EN 15347 'Plastics - Recycled Plastics - Characterisation of sorted plastics wastes';
- EN 15346 'Plastics - Recycled plastics - Characterization of poly(vinyl chloride) (PVC) recyclates'.

Additionally, CEN/TC 249 will adopt various EN ISO standards, addressing the determination of the aerobic biodegradation of plastic materials in marine environment, and the carbon and environmental footprint of biobased plastics.

FERTILISING PRODUCTS

The Standardization Request M/564 regarding EU fertilising products in support of Regulation (EU) 2019/1009 – coming into force in 2022 – includes European Standards and Technical Specifications (more than 60 TSs and 60 hENs) that are being developed in a so-called "two steps approach".

In 2022, the Technical Specifications will be published, and the development of the European Standards will continue – including the validation phase through Interlaboratory Studies.

These deliverables will provide requirements and test methods allowing analysis and verifying compliance of EU fertilising products with relevant requirements under the six Product Function Categories (PFCs) of the new Regulation. They will be developed by CEN/TC 223 'Soil improvers and growing media', CEN/TC 260 'Fertilisers and liming material', and CEN/TC 455 'Plant biostimulants'.

The expected deliverables will ensure full harmonisation of the European Single Market, granting producers access to CE marking, and will play a pivotal role in fostering the use of organic and bio-waste-based fertilisers. In the same way, they will provide testing methods for safety and environmental criteria, such as pathogen detection and contaminants determination.

Explosives for civil use - Based on the Standardization Request M/562 on explosives for civil uses in support of Directive 2014/28/EU, CEN/TC 321 'Explosives for civil use' is expected to continue working on more than 50 European Standards and two Technical Specifications dealing with safety requirements, terminology, categorisation and test methods.

The ENs will address the Essential Safety Requirements as listed in Directive 2014/28/EU, ensuring more safety during the production, the handling, and the usage of explosives for civil uses. At the same time, the harmonised standards will also foster EU cross-border trade and strengthen the European Single Market. Many stakeholders are involved in the standardization activities in the field of explosives, such as manufacturers, distributors, demolition companies, and research institutions.

Pyrotechnic articles - CEN/TC 212 'Pyrotechnics articles' will finalise the revision of the following series of standards, mandated under M/416:

- EN 15947-x 'Pyrotechnic articles - Fireworks, Categories F1, F2 and F3'
- EN 16261-x 'Pyrotechnic articles - Fireworks, Category F4'
- EN 16263-x 'Pyrotechnic articles - Other pyrotechnic articles'

Additionally, the European Commission will issue a new Standardization Request on Pyrotechnic articles referring to current Directive 2013/29/EU, which will replace the mandate M/416 to which a Standardization Request Ad-Hoc Group contributed during the period 2020 2021.

The Standardization Request includes the revision of the EN ISO 14451 series 'Pyrotechnic articles for vehicles', EN 16256 series 'Theatrical pyrotechnic articles', EN 16261 series 'Pyrotechnic articles - Fireworks, Category F4', as well as the EN 16263 series 'Pyrotechnic articles - Other pyrotechnic articles'.

Nanotechnologies - CEN/TC 352 'Nanotechnologies' will continue working on two Technical

Specifications, as mandated by M/431 on 'Nanotechnologies and nanomaterials', namely CEN/TS 'Nanotechnologies - Guidelines for the characterization of nanoobjects-containing additives in food products' and CEN/TS 'Nanotechnologies - Guidance on the determination of aggregation and agglomeration state of nano-objects'.

The TC will also develop other TSs about the "safe-by-design" concept, health and safety risk management, and NOAA traceability.

CEN/TC 352 will also adopt ISO TS 19807-1:2019 'Nanotechnologies – Magnetic nanomaterials – Part 1: Specification of characteristics and measurements for magnetic nanosuspensions' and ISO 21363:2020 'Nanotechnologies – Measurements of particle size and shape distributions by transmission electron microscopy' as CEN ISO deliverables.

PAHs in plastics and rubber - CEN/TC 462 'Regulated chemicals in products' will continue developing a new standard on 'Determination of the content of polycyclic aromatic hydrocarbons (PAH) by gas chromatography in plastic and rubber in articles supplied to the general public that come into direct contact with human skin and oral cavity'.

This standard is being developed under the Standardization Request M/556 on compliance with maximum content criteria of PAH in rubber and plastic components of articles placed on the market for supply to the general public in support of Regulation (EC) No. 1907/2006 of the European Parliament and of the Council.

The standard will support Annex XVII of REACH (entry 50) concerning the eight carcinogenic PAHs listed therein and harmonise the analytical methods for determining the individual concentration of the eight carcinogenic PAHs concerned in the plastic and rubber components of articles falling within the scope of the restriction, and ensure that only articles that do not pose an unacceptable risk to human health or the environment, may be legally placed on the EU market for supply to the general public.

Adhesives - CEN/TC 193 'Adhesives' will start the revision of EN 923 'Adhesives - Terms and definitions', that will include new technologies and more accurate definitions for already existing technologies, compared to the previous edition from 2015.

CEN/TC 193 will also keep working on EN 17668 'Adhesives for floor coverings – Preparation of adhesive application - Test method for the determination of excessive humidity in subfloors' – which will help to assess when a subfloor is ready to accept an adhesive – and on the revision of the EN 302 series 'Adhesives for load-bearing timber structures', which will update the existing test methods according to the state of the art.

Construction

The construction sector is one of Europe's biggest industries, representing about 9% of the EU's GDP and 50,5% of gross fixed capital formation. It employs more than 18 million EU citizens, and it is estimated that 26 million workers in the European Union depend, in one way or another, on the construction sector.

CEN and CENELEC, as two of the official European Standardization Organizations (ESOs), support the construction sector, developing harmonised European standards in support of the Construction Products Regulation (Regulation EU 305/2011 - CPR). Harmonised standards provide a common technical language to be used by manufacturers to express the technical performance of their construction products, by regulators to express their requirements and by designers, contractors, and other construction stakeholders to exchange information efficiently. Harmonised standards have a key role for the implementation of the CPR because they not only contain the assessment methods for determining the performance of the construction product in relation to their essential characteristics, but also include provision for their declaration and the clauses on assessment and verification of constancy of performance (AVCP).

The construction sector is key to ensure that the ambitions of the Recovery Plan and the Green Deal embrace the opportunity for a stronger and more sustainable Europe moving forward: take for example the Renovation Wave issued by the European Commission, which calls specifically for climate resilient building standards.

Given the importance and broad applicability of the construction sector, stakeholders working on standards in the field include manufacturers of construction products, national and European industry associations, laboratories and notified bodies, engineers, structural designers, the scientific community, and the European Commission.

82 technical bodies responsible

CEN/CLC/Guides	Group for CEN-CENELEC Guides
CEN/CLC/JTC 11	Accessibility in the built environment
CEN/SS B02	Structures
CEN/SS B09	Energy Performance of Buildings Directive (EPBD)
CEN/SS B99	Building and construction - Undetermined
CEN/SS F01	Technical drawings
CEN/SS F02	Units and symbols
CEN/SS F16	Graphical symbols
CEN/TC 104	Concrete and related products
CEN/TC 112	Wood-based panels
CEN/TC 124	Timber structures
CEN/TC 125	Masonry
CEN/TC 126	Acoustic properties of building elements and of buildings
CEN/TC 127	Fire safety in buildings
CEN/TC 128	Roof covering products for discontinuous laying and products for wall cladding
CEN/TC 129	Glass in building
CEN/TC 134	Resilient, textile and laminate floor coverings
CEN/TC 135	Execution of steel structures and aluminium structures
CEN/TC 154	Aggregates
CEN/TC 155	Plastics piping systems and ducting systems
CEN/TC 156	Ventilation for buildings
CEN/TC 163	Sanitary appliances
CEN/TC 166	Chimneys
CEN/TC 167	Structural bearings
CEN/TC 169	Light and lighting
CEN/TC 175	Round and sawn timber
CEN/TC 177	Prefabricated reinforced components of autoclaved aerated concrete or light-weight aggregate concrete with open structure
CEN/TC 178	Paving units and kerbs
CEN/TC 185	Fasteners
CEN/TC 187	Refractory products and materials
CEN/TC 189	Geosynthetics
CEN/TC 203	Cast iron pipes, fittings and their joints
CEN/TC 208	Elastomeric seals for joints in pipework and pipelines
CEN/TC 217	Surfaces for sports areas
CEN/TC 218	Rubber and plastics hoses and hose assemblies
CEN/TC 227	Road materials
CEN/TC 228	Heating systems and water based cooling systems in buildings
CEN/TC 229	Precast concrete products
CEN/TC 241	Gypsum and gypsum based products
CEN/TC 243	Cleanroom technology
CEN/TC 246	Natural stones
CEN/TC 247	Building Automation, Controls and Building Management
CEN/TC 250	Structural Eurocodes

CEN/TC 254	Flexible sheets for waterproofing
CEN/TC 277	Suspended ceilings
CEN/TC 284	Greenhouses
CEN/TC 288	Execution of special geotechnical works
CEN/TC 297	Free-standing industrial chimneys
CEN/TC 303	Floor screeds and screed materials
CEN/TC 315	Spectator facilities
CEN/TC 33	Doors, windows, shutters, building hardware and curtain walling
CEN/TC 336	Bituminous binders
CEN/TC 339	Slip resistance of pedestrian surfaces - Methods of evaluation
CEN/TC 340	Anti-seismic devices
CEN/TC 341	Geotechnical Investigation and Testing
CEN/TC 346	Conservation of Cultural Heritage
CEN/TC 349	Sealants for joints in building construction
CEN/TC 350	Sustainability of construction works
CEN/TC 351	Construction Products - Assessment of release of dangerous substances
CEN/TC 357	Stretched ceilings
CEN/TC 361	Polymer modified bituminous thick coatings for waterproofing - Definitions/requirements and test methods
CEN/TC 371	Energy Performance of Buildings project group
CEN/TC 38	Durability of wood and wood-based products
CEN/TC 396	Earthworks
CEN/TC 407	Cylindrical helical springs made from round wire and bar - Calculation and design
CEN/TC 422	Side curtains ventilation systems - safety
CEN/TC 442	Building Information Modelling (BIM)
CEN/TC 459/SC 3	Structural steels other than reinforcements
CEN/TC 459/SC 4	Concrete reinforcing and prestressing steels
CEN/TC 50	Lighting columns and spigots
CEN/TC 51	Cement and building limes
CEN/TC 53	Temporary works equipment
CEN/TC 67	Ceramic tiles
CEN/TC 88	Thermal insulating materials and products
CEN/TC 89	Thermal performance of buildings and building components
CEN/TC 99	Wallcoverings
CEN/WS 063	Structural Condition Determination for Integrated Lifetime Assessment of Plants, Structures and Components
CEN/WS 071	Validation of computational solid mechanics models using strain fields from calibrated measurements (VANESSA)
CEN/WS BRESAER	Innovative and adaptable envelopes in building refurbishment. Design, economic assessment, logistics and installation guidelines
CEN/WS Smart-CE-Marking	Smart CE marking for the construction industry
CEN/WS SUSTINROADS	Sustainability assessment of roads
CLC/SR 3	Information structures, documentation and graphical symbols

Standards published by CEN and CENELEC

CEN and CENELEC portfolio of deliverables: 3050 ENs + 313 other deliverables
Work Items currently in the Work Programme: 482 ENs + 55 other deliverables

Standardization requests from EC/EFTA

M/350 - Performance of buildings
M/515 – Eurocodes

Further information

- Construction

STRUCTURAL EUROCODES

Structural Eurocodes are a comprehensive set of standards that relate to the design of building and civil engineering works. The 59 Structural Eurocodes parts produced by CEN/TC 250 'Structural Eurocodes' provide rules for principles of design, actions on structures, geotechnical design and structural design rules for the use of all major materials, such as concrete, steel, composite steel and concrete, timber, masonry, and aluminium. Structural Eurocodes are equally applicable to both whole structures and individual elements of structures (products). They are widely used in the construction and civil engineering industry throughout Europe and have been implemented in neighbouring countries and worldwide.

The European Commission has asked CEN to revise existing Eurocodes to incorporate improvements to the existing suite of standards (Standardization Request M/515), to reflect the state of the art and the needs of the market. Enhancements in user-friendliness, without reducing applicability, will assist new entrants to the market and small and medium-sized enterprises (SMEs). Further developments in new areas include the assessment of existing structures and the use of new materials, such as structural glass, fibre-reinforced polymers and membrane structures.

This work is being carried out by CEN/TC 250 in cooperation with stakeholders, including structural design companies, the scientific community, industry associations and engineers, supported by the European Commission and its Joint Research Centre (JRC).

In 2022, CEN/TC 250 will continue the revision of 19 standards and other deliverables in its work programme. It will alsofinalise the following standards:

- EN 1993-1-1 'Eurocode 3 - Design of steel structures - Part 1-1: General rules and rules for buildings' that gives basic rules for steel structures;
- EN 1999-1-1 'Eurocode 9: Design of aluminium structures - Part 1-1: General structural rules' which provides the basic design rules for structures made of wrought aluminium alloys and limited guidance for cast alloys.

SUSTAINABILITY IN CONSTRUCTION

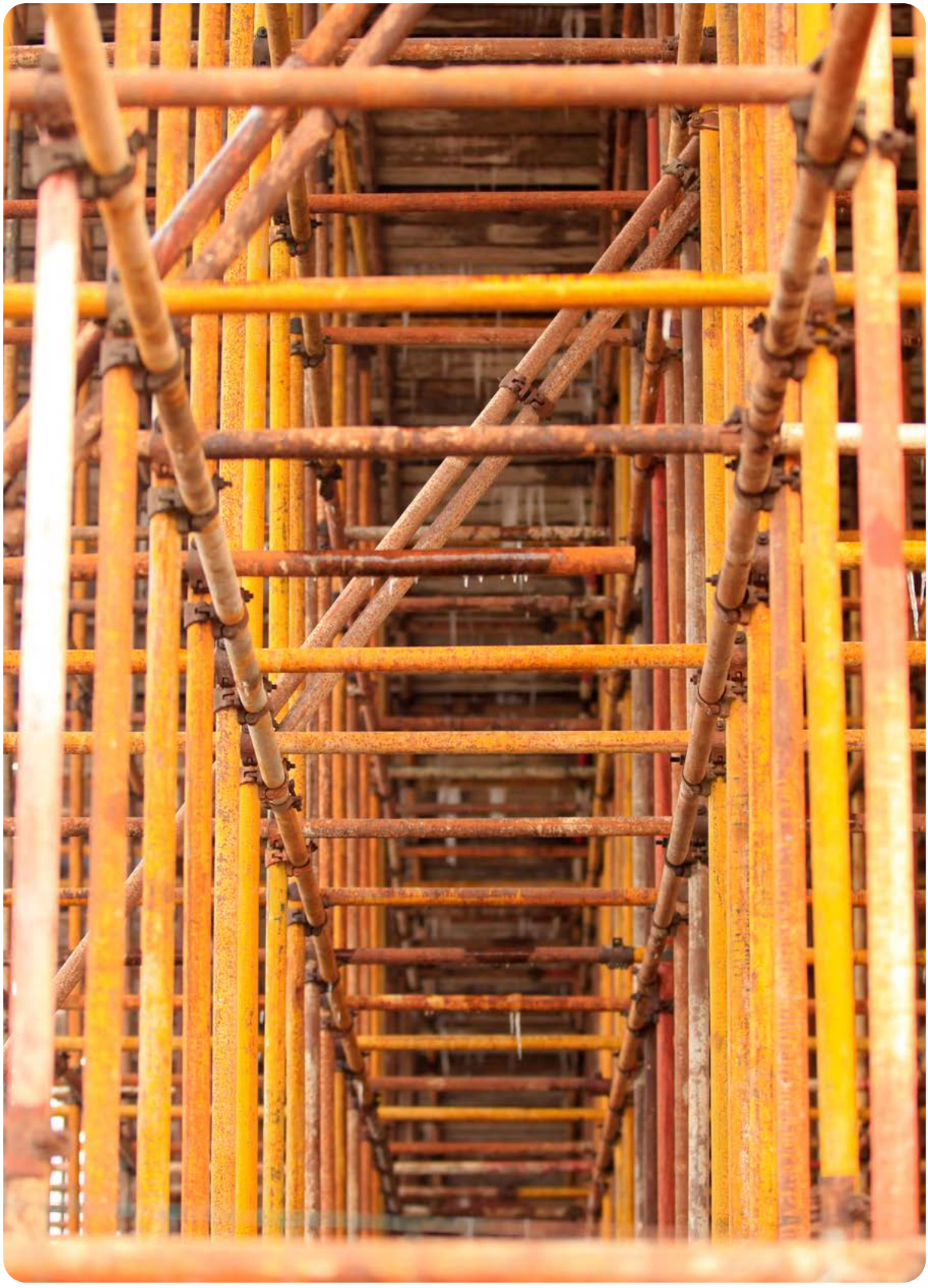
CEN/TC 350 'Sustainability of construction works' is responsible for the development of horizontal standardized methods for the assessment of sustainability aspects of new and existing construction works (buildings and civil engineering works), including standards for environmental product declarations (EPD).

In 2022, CEN/TC 350 will publish EN 17680 'Sustainability of construction works — Evaluation of the potential for sustainable refurbishment of buildings', which provides a process for the evaluation of the potential for sustainable refurbishment of an existing building, as a mean of contributing to the circular economy.

CEN/TC 350 will continue to develop standards in response to the Standardization Request M/350 'Performance of buildings', including EN 15978-1 'Sustainability of construction works - Methodology for the assessment of performance of buildings - Part 1: Environmental Performance'.

CEN/TC 350 will also keep working on the development of its first EN ISO standard, EN ISO 22057 'Sustainability in buildings and civil engineering works - Data templates for the use of EPDs for construction products in BIM (ISO/DIS 22057:2021)', developed in parallel with ISO/TC 59/SC 17 'Sustainability in buildings and civil engineering works'.

CEN/TC 350/SC 1 'Circular Economy in the Construction Sector', established in 2020, will agree on a work programme and start developing deliverables. It will also create dedicated Working Group(s), in line with the objectives identified in the work programme.



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OTHER STANDARDS AND ACTIVITIES TO BE DEVELOPED IN 2022

Release of dangerous substances - CEN/TC 351 'Construction Products - Assessment of release of dangerous substances' develops harmonised test methods to monitor the release of dangerous substances from construction products. In 2022, CEN/TC 351 will continue working on transferring the content of CEN/TS 17216:2018 'Construction products - Assessment of release of dangerous substances - Determination of activity concentrations of radium-226, thorium-232 and potassium-40 in construction products using semiconductor gamma-ray spectrometry' to a European Standard (EN 17216), including the results of the round robin test.

CEN/TC 351 will also publish five deliverables:

- EN 17637 'Construction products: Assessment of release of dangerous substances - Dose assessment of emitted gamma radiation';
- Three EN standards from the EN 16637 series 'Construction products: Assessment of release of dangerous substances', currently existing as Technical Specifications;
- CEN/TS 17459 'Construction products - Assessment of release of dangerous substances - Determination of ecotoxicity of construction product eluates'.

Building information modelling (BIM) - The standardization of Building Information Modelling (BIM) contributes to the effective management of information during the design, construction and operational phases of an asset's lifecycle. The development of BIM is advancing rapidly and requires the application of common standards to ensure future compatibility of information exchange and use.

In 2022, CEN/TC 442 will work to finalise EN 17549-1 and -2 'Information structure based on EN ISO 16739- 1 to exchange data templates and data sheets for construction objects'. In parallel, the TC will also focus on completing EN 17632 'Semantic Modelling and Linking (SML)' and CEN/TR 17741 'Guideline on how to understand and utilise EN/ISO 29481-1 Information delivery manual', and on the development of a CEN/TR on BIM in infrastructure – standardization need and recommendations.

CEN/TC 442 will also, in cooperation with ISO under the Vienna Agreement, continue to work on EN ISO 12006-3 'Organization of information about construction works - Part 3: Framework for object-oriented information', EN ISO 19650-4 'Organization and digitization of information about buildings and civil engineering works, including building information modelling (BIM) - Information management using building information modelling - Part 4: Information exchange' and EN ISO 29481-3 'Information delivery manual — Part 3: Data schema and code'.

Finally, CEN/TC 442 plans to strengthen its links with more CEN Technical Committees and the CENELEC community on topics of common interest.

Fire safety in buildings - In 2022, CEN/TC 127 'Fire safety in buildings' will continue the revision of standards and other deliverables in its work programme, for example EN 13238 'Reaction to fire tests for building products - Conditioning procedures and general rules for selection of substrates', which describes the conditioning procedures for test specimens, and EN 15725 'Extended application reports on the fire performance of construction products and building elements', which gives the procedures for preparing reports on the extended application process using the results of reaction to fire tests, fire resistance tests and external fire exposure to roof tests.

Energy performance of buildings - In 2022, CEN/TC 371 'Energy performance of buildings' will progress with the revision of TS 16628 'Energy Performance of Buildings - Basic Principles for the set of EPB standards' and TS 16629 'Energy Performance of Buildings - Detailed Technical Rules for the set of EPB-standards', which provide, respectively, detailed technical rules and basic principles for the set of energy performance of buildings standards.

Thermal insulating materials and products - CEN/TC 88 'Thermal insulating materials and products' will work to finalise the following two standards, as pilot projects for construction in cooperation with the European Commission:

- EN 17140 'Thermal insulation products for buildings - Factory-made vacuum insulation panels (VIP) - Specification'
- EN 16977 'Thermal insulation products for buildings - Factory made calcium silicate (CS) products - Specification'

Additionally, CEN/TC 88 will continue working on EN 17237 'Thermal insulation products for buildings - External thermal insulation composite kits with a rendering system (ETIC kits) - Characteristics' which specifies the characteristics and performance for design External Thermal Insulation Composite Systems (design ETICS) with rendering systems on thermal insulation products, delivered as a kit by a system holder, and used as thermal insulation for buildings.

Resilient, textile and laminate floor coverings - CEN/TC 134 'Resilient, textile and laminate floor coverings' will continue with the revision of existing standards. It will alsocontinue working on a brand new European standard, 'Resilient, textile, laminate and multilayer modular Floor coverings — Circular Economy — Terms and definitions', which will benefit floor covering stakeholders both for developing new flooring and for looking into renovating buildings.

Ceramic tiles - CEN/TC 67 'Ceramic tiles' will continue working on the EN 12004 series on 'Adhesive for ceramic tiles' and EN 14981 series on 'Liquid applied water impermeable products for use beneath ceramic tiling bonded with adhesives'. Furthermore, CEN/TC 67 will start the revision of EN 14411 'Ceramic tiles - Definition, classification, characteristics, assessment and verification of constancy of performance and marking' and EN 17160 ' Product category rules for ceramic tiles', which defines guidelines for developing environmental product declarations for ceramic tiles.

Consumer

Standards are used every day by businesses, manufacturers, public bodies and other organisations as a tool for ensuring consumer products are safe. European standards are continuously improving, with the ambition to be proactive and mitigate risks that can be reasonably foreseen with existing and new types of products.

Currently, 22 CEN and CENELEC Technical Committees carry out standardization activities in consumer products. These activities mainly fall in the area of the General Product Safety Directive (2001/95/EC), but they also concern a number of other pieces of European legislation (such as the Toy Safety Directive 2009/48/EC).

A large proportion of the standards in this sector are thus drafted at the request of the European Commission in response to Standardization Requests. But standards are also developed in parallel with ISO in areas such as, for example, footwear, sport equipment or textiles, leading to the publication of identical European and international Standards.

Given the variety of topics covered, ranging from child and toy safety, through clothing and accessories, textiles and leather, sports goods, furniture, furnishings and cleaning, the relevant technical bodies work independently of one another, but they exchange information through liaison officers and sometimes cooperate on topics of common interest. The exchange of information in the consumer area will become more important in the coming years because horizontal topics such as accessibility now shall be addressed in all new standardization activities.

28 technical bodies responsible

CEN/CLC/JTC 12	Design for All
CEN/SS H22	Smokers' lighters
CEN/SS M21	Precious metals - Applications in jewellery and associated products
CEN/TC 136	Sports, playground and other recreational facilities and equipment
CEN/TC 207	Furniture
CEN/TC 212	Pyrotechnic articles
CEN/TC 248	Textiles and textile products
CEN/TC 252	Child care articles
CEN/TC 281	Appliances, solid fuels and firelighters for barbecuing
CEN/TC 289	Leather
CEN/TC 309	Footwear
CEN/TC 333	Cycles
CEN/TC 355	Lighters
CEN/TC 364	High Chairs
CEN/TC 367	Breath-alcohol testers
CEN/TC 369	Candle fire safety
CEN/TC 398	Child Protective Products
CEN/TC 401	Reduced Ignition Propensity Cigarettes
CEN/TC 402	Domestic Pools and Spas
CEN/TC 410	Consumer confidence and nomenclature in the diamond industry
CEN/TC 426	Domestic appliances used for water treatment not connected to water supply
CEN/TC 437	Electronic cigarettes and e-liquids
CEN/TC 443	Feather and down
CEN/TC 456	Reporting in support of online gambling supervision
CEN/TC 457	Digital preservation of cinematographic works
CEN/TC 52	Safety of toys
CEN/TC 93	Ladders
CLC/TC 61 WG 7	Electrical Toys

Standards published by CEN and CENELEC

CEN and CENELEC portfolio of deliverables: 880 ENs + 67 other deliverables
Work Items currently in the Work Programme: 147 ENs + 23 other deliverables

Standardization requests from EC/EFTA

M/253 – Baby walking frames
M/259 – Consumer Safety for oil lamps
M/264 – Childcare articles
M/266 – Safety of consumers and children – lighters
M/285 – Ladders
M/309 – Draw strings on children's clothing
M/372 – Floating leisure products
M/425 – Fire safety
M/427 – Cigarettes lighters
M/445 – Safety of toys – under revision

M/452 – Safety of music players
M/464 – Safety of childcare articles (bath rings, bath aids, bathtubs, etc.)
M/465 – Safety of locking devices
M/497 – Childcare articles 'risks in the sleeping environment'
M/505 – Window blinds
M/506 – Stationary training equipment
M/507 – Gymnastic equipment
M/508 – Bicycles
M/527 – Children's seats
M/531 – Laser products
M/538 – Alcohol-powered flueless fireplaces
M/532 – Methods for quantitative analysis of textile products
M/553 – Advanced garments and ensembles of garments that provide protection against heat and flame, with integrated smart textiles and non-textile elements
M/XXX – Safety of Childcare Articles

Further information

- Consumer

COMMUNITY FACE COVERINGS

The need for community face coverings was acknowledged during the SARS-CoV-2 pandemic and an initial deliverable was developed by CEN to support this urgent need: CWA 17553:2020. In 2022, CEN/TC 248 'Textiles and Textile products', after a wide engagement with a variety of stakeholders, should finalise a higher consensus deliverable (European Technical Specification prCEN/TS 17553) on Community face coverings. This will include requirements for the design, production and performance assessment of Community face coverings (barrier masks) intended for consumers, single or reusable.

PREVENTION OF MICRO-PLASTIC RELEASE FROM TEXTILE SOURCES

CEN/TC 248 will also continue working in 2022 on standardization activities for the prevention of micro-plastic release from textile sources in cooperation with ISO (prEN ISO 4484 parts 1, 2 and 3). The results obtained by using the first part of the standards series, for instance, will enable manufacturers of textile articles to make an informed choice about the type of fabric to use to reduce/minimise shedding of microplastics into the aquatic environment after washing. This work will contribute to the EU strategy for sustainable textiles.

OTHER STANDARDS AND ACTIVITIES TO BE DEVELOPED IN 2022

Circular Textiles Chain - A new European Technical Specification on Circular Textiles Chain – Requirements and categories (WI 00248731) will be developed in 2022 by CEN/TC 248 'Textiles and Textile products'. This project will describe categories of circular textile products. It will set requirements for input flows and the circular strategies applied to be able to report on categories of circular textile products. This will contribute to the EU Circular Economy Action Plan and should help defining environmental and circular criteria for this sector.

Mountaineering equipment - CEN/TC 136 'Sports, playground and other recreational facilities and equipment' is expected to develop a new European Standards in the field of Mountaineering equipment on Personal belay lanyards (FprEN 17520). The standard, intended to be published in early 2022, will specify safety requirements and test methods for lanyards intended to be the primary connection between the climber and the belay stance with the ability to withstand a dynamic impact. It falls under the M/031 in support of the Personal Protective Equipment (PPE) Regulation 2016/425/EC.

Safety of Toys - In support of new requirements in the Toys Safety Directive (2009/48/EC), CEN/TC 52 'Safety of Toys' is preparing a project which will result in the elaboration of five new European standards to allow users to test for the presence of chemicals in certain types of toys, specifically:

- Safety of toys – Formamide in foamed toy materials
- Safety of toys – TCEP and alternative flame retardants
- Safety of toys – Isothiazolinones in aqueous (toy) materials
- Safety of toys – Phenol
- Safety of toys – Bisphenol A

Furthermore, an amendment to EN 71-13 'Safety of toys – Part 13: Olfactory board games, cosmetic kits and gustative games' is to be published in 2022 to update the standard as a consequence of the fact that the Commission Directives (EU) 2020/2088 and 2020/2089 have amended the lists of allergenic fragrances in the Toy Safety Directive 2009/48/EC and that these changes become applicable on 5 July 2022.

Consumer

Defence and security

Traditionally, societal resilience used to be put to the test on the occasion of terrorist attacks, public security incidents or natural disasters. Today, as an addition to these traditional risks, we have also witnessed the unprecedented effects of a global pandemic on our society. Within Europe's recovery plan, priority will continue to be given to climate actions and to a digital strategy. Especially during the move towards a Digital Europe, security will be a major challenge, where standardization will have a major role to play. Security in a digital world is going to be a horizontal subject, embracing many aspects, including cybersecurity, security of cyber-physical and Internet-of-Things systems, security of critical infrastructures, but also the protection of privacy and human rights, the fight against fake news, and much more.

But digital security is only one perspective. General security considerations apply to virtually every sector. To meet the enhanced needs deriving from the evolution of society, the CEN-CENELEC Sector Forum on Security (SF-SEC) was created, with the primary

purpose of advising the CEN and CENELEC BT members on appropriate directions to be taken in security standardization. It gathers an extended community of experts from different sectors (transport, environment, innovative technologies, cybersecurity, construction, protective equipment, energy, chemicals etc.) that could potentially be impacted by security events.

One aspect that remains relevant is that security often requires an international approach. In the digital world, this is self-evident, but there are also plenty of real-world examples in other sectors, such as border security, the fight against international crime and terrorist attacks, and today's ongoing fight against COVID-19. However, more broadly, security includes aspects such as the performance of a single device, such as a fire extinguisher, or of FFP masks (well-known in the COVID-19 context, but also relevant for industrial use), not to forget a comprehensive security approach to an entire facility, or even to the whole society.

It is worth noting that a lot of standardization work takes place at the international level, where, for instance, ISO has produced a solid portfolio of standards. At the technical committee level, liaisons will exist to avoid the duplication of efforts between the International and the European level. For example, CEN/TC 391 'Societal and citizen security' liaises with ISO/TC 292 'Security and resilience' and ISO/TC 8 'Ships and marine technology', which allows for coordination across levels.

A final observation is the close co-operation with EU security research projects, where research outcomes have already been the basis of several CWAs. In addition, CEN and CENELEC have long-lasting collaborative relationships with the security industry, represented by European associations such as EURALARM (Association of European manufacturers, installers and service providers of the electronic Fire Safety and Security industry) and COESS (Confederation of European security services).

13 technical bodies responsible

CEN/TC 70	Manual means of firefighting equipment
CEN/TC 72	Fire detection and fire alarm systems
CEN/TC 191	Fixed firefighting systems
CEN/TC 192	Fire and Rescue Service Equipment
CEN/TC 263	Secure storage of cash, valuables and data media
CEN/TC 325	Prevention of crime by urban planning and building design
CEN/TC 367	Breath-alcohol testers
CEN/TC 368	Product Identification
CEN/TC 391	Citizen and societal security
CEN/TC 439	Private security services
CEN/CLC/JTC 4	Services for fire safety and security systems
CEN-CENELEC/JTC 13	Cybersecurity and data protection
CLC/TC 79	Alarm systems

Standards published by CEN and CENELEC

CEN and CENELEC portfolio of deliverables: 259 ENs + 54 other deliverables
Work Items currently in the Work Programme: 35 ENs + 6 other deliverables

Further information

- Defence and security (CEN)
- Defence and security (CENELEC)

URBAN SEARCH AND RESCUE

In the course of 2022, a CEN Workshop on urban search and rescue will take place. It will lead to the publication of a CEN Workshop Agreement (CWA) that specifies requirements and recommendations on the set-up of a field test and a test methodology for Urban Search and Rescue (USaR) equipment for the detection of victims under debris.

PANDEMIC PREDICTION AND MANAGEMENT

A CEN and CENELEC workshop will take place in 2022, with the aim to specify an assessment of the pandemic crisis prediction and management tools. The workhshop plans to publish the CWA 'Assessing Pandemic Crisis Prediction and Management Tools – Methodology of Demonstration-based Evaluation'.

OTHER STANDARDS AND ACTIVITIES TO BE DEVELOPED IN 2022

Private security services - In 2022, CEN/TC 439 will revise its terminology standard, EN 15602 'Private security services – Vocabulary'. Compared to the previous edition, the terms and definitions are updated to accommodate the growing need for common terminology and concepts for providers and customers of security services.

In 2021, EN 17483-1 'Private security services - Protection of critical infrastructure - Part 1: General requirements' was published. This document includes the main overarching requirements for the provision of private security services for critical infrastructure. On that basis, EN 16082:2011 and EN 16747:2015 will be revised. Thereby, the contents of the two standards will not only be revised, but transferred into the following new parts of the EN 17483 series:

- prEN 17483-2: Private security services - Protection of Critical Infrastructure - Part 2: Airport and aviation security services (will revise EN 16082:2011)
- prEN 17483-3: Private security services - Protection of Critical Infrastructure - Part 3: Maritime and port security services (will revise EN 16747:2015)

The standards will lay down quality criteria for the delivery of security services requested by public and private clients. They shall be suitable for the selection, attribution, awarding and reviewing of the most suitable provider of security services.

As a continuation of the work initiated with the publication of EN 17483-1, and the revision of EN 16082 and 16747 into 17483-2 and 17483-3, Working Group 1 'Critical Infrastructure Protection (CIP)' will identify and prioritise other Critical Infrastructure Sectors for which a sector-specific standard is necessary within the EN 17483 system.

Societal and citizen security - In the course of 2022, CEN/TC 391 'Societal and Citizen Security' will develop two new standards, in parallel with ISO:

- prEN ISO 22360 'Security and resilience – Crisis management – Concept, principles and framework'
- prEN ISO 22361 'Security and resilience – Crisis management – Guidelines for a strategic capability'

In addition, the TC will adopt EN ISO 22319 'Security and resilience – Community resilience – Guidelines for planning the involvement of spontaneous volunteers' (ISO 22319:2017).

Sector Forum for Security - The Sector Forum for Security (SF-SEC) coordinates the work of CEN and CENELEC technical bodies active in European security-related standardization. In 2022, the SF-SEC plans to hold an event on security standardization. The purpose of the event is to bring together stakeholders to discuss issues related to European security standardization and to find new ideas for improvement and development of the standardization activities.

One of the missions of the SF-SEC is to assess EU-funded research projects to identify those projects which could lead to new standardization activities. Indeed, there are several Horizon 2020-funded security research projects with dual-use potential. In response to this trend, the SF-SEC published its position paper on synergies between the civil, defence and space industries, and hopes to continue to work with the European Commission and other stakeholders on promoting and developing so-called hybrid standards.

Defence standardization - There is a general consensus that by seeking synergies between civil, space and defence industries in EU programmes, the EU will make more effective use of resources and technologies and create economies of scale.

CEN and CENELEC will facilitate the constructive dialogue between all stakeholders on standardization for the defence sector, in full transparency with the European Defence Agency and the NATO Standardization Office.

Digital society

CEN and CENELEC are involved in multiple sectors, such as Cybersecurity, Artificial Intelligence, ICT skills, eBusiness, eAccessibility, Blockchain and Distributed Ledger Technologies (DLTs), contributing to an inclusive digital society and a shared ecosystem of trust. In this sector, CEN and CENELEC work extensively with ISO and IEC, and other relevant European and international organisations, to develop common standards that can be applied worldwide.

Cooperation with European stakeholders is crucial to make the most relevant, market-driven and inclusive standards available for Europe: trade and industry associations, research projects, standards developing organizations (SDOs), the European Commission and various European institutions. This cooperation is materialised in the Multi-Stakeholder Platform on ICT standardization, which supports the European ICT standardization agenda.

ETSI, the European Telecommunications Standards Institute, represents a key partner for CEN and CENELEC in the digital sector: joint activities take place in particular in the cybersecurity and accessibility domains.

Finally, the Rolling Plan on ICT standardization, which CEN and CENELEC contribute to, provides each year an overview of policy actions and supporting ICT standardization activities.

46 technical bodies responsible

CEN/CLC/ETSI/JWG eAcc	eAccessibility
CEN/CLC/ETSI/SF-SSCC	CEN-CENELEC-ETSI Sector Forum on Smart and Sustainable Cities and Communities
CEN/CLC/JTC 13	Cybersecurity and Data Protection
CEN/CLC/WS 017	Development of a GALILEO enabled label
CEN/CLC/WS INACHUS	Urban search and rescue (USaR) robotic platform technical and procedural interoperability
CEN/CLC/WS SEP-IoT	Workshop on Best Practices and a Code of Conduct for Licensing Industry Standard Essential Patents in 5G and the Internet of Things (IoT), including the Industrial Internet
CEN/CLC/WS SEP2	Industry Best Practices and an Industry Code of Conduct for Licensing of Standard Essential Patents in the field of 5G and Internet of Things
CEN/SS F12	Information Processing Systems
CEN/TC 224	Personal identification and related personal devices with secure element, systems, operations and privacy in a multi sectorial environment
CEN/TC 225	AIDC technologies
CEN/TC 287	Geographic Information
CEN/TC 294	Communication systems for meters
CEN/TC 353	Information and Communication Technologies for Learning, Education and Training
CEN/TC 365	Internet Filtering
CEN/TC 428	ICT Professionalism and Digital Competences
CEN/TC 434	Electronic Invoicing
CEN/TC 440	Electronic Public Procurement
CEN/WS 084	Self-Sovereign Identifier for Personal Data Ownership and Usage Control (CEN WS ISÆN)
CEN/WS FATEDA	Standards-Compliant Formats for Fatigue Test Data
CEN/WS ICT ICT/SKILLS	Workshop (IT profiles and curricula)
CEN/WS IHAN	Elements of fair and functioning data economy: identity, consent and logging
CEN/WS JXF	XFS for the Java Platform
CEN/WS METEDA	Mechanical Test Data
CEN/WS SCS	Description and Assessment of Good Practices for Smart City Solutions
CEN/WS XFS	eXtensions for Financial Services
CLC/ETSI/JWG DD	ETSI-CENELEC Joint Working Group Digital Dividend
CLC/SR 100	Audio, video and multimedia systems and equipment
CLC/SR 103	Transmitting equipment for radiocommunication
CLC/SR 110	Flat panel display devices
CLC/SR 47F	Micro-electromechanical systems
CLC/SR 86	Fibre optics
CLC/SR 86B	Fibre optic interconnecting devices and passive components
CLC/SR 86C	Fibre optic systems and active devices
CLC/SS V24	Information technology equipment and audio, video and audiovisual equipment and systems
CLC/TC 100X	Audio, video and multimedia systems and equipment and related sub-systems
CLC/TC 108X	Safety of electronic equipment within the fields of Audio/Video, Information Technology and Communication Technology

CLC/TC 209	Cable networks for television signals, sound signals and interactive services
CLC/TC 215	Electrotechnical aspects of telecommunication equipment
CLC/TC 46X	Communication cables
CLC/TC 57	Power systems management and associated information exchange
CLC/TC 65X	Industrial-process measurement, control and automation
CLC/TC 86A	Optical fibres and optical fibre cables
CLC/TC 86BXA	Fibre optic interconnect, passive and connectorised components
CLC/WS 04	Interoperability framework requirements specification for services to the home (IFRS)
CEN-CLC/JTC 21	Artificial Intelligence
CEN/TC 468	Preservation of digital information

Standards published by CEN and CENELEC

CEN and CENELEC portfolio of deliverables: 1999 ENs + 522 other deliverables
Work Items currently in the Work Programme: 277 ENs + 34 other deliverables

Further information

- Digital Society (CENELEC)
- Digital Society (CEN)
- Artificial Intelligence
- Quantum Technologies

ARTIFICIAL INTELLIGENCE

Artificial Intelligence (AI) is progressing continuously and is widely affecting the industry, in areas as diverse asautomation, data management, and the integration of smart technology. Society is also impacted, as AI changes the way businesses operate, streamlines production, transforms workers' skillsets and even the day-to-day life of consumers. AI applies to a variety of sectors where standardization is of high relevance, such as smart manufacturing, robotics, autonomous transportation (including cars, trains, etc.), virtual reality, healthcare, visual recognition, data analysis/manipulation, AI assisted decision-making, home appliances, cybersecurity or spatial programming, to name just a few.

On the policy side, the EC Communication COM(2018) 237 and COM(2020)65 (EC White Paper on AI) identifies a series of challenges linked to the deployment, interoperability, scalability, societal acceptability/concerns, safety and liability of AI, which create a need for standardization. The European Commission has also made available in 2021 a proposal for an AI Regulation laying down harmonised rules for the EU, whose implementation will rely on European Standards.

The Joint CEN-CENELEC Technical Committee 21 (CEN-CLC/JTC 21) on Artificial Intelligence was created in 2021 to address the European market and policy needs. CEN-CLC/JTC 21 will notably follow-up and implement the CEN and CENELEC Roadmap on AI. In 2022, JTC 21 will produce standardization deliverables to address European market and societal needs and to underpin primarily EU legislation and policies based on the EU's principles and values: the objective is to contribute to the development of a ethical, human-centred and trustworthy AI from which all EU citizens can benefit.

Based on this ambition, JTC 21 has already engaged in a constructive dialogue with the European Commission to identify and produce standards to underpin the anticipated European legislation on AI as proposed by the Commission on 21 April 2021. JTC 21 will also have an advisory role towards other CEN and CENELEC committees whose sectors of activity is impacted by AI. Given the leadership ambitions of the EU in the AI domain, the JTC might be required in some cases to adopt a very pro-active standardization agenda. JTC 21 will develop its first work programme at the beginning of 2022.

CYBERSECURITY AND DATA PROTECTION

The relevance of information security is not limited to 'digitally native' businesses: it is increasingly relevant to all sectors, including traditional industries. The security of information and communication systems is an area of increasing concern, both for public authorities and for private companies. While ICT technologies open up new opportunities, they also create threats to operational safety, robustness and resilience. Standards can help mitigate this kind of cyber risks. Part of this work consists of collecting the new best practices that allow manufacturers and service providers to improve the security features of products, services and processes and boost consumer's trust in the digital environment.

The CEN-CENELEC Joint Technical Committee (CEN-CLC/JTC 13) 'Cybersecurity and Data Protection' will continue to develop, in cooperation with ISO and IEC, a dedicated architecture of standards in Europe, made of International Standards complemented by European Standards. In 2022, CEN-CLC/JTC 13 will further work on EN 'Privacy Information Management System per ISO/IEC 27701 - Refinements in European context'. This European standard will offer further requirements and considerations in a European context with the aim is to develop guidelines that organisations will be able to use for the purpose of demonstrating compliance with their obligations relating to GDPR. Many stakeholders would benefit from this new standard, ranging from organisations, to regulatory bodies and of course consumers, who will be able to trust products complying with a standard that strengthens the protection of personal data.

Furthermore, in support of the Cloud Services Scheme that ENISA is working on (in the frame of the Cybersecurity Act), CEN-CLC/JTC 13 is also set to make available in 2022 two Technical Specifications called 'Multi-layered approach for a set of requirements for information/cyber security controls for Cloud Services' & 'Requirements for Conformity Assessment Bodies certifying Cloud Services'.

On the OT security side, CLC/TC 65X 'Industrial-process measurement, control and automation' will continue to progress, in parallel to the IEC, the development and update of the EN IEC 62443 series 'Security for industrial automation and control systems'. In particular, prEN IEC 62657-2-2 'Security for industrial automation and control systems – Part 2-2: IACS security program ratings' will be further developed in 2022.

OTHER STANDARDS AND ACTIVITIES TO BE DEVELOPED IN 2022

ICT skills - In an increasingly digital economy, the challenge for Europe is to support its citizens in developing sufficient and appropriate ICT skills and competences in all sectors and levels. In this context, closing the gap between the number of job seekers and the number of vacant digital jobs is among the main priorities of the European economy. CEN/TC 428 'ICT professionalism and Digital competences' is responsible for all aspects of standardization related to developing ICT skills in all sectors, public and private. In 2022, the Technical Committee will finalise the elaboration of some European Standards related to the four major building blocks of ICT professionalism: competences, education and certification, code of ethics, body of knowledge. These activities will take place in the frame of EN 16234-1 'e-Competence Framework (e-CF) – a common European Framework for ICT professionals in all industry sectors', which CEN/TC 428 will start preparing to update in 2022.

Green Data Centres - The spread of the digital economy has led to an increasing demand for data, supported by the continuous construction, across Europe, of data centres of all sizes serving a large variety of business applications. This development has resulted in increased energy demand, which requires proper management and a careful consideration of its environmental and economic impacts. A data centre encompasses a great variety of products and systems. Therefore, its design and operation see the involvement of many different industries. There is a need to give guidance to stakeholders in the industry for energy management and environmental viability by providing a foundation of standards on data centres. In 2022, the CEN-CLC-ETSI Coordination Group on Green Data Centres will continue to develop and maintain two documents: the Review of standardization activities for Data Centres, which summarises the standardization landscape and references relevant standards; and the Standardization landscape for the energy management and environmental viability of data centres, which provides an in-depth analysis of standardization activities.

Furthermore, in 2022, CLC/TC 215 'Electrotechnical aspects of telecommunication equipment' will continue to revise the existing documents in the EN 50600 series and, in particular, plans the publication of new KPI standards for Carbon Usage Effectiveness (CUE) and Water Usage Effectiveness (WUE). The Data Centre Maturity Model for Energy Management and Environmental Sustainability as well as recommended practices for energy management will be developed further. CLC/TC 215 also covers the specification of alternative cabling configurations in EN 50173-20 and their measurement in EN 50697, both of which are expected to be finished in 2022.

Blockchain and Distributed Ledger Technologies - Blockchain and Distributed Ledger Technologies (DLTs) are promising developments in ICT for sharing data and managing transactions in a decentralised, controlled manner. The use of Blockchain and Distributed Ledger Technologies continues to grow rapidly, with many applications and systems being developed, notably in the context of Industry 4.0, with use cases in the energy, health, manufacturing, finance sectors, among others.

In 2022, CEN-CLC/JTC 19 'Blockchain and Distributed Ledger Technologies' will continue to mirror the activities of ISO TC 307 to develop a dedicated architecture of standards in Europe, taking policy-related developments into account. The JTC will notably address the topics of electronic identification and cybersecurity, in cooperation with CEN/TC 224 'Personal identification and related personal devices' and CEN-CLC/JTC 13 'Cybersecurity and Data protection'.

Information and Communication Technologies for Learning, Education and Training - CEN/TC 353 'Information and Communication Technologies for Learning, Education and Training' focuses its attention on the need for standards in the educational sector, ranging from kindergarten and schools to higher education and lifelong learning. After the COVID-19 outbreak, the educational sector needs to change its paradigm and contemplate the use of digital tools, considering the fact that advanced learning technologies will have an enormous impact on how children will be educated. The use of technology in education (EdTech) is still in its infancy, and a tremendous development within this domain should be expected in the years to come. CEN/TC 353 aims to create a set of basic rules and guidelines on how technology has to be developed and used by European educational institutions in order to achieve their educational and pedagogical goals, and at the same time ensure that the requirements are implementable by the EdTech industry.

Electrotechnology

CENELEC manages and supports the European standardization activities in the electrotechnical sector. A wide range of CENELEC Technical Committees, Task Forces and Working Groups deal with different topics and types of products, but common to all their activities is a strong commitment to ensuring the highest possible levels of safety and performance and the most efficient use of energy.

CENELEC values close cooperation with its international counterpart, the International Electrotechnical Commission (IEC). To facilitate a consensus-based process between European and International standardization activities in the electrotechnical sector, CENELEC and IEC formalised the framework of their cooperation through the signature of an 'agreement on common planning of new work and parallel voting', known as the Frankfurt Agreement. As a result, over 72% of CENELEC standards are identical to international standards adopted by the IEC, and another 6% are based on IEC standards. The high level of alignment between European and International standards means that companies active in the electrotechnical sector can benefit from access to markets around the world, with lower compliance costs and integrated supply chains.

84 technical bodies responsible

CLC/BTTF 129-1	Thermal resistant aluminium alloy wire for overhead line conductor
CLC/BTTF 132-1	Aluminium conductors steel supported (ACSS type) for overhead electrical lines
CLC/BTTF 132-2	Revision of EN 50156 "Electrical equipment for furnaces and ancillary equipment"
CLC/BTTF 146-1	Losses of small transformers : methods of measurement, marking and other requirements related to eco-design regulation
CLC/BTTF 160-1	Recurrent Test of Electrical Equipment
CLC/BTTF 60-1	Assembly of electronic equipment
CLC/BTTF 62-3	Operation of electrical installations
CLC/BTWG 128-3	BT efficiency
CLC/BTWG 143-1	LVD standardization in the EU regulatory framework
CLC/BTWG 154-1	EMC standardization in the EU regulatory framework
CLC/Guides	Group for CENELEC Guides
CLC/SR 1	Terminology
CLC/SR 10	Fluids for electrotechnical applications
CLC/SR 101	Electrostatics
CLC/SR 104	Environmental conditions, classification and methods of test
CLC/SR 109	Insulation co-ordination for low-voltage equipment
CLC/SR 112	Evaluation and qualification of electrical insulating materials and systems (to be defined)
CLC/SR 113	Nanotechnology standardization for electrical and electronics products and systems
CLC/SR 119	Printed electronics
CLC/SR 120	Electrical Energy Storage (EES) Systems
CLC/SR 121	Switchgear and controlgear and their assemblies for low voltage
CLC/SR 121B	Low-voltage switchgear and controlgear assemblies
CLC/SR 124	Wearable Electronic Devices and Technologies
CLC/SR 15	Solid electrical insulating materials
CLC/SR 23	Electrical accessories
CLC/SR 23B	Plugs, socket-outlets and switches
CLC/SR 23G	Appliance couplers
CLC/SR 23J	Switches for appliances
CLC/SR 23K	Electrical energy efficiency products
CLC/SR 25	Quantities and units
CLC/SR 27	Industrial electroheating and electromagnetic processing
CLC/SR 29	Electroacoustics
CLC/SR 32B	Low-voltage fuses
CLC/SR 32C	Miniature fuses
CLC/SR 33	Power capacitors and their applications
CLC/SR 35	Primary cells and batteries
CLC/SR 3C	Graphical symbols for use on equipment
CLC/SR 3D	Product properties and classes and their identification
CLC/SR 40	Capacitors and resistors for electronic equipment

CLC/SR 46F	RF and microwave passive components
CLC/SR 47	Semiconductor devices
CLC/SR 47A	Integrated circuits
CLC/SR 47D	Mechanical standardization of semiconductor devices
CLC/SR 47E	Discrete semiconductor devices
CLC/SR 48	Electromechanical components and mechanical structures for electronic equipment
CLC/SR 48B	Electrical connectors
CLC/SR 48D	Mechanical structures for electronic equipment
CLC/SR 49	Piezoelectric and dielectric devices for frequency control and selection
CLC/SR 51	Magnetic components and ferrite materials
CLC/SR 56	Dependability
CLC/SR 70	Degrees of protection provided by enclosures
CLC/SR 87	Ultrasonics
CLC/SR 89	Fire hazard testing
CLC/SR 91	Electronics assembly technology
CLC/SR 94	All-or-nothing electrical relays
CLC/SR 96	Transformers, reactors, power supply units, and combinations thereof
CLC/SS Z99	Undetermined
CLC/TC 106X	Electromagnetic fields in the human environment
CLC/TC 121A	Low-voltage switchgear and controlgear
CLC/TC 20	Electric cables
CLC/TC 204	Safety of electrostatic painting and finishing equipment
CLC/TC 205	Home and Building Electronic Systems (HBES)
CLC/TC 205A	Mains communicating systems
CLC/TC 210	Electromagnetic Compatibility (EMC)
CLC/TC 213	Cable management systems
CLC/TC 216	Gas detectors
CLC/TC 21X	Secondary cells and batteries
CLC/TC 22X	Power electronics
CLC/TC 23BX	Switches, boxes and enclosures for household and similar purposes, plugs and socket outlet for D.C.
CLC/TC 23E	Circuit breakers and similar devices for household and similar applications
CLC/TC 23H	Plugs, Socket-outlets and Couplers for industrial and similar applications, and for Electric Vehicles
CLC/TC 34	Lamps and related equipment
CLC/TC 37A	Low voltage surge protective devices
CLC/TC 38	Instrument transformers
CLC/TC 40XA	Capacitors and EMI suppression components
CLC/TC 40XB	Resistors
CLC/TC 55	Winding wires
CLC/TC 64	Electrical installations and protection against electric shock
CLC/TC 72	Automatic electrical controls
CLC/TC 76	Optical radiation safety and laser equipment
CLC/TC 81X	Lightning protection
CLC/TC 85X	Measuring equipment for electrical and electromagnetic quantities

CLC/TC 95X	Measuring relays and protection equipment
CLC/WS 05	Flow batteries - Requirements and test methods

Standards published by CEN and CENELEC

CEN and CENELEC portfolio of deliverables: 3483 ENs + 60 other deliverables
Work Items currently in the Work Programme: 590 ENs + 4 other deliverables

Standardization requests from EC/EFTA

M/511 – Low Voltage
M/552 – EMC
M/536 – Radio Equipment
M/351 – EMF
M/443 – Cables
M/468 – Charging of electric vehicles
M/495 – Small, medium and large power transformers

Further information

- Electrotechnology General
- Electric Motors and Transformers
- Accumulators, Primary cells and Primary Batteries
- Electronic, Electromechanical and Electrotechnical Supplies
- Lighting Equipment and Electric Lamps
- Insulated Wire and Cable

ELECTROTECHNOLOGY GENERAL

A wide range of CENELEC Technical Committees, Task Forces and Working Groups deal with different topics and types of products. Their standardization activities always ensure that the highest possible levels of safety and performance and the most efficient use of energy are met.

CENELEC standards, in the electrotechnology field, are also developed in support of EU legislations, notably the Low-Voltage Directive (LVD), the Electro-magnetic compatibility Directive (EMCD) and the Radio Equipment Directive (RED). When such CENELEC harmonised standards are cited in the Official Journal of the European Union (OJEU), manufacturers, other economic operators, or conformity assessment bodies can use these standards to demonstrate that products, services, or processes comply with relevant EU legislation. CENELEC is also active in the development of European Standards in support of the Machinery Directive, the General Product Safety Directive (GPSD) or the Medical Devices Regulation.

The coordination of activities under LVD, EMC and RED is done under the umbrella of the following Working Groups:

- CLC/BTWG 143-1 - LVD standardization in the EU regulatory framework: CLC/BTWG 143-1 addresses horizontal issues in relation to standardization surrounding LVD Directive 2014/35/EU and its corresponding standardization request (M/511). The BTWG offers a platform to prepare and/or mirror the LVD working party and LVD ADCO and coordinates matters related to the LVD work programme and sectoral agreements. In 2022, the BTWG will continue to provide support to Technical Committees for any issue they may have related to LVD, including providing an analysis of LVD HAS assessments from a horizontal perspective leading to non-citation of harmonised standards, as well as offering solutions and providing (individual) guidance and sector specific training. BTWG 143-1 does not undertake any standardization work, but it works closely with Technical Bodies that work under mandate M/511.
- CLC/BTWG 154-1 - EMC standardization in the EU regulatory framework: in coordination with and as a complement to the work within CLC/TC 210 'EMC', CLC/BTWG 154-1 will continue, in 2022, to address horizontal issues in relation to standardization surrounding EMC Directive 2014/30/EU and offers a platform to prepare and/or mirror the activities of the EMC Working Party. BTWG 154-1 does not undertake any standardization work, but it works closely with Technical Bodies that work under the EMC mandate M/552. BTWG 154-1 will continue to focus on improving the Technical Bodies understanding of the concerns and requests of the European Commission with regards to standardization, and to seek solutions for obstacles hindering the citation of harmonised standards (such as the use of statistical methods, manufacturer defined performance criteria and measurement uncertainty in standards).
- CEN-CLC/BTWG 10 'RED standardization impact': BTWG 10 mirrors the evolution around the Radio Equipment Directive (RED, 2014/53/EU) in the various European Commission services and will continue to assess the impact on CEN and CENELEC standardization activities, eventually proposing solutions for identified problems. This includes: interaction with other directives/regulations (mainly EMCD/LVD, but also other); ensuring coordination with the European Commission, especially on the OJEU listings; coordinating with ETSI; and dealing with potential overlaps in work. BTWG 10 does not undertake any standardization work, however it provides guidance on addressing specific aspects of the RED.

OTHER STANDARDS AND ACTIVITIES TO BE DEVELOPED IN 2022

Electromagnetic fields in the human environment - 5G technologies present new opportunities for the entire industry, which go beyond telecommunication equipment.

The future of logistics, transport, agricultural business, facility management and telecommunications will change drastically. International and European standardization organisations are developing procedures for the reproducible and conservative measurement or calculation of the power density occurring near the human body by radio frequency transmitting devices, including RF equipment embedded garments, millimetre wave and active beamforming antennas. European Standards can be used to evaluate the compliance of radio devices for use in proximity to the human body. In 2022, CLC/TC 106X 'Electromagnetic fields in the human environment' will continue to develop such standards for the compliance of radio equipment with exposure guidelines.

Electrical installations - CLC/TC 64 is responsible for standardization on the protection against electric shock arising from equipment, installations and systems without limit of voltage. In 2022, the TC will continue to work on several projects in the frame of the HD 60364 series: requirements for special installations or locations (such as swimming pools, camping parks, medical locations) and the selection and erection of electrical equipment (such stationary secondary batteries, wiring systems, switchgear).

For its part, CLC/TC 23 E 'Circuit breakers and similar devices for household and similar applications' will further develop, in parallel with IEC, prEN IEC 62752 'In-cable control and protection device for mode 2 charging of electric road vehicles (IC-CPD)', which will be offered for citation under the LV Directive.

This sector is also addressed by CLC/TC 23BX 'Switches, boxes and enclosures for household and similar purposes, plugs and socket outlet for D.C.'. In 2022, the TC will finalise parts of the European EN 60670 series on boxes and enclosures for electrical accessories for household and similar fixed electrical installations, in the frame of the LVD.

Power Transformers - CLC/TC 14 is responsible for standardization in the field of power transformers, tap-changers and reactors for use in power generation, transmission and distribution. In 2022, the TC will continue working on prEN 50708-1-1 'Power transformers – additional European requirements – part 1-1: Common part – General requirements' and prEN 50708-3-1 'Power transformers – additional European requirements: Part 3-1: large power transformers – general requirements'. Both standards are intended for citation under the Commission Regulation on small, medium and large power transformers (eco-design).

Communication cables - Notwithstanding the trend for industry to go wireless, cables remain essential parts of the backbone of all communication systems. For this reason, they need to continuously evolve to offer greater speed and quality and support the ever-higher demands of the overall communication system. This is illustrated by the work of CLC/TC 46X 'Communication cables' to accommodate future high bit rates cabling solutions (40GB/s): the extension of the EN 50288 series to meet frequencies up to 2000 MHz.

Operation of electrical installations - prEN 50110-1 'Operation of electrical installations' (Part 1 'General requirements' and Part 2 'National annexes') is a general standard with a broad field of application for the operation of electrical installations in private households up to industrial distribution grids. This European Standard sets out the requirements for the safe operation of and work activity on, with, or near these electrical installations. The requirements are focused on workers' safety and apply to all operational, working and maintenance procedures. They apply to all non-electrical work activities such as building work near to overhead lines or underground cables as well as electrical work activities, when there is a risk of electrical danger.

CLC/BTTF 62-3 'Operation of electrical installations' is continuously working on an evolutionary development of this standard to increase understandability, practicability and application of new regulations to every day's practice by the professional public.

A further goal is to broaden the common basis of this standard for all European countries.

In 2022, CLC/BTTF 62-3 foresees the launch of the publication of a revised version of EN 50110-1.

In 2022 work will start to support IEC PC 128, which was founded on the initiative of the German and French National Committees to work on a technical specification on IEC-level that is based on EN 50110.

Lighting - CLC/TC 34 prepares European Standards in the field of electrical light sources including lamps, lamps caps and holders, lamp control gear and luminaires. One of the highlights for 2022 for CLC/TC 34 will be the work on a standard applied to Adaptive Emergency Escape Lighting Systems. This standard is developed in cooperation with CEN/TC 169 that is developing EN 1838 on the same topic. Both standards will complement each other.

Secondary cells and batteries - In full alignment with international activities, CLC/TC 21X 'Secondary cells and batteries' addresses the requirements covering the aspects of safety installation principles, performance, applications, dimensions, labelling and testing. In 2022, the TC will work on several new standards in alignment with IEC. Among which, EN IEC 63338 'General guidance for reuse of secondary cells and batteries' will be developed by CLC/TC 21X.

Electrical energy measurement and control - In 2022, in the sector of Electrical equipment and apparatus, CLC/TC 13 will continue the work on the revision of EN 50470-3 'Electricity metering equipment (AC) - Part 3: Particular requirements - Static meters for active energy (class indexes A, B and C)' in support of the Measuring Instruments Directive (M/541). In 2022, CLC/TC 13 will start a new European DC meter standard (future EN 50470-4).

Home and Building Electronic System (HBES) - In 2022, CLC/TC 205 will develop a new homegrown standard on the topic of IoT: EN 50090-6-3 'Home and Building Electronic Systems (HBES)- Part 6-3 -3rd Party HBES IoT API'. The standard will allow to interface to data of an installation with EN 50090 compliant products without the need to implement the entire EN 50090 series. The document will be developed first as a European standard; in a second step, CLC/TC 205 will decide which international committee the document can be offered to.

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Energy and utilities

The transition to a low-carbon economy has started. In July 2021, the European Commission issued the 'Fit for 55' package that intends to facilitate a European Union greenhouse gas emission cut of 55% by 2030 (compared to 1990) and has as its core mission to turn the 2020s into a transformative decade for climate action. If agreed and implemented, the Fit for 55 proposals would both deepen and broaden the decarbonisation of Europe's economy, with the objective to achieve climate neutrality by 2050.

The package contains many legislative proposals (such as the creation of a new EU emissions trading system for buildings and road transport, or the setting of increased renewable energy and energy efficiency targets) that will impact the development in the energy sector in the coming years. Many European governments, organisations, companies and citizens are determined to act towards achieving this goal, although a very challenging one.

This objective calls for all actors involved to rethink the way we produce and consume and how our infrastructures work, the use of resources and the functioning of transportation systems. The further modernisation of the EU's economy and the development of more secure, affordable and sustainable energy systems for all EU citizens need the renewal of infrastructures and the emergence of new technologies.

European standards can bring a big contribution: they are a flexible tool to improve safety and performances, raise levels of energy efficiency and protect consumers, workers and the environment. Standards also lift barriers to the uptake of environmentally friendly technologies and materials, by specifying tests or providing robust definitions that avoid misleading environmental claims. Standards enable the development of sustainable finance, integrating the materiality of technical requirements with due diligence and underwriting the procedures of financial institutions and the disclosure of financial/nonfinancial requirements. CEN and CENELEC have a long experience of working with industry partners, the European Commission and other stakeholders to develop standards responding to the need for a cleaner and more sustainable energy system.

Standardization plays an important role in meeting EU targets by promoting best practices, improving energy efficiency and safety and providing tools to optimise installations and systems.

79 technical bodies responsible

CEN/CLC/ETSI/CG-SG	CEN-CENELEC-ETSI Coordination Group on Smart Grids (CG-SG)
CEN/CLC/JTC 10	Material efficiency aspects for products in scope of Ecodesign legislation
CEN/CLC/JTC 14	Energy management and energy efficiency in the framework of energy transition
CEN/CLC/JTC 15	Energy measurement plan for organizations
CEN/CLC/JTC 2	Power Engineering
CEN/CLC/JTC 6	Hydrogen in energy systems
CEN/CLC/WS EINSTEIN	Good Practice Thermal Energy Audits (GPTEA)
CEN/CLC/WS REEMAIN	CEN/CENELEC Workshop on REEMAIN Methodology for Resource and Energy Efficiency Manufacturing
CEN/CLC/WS SEA-TITAN	Modular and cross-cutting Power Take-Off units for wave energy converters. Recommendations and laboratory testing
CEN/CLC/WS WiseGRID	Reference model for distribution application for microgrids
CEN/SS F23	Energy
CEN/SS N02	Solid fuels
CEN/SS N21	Gaseous fuels and combustible gas
CEN/SS S08	Air quality
CEN/SS S12	Gas analysis
CEN/SS S26	Environmental management
CEN/SS S27	Waste - Characterization, treatment and streams
CEN/TC 107	Prefabricated district heating and district cooling pipe system
CEN/TC 164	Water supply
CEN/TC 165	Waste water engineering
CEN/TC 183	Waste management
CEN/TC 19	Gaseous and liquid fuels, lubricants and related products of petroleum, synthetic and biological origin
CEN/TC 230	Water analysis
CEN/TC 234	Gas infrastructure
CEN/TC 235	Gas pressure regulators and associated safety devices for use in gas transmission and distribution
CEN/TC 264	Air quality
CEN/TC 282	Installation and equipment for LNG
CEN/TC 308	Characterization and management of sludge
CEN/TC 312	Thermal solar systems and components
CEN/TC 335	Solid biofuels
CEN/TC 343	Solid Recovered Fuels
CEN/TC 383	Sustainably produced biomass for energy applications
CEN/TC 408	Natural gas and biomethane for use in transport and biomethane for injection in the natural gas grid
CEN/TC 411	Bio-based products
CEN/TC 430	Nuclear energy, nuclear technologies, and radiological protection
CEN/TC 441	Fuel labelling
CEN/TC 444	Environmental characterization of solid matrices
CEN/TC 451	Water wells and borehole heat exchangers
CEN/TC 454	Algae and algae products
CEN/TC 467	Climate Change

CEN/WS 064 Phase 1	Design and Construction Code for mechanical equipments of innovative nuclear installations (European Sustainable Nuclear Industrial Initiative)
CEN/WS 064 Phase 2	Design and Construction Codes for Gen II to IV nuclear facilities (pilot case for process for evolution of AFCEN codes)
CEN/WS 064 Phase 3	Design and Construction Codes for Gen II, III and IV nuclear facilities
CEN/WS 066	Clean harbours - Best practices
CEN/WS 073	Eco-efficient Substations
CEN/WS 079	Sustainable Integrated Water Use & Treatment in Process Industries "SustainWATER"
CEN/WS 082	AquaVir
CEN/WS 108	Mapping of the mandatory and voluntary Carbon Management framework in the EU
CEN/WS Energy Retrofit	Sustainable Energy Retrofit Process Management for Multi-Occupancy Residential Buildings with Owner Communities
CEN/WS EvaVOLATILE	Anaerobic digestion plants - Feasibility as-sessment methodology for integrating a Volatile Fatty Acid Platform Technology
CEN/WS NEXTOWER	High temperature accelerated ageing of advanced ceramic specimens for solar receivers and other applications under concentrated solar radiation
CLC/SR 105	Fuel cell technologies
CLC/SR 114	Marine energy - Wave and tidal energy converters
CLC/SR 117	Solar thermal electric plants
CLC/SR 122	UHV AC transmission systems
CLC/SR 123	Management of network assets in power systems
CLC/SR 32	Fuses
CLC/SR 32A	High-voltage fuses
CLC/SR 36	Insulators
CLC/SR 37	Surge arresters
CLC/SR 37B	Components for low-voltage surge protection
CLC/SR 4	Hydraulic turbines
CLC/SR 42	High-voltage and high-current test techniques
CLC/SR 5	Steam turbines
CLC/SR 73	Short-circuit currents
CLC/SR 90	Superconductivity
CLC/TC 11	Overhead electrical lines exceeding 1 kV a.c. (1,5 kV d.c.)
CLC/TC 111X	Environment
CLC/TC 13	Electrical energy measurement and control
CLC/TC 14	Power transformers
CLC/TC 17AC	High-voltage switchgear and controlgear
CLC/TC 36A	Insulated bushings
CLC/TC 45AX	Instrumentation, control and electrical power systems of nuclear facilities
CLC/TC 45B	Radiation protection instrumentation
CLC/TC 7X	Overhead electrical conductors
CLC/TC 82	Solar photovoltaic energy systems
CLC/TC 88	Wind turbines
CLC/TC 8X	System aspects of electrical energy supply
CLC/TC 99X	Power installations exceeding 1 kV a.c. (1,5 kV d.c.)

Standards published by CEN and CENELEC

CEN and CENELEC portfolio of deliverables: 1945 ENs + 225 other deliverables
Work Items currently in the Work Programme: 418 ENs + 17 other deliverables

Standardization requests from EC/EFTA

M/495 – Ecodesign
M/498 – Pumps
M/559 – Welding equipment
M/572 – Taps and showers
M/573 – Ecodesign servers and data storage products
M/XXX (Anticipated) – Batteries
M/XXX (Anticipated) - Ecodesign and energy labelling requirements for electronic displays
M/XXX (Anticipated) – Hydrogen
M/525 - standards on pyrolysis oils produced from biomass feedstocks

Further information

- Energy and utilities (CEN)
- Energy and utilities (CENELEC)
- Energy Efficiency and Management
- Ecodesign, energy labelling and material efficiency

THE CEN AND CENELEC SECTOR FORUM ON ENERGY MANAGEMENT ENERGY TRANSITION (SFEM)

The CEN and CENELEC Sector Forum on Energy Management Energy Transition (SFEM) acts as an advisory and coordination body for policy and strategic matters in relation to the standardization of energy management and efficiency. It continuously adapts its activity to the latest scientific and policy trends in the energy sector. SFEM gathers stakeholders, from innovation to business and finance, from policy makers to consumers, with the aim to facilitate the path from innovation to market.

In 2021, SFEM reviewed its work programme against the energy related elements of the European Green Deal. Looking at the elements "Increasing the EU's Climate ambition for 2030 and 2050" and "Supplying clean, affordable and secure energy", SFEM found its current priorities confirmed, and will carry on working on these topics also in 2022.

The Working Group (WG) 'Financing tools' will continue its successful work on linking the energy-related standards of CEN-CENELEC/JTC 14 'Energy management and energy efficiency in the framework of energy transition' with sustainable financing, using the established relationship with organisations such as the EU Energy Efficiency Financial Institutions Group (EEFIG).

The newly established Working Group on Blockchain and Distributed Ledger Technologies (DLT) in the Energy Sector, will further explore the technical and commercial framework, to enable the successful application of Blockchain and DLT in support of the goals of the European Green Deal. A report on this activity is expected by the end of 2022.

Another new Working Group on Multiple Benefits started out in 2021 to take a more holistic view on the identification of benefits of energy efficiency improvements for the various societal

groups (e.g. citizens, industry, states, etc.). In 2022 it will work on making these benefits measurable and link it to standards.

SFEM will also pay special attention to the matter of Behavioural Change. Mindset and behaviour of people has been identified as a key element to either promote or impede the implementation of any energy related initiative. In 2022, SFEM will focus on the analysis of national initiatives, with a view to derive appropriate conclusions for standardization activities.

Rapid developments regarding the use of hydrogen in the energy sector are ongoing with high priority. Consequently, the SFEM Working Group on Hydrogen will continue its work to develop standardization strategies in this field and provide advice to all relevant stakeholders and standardization groups. SFEM WG Hydrogen will organise a series of workshop, in collaboration with CEN-CENELEC JTC6 'Hydrogen in Energy Systems', to further identify critical needs in the mobility sector.

SFEM is currently gathering information on the Fit for 55 Package, issued by the European Commission to implement some key elements of the European Green Deal. In regular consultation with the European Commission, this information will be carefully reviewed to provide a conclusive answer on the question of how standardization can support the implementation of the Package. Moreover, SFEM will closely coordinate its scope of activities with the CEN-CENELEC Strategic Advisory Body on Environment (SABE), with a particular focus on those activitiesrelated to the Green Deal.

Furthermore, SFEM is planning to organise an open seminar in spring 2022 on one of the topics included in its work programme.

GAS INFRASTRUCTURE (INCL. HYDROGEN)

The focus of the standardization work in the field of gas infrastructure will remain also for 2022 the provision of hydrogen readiness by revision and elaboration of the appropriate standards. This includes setting requirements for the injection of gases from renewable and low-carbon gases into the grid, the readiness of hydrogen blends, and the preparation of the repurposing of the natural gas infrastructure for pure hydrogen.

CEN/TC 234 'Gas infrastructure' will progress, among others, with the work of the following hydrogen-related projects:

- EN 12583 'Gas Infrastructure - Compressor stations - Functional requirements', which in addition to the update of technical aspects, also includes requirements for hydrogen readiness of compressor stations;
- CEN/TR 17797 'Gas infrastructure - Consequences of hydrogen in the gas infrastructure and identification of related standardisation need in the scope of CEN/TC 234'.

CEN/TC 235 'Gas pressure regulators and associated safety devices for use in gas transmission and distribution' will continue its work on hydrogen and blends hydrogen/natural gas requirements to update EN 334 'Gas pressure regulators for inlet pressures up to 100 bar' and EN 14382 'Gas safety shut-off devices for inlet pressure up to 10 MPa (100 bar)'.

CEN-CLC/JTC 6 'Hydrogen in energy systems', which deals with devices and connections for the production, storage, transport and distribution, measurement and use of hydrogen from renewable energy sources and other sources, will further progress in the development of EN ISO 24078 'Hydrogen in energy systems – vocabulary'. It will also develop a Technical Specification regarding the safe use of hydrogen in built constructions. Moreover, a new project on zoning distances for hydrogen equipment may be started.

Moreover, the Joint Task Force on hydrogen in natural gas systems, which combines the expertise of the CEN-CENELEC Sector Forum Energy Management Working Group 'Hydrogen', the CEN Sector Forum Gas Infrastructure and the Sector Forum Gas Utilization, will continue with its project to map and analyse the industrial end-users' need for their process regarding hydrogen quality with the intention to identify their needs and the way to include them into the relevant standards.

Finally, the SFEM Working Group 'Hydrogen' will further progress the gap analysis on research and standardization needs on hydrogen in aviation, maritime and rail traffic. In addition, heavy duty is also considered an important topic, and the standards that could be needed willbe further investigated. The organisation of workshops focusing on identifying the needs for pre-normative research and standardization is also expected.

On a different topic, CEN/TC 234 'Gas infrastructure' expects to finalise by 2022, EN 17649 'Gas infrastructure - Safety Management System (SMS) and Pipeline Integrity Management System (PIMS) - Functional requirements'. This standard is developed under the framework of M/526 as regards the adaptation to climate change.

In addition, this Technical Committee, taking into the development of legislation to reduce methane emissions from the energy sector, expects to conclude the work on a Technical Specification providing a methodology for methane emissions quantification for gas transmission, distribution and storage systems and LNG terminals.

BATTERIES

CEN and CENELEC are part of the European Battery Alliance (EBA), a platform gathering the European Commission, Member States, relevant stakeholders, the EU Investment Bank and 'innovators' with the objective 'to create a competitive manufacturing value chain in Europe with sustainable battery cells at its core'.

In 2022, CEN and CENELEC intend to continue their participation to the European Battery Alliance and actively contribute to the development of standards in support of the upcoming Standardization Request on performance, safety and sustainability requirements for batteries. These future standards will support the upcoming regulation on batteries and waste batteries.

OTHER STANDARDS AND ACTIVITIES TO BE DEVELOPED IN 2022

Ecodesign - In the European Union, energy-related products are regulated by the Ecodesign Framework Directive (2009/125/EC), which sets minimum requirements for such products with the aim of ensuring their free movement within the internal market, and the Energy Labelling Framework Regulation (EU) 2017/1369, that enables consumers to make a better and more rational use of energy by informing them about the energy efficiency of products.

CEN and CENELEC produce European Standards that provide dedicated methods for measuring the energy performance of various energy-related products against the compulsory values and thresholds laid down in the Regulations adopted by the European Commission.

The CEN and CENELEC Ecodesign Coordination Group (Eco-CG) coordinates and advises on standardization activities in the fields of Ecodesign and Energy Labelling. The group serves as a focal point concerning standardization issues related to the Ecodesign Standardization Requests delivered under framework Directive 2009/125/EC on Ecodesign of energy-related products and framework Regulation (EU) 2017/1369 on Energy labelling of energy-related products and their future versions.

Eco-CG expects to publish guidelines for anti-circumvention in standards developed in support of Ecodesign and energy labelling regulations. In addition, in 2022, the Group will work on a guidance document to present how the standards developed by CEN-CLC/JTC 10 'Energy-related products – Material Efficiency Aspects for Ecodesign' could be used by product-specific Technical Committees when developing product-specific or product group standards addressing material efficiency aspects.

Wind Energy - CLC/TC 88 'Wind turbines' will continue working on the development of standards for wind turbines under the framework of the Frankfurt Agreement. In particular, in 2022, the Committee will focus

on the development of several parts of EN IEC 60400 'Wind energy generation systems' series together with IEC/TC 88.

Solar Energy - CLC/TC 82 'Solar photovoltaic energy systems' develops standards related to all topics of solar photovoltaic energy systems, from the conversion of light to the interfaces to the public grid or users.

In 2022, the Committee will work on the revision of the EN 50583-1 and EN 50583-2 'Photovoltaics in buildings'. Standardization in this field is necessary to ensure a high level of product quality, product safety and the consideration of environmental aspects.

Nuclear Energy - The core principle and responsibility of the nuclear industry is guarantee its safety. For this reason, CEN and CENELEC, in close collaboration with the international standardization organizations, ISO and IEC, are working on the development and publication of standards that ensure the safety, environmental and technical requirements of the nuclear energy industry.

In 2022, CLC/TC 45AX 'Instrumentation, control and electrical power systems of nuclear facilities' will analyse the potential adoption of several IEC Standards as European standards.

CLC/TC 45B 'Radiation protection instrumentation' expects to adopt as European Standard IEC 63121 'Radiation protection instrumentation - Vehicle-mounted mobile systems for the detection of illicit trafficking of radioactive materials'.

CEN/TC 430 'Nuclear energy, nuclear technologies, and radiological protection' expects to adopt several ISO standards developed by its international counterpart ISO/TC 85, such as ISO 19443 'Quality management systems - Specific requirements for the application of ISO 9001:2015 by organizations in the supply chain of the nuclear energy sector supplying products and services important to nuclear safety (ITNS)'.

Electricity distribution and equipment - In 2022, CLC/TC 8X 'System aspects of electrical energy supply', whichdevelopss standards to facilitate the functioning of electricity supply systems in open markets, will continue with the revision of EN 50549-10 'Requirements for generating plants to be connected in parallel with distribution networks - Part 10 Tests demonstrating compliance of units' and of EN 50549 Part 1 and Part 2 that set requirements for generating plants to be connected in parallel with Low Voltage and Medium Voltage distribution networks, respectively.

Gas distribution and related services - LNG: CEN/TC 282 'Installation and equipment for LNG' develops and maintain standards in the field of installations, equipment and procedures used for the production, transportation, transfer, storage, regasification and use of LNG. In 2022, the Technical Committee plans to pursue the revision of EN 13645 'Installations and equipment for liquefied natural gas - Design of onshore installations with a storage capacity between 5 t and 200 t' applicable to LNG satellite plants and LNG gas fuelling stations for vehicles.

Gas quality: with the increasing use of renewable gases such as hydrogen or biomethane in the European natural gas systems, gas qualities need to be predictable for the end-applications. In this context, the CEN Sector Forum Gas results of the pre-normative studies on the Wobbe Index and oxygen will be fed into the revision of EN 16726 on gas quality for H-gas. In addition, CEN/TC 234 'Gas infrastructure' in cooperation with CEN-CLC/JTC 6 'Hydrogen in energy systems' will continue with the development of a standard on the quality of hydrogen for the injection into natural gas and for its use in converted natural gas systems.

Energy management - CEN/CLC/JTC 14 'Energy management and energy efficiency in the framework of energy transition' deals with horizontal standardization in the field of energy management within the energy transition framework.

In 2022, EN 17669 'Energy Performance Contracting - Minimum requirements' will be published. It will define the minimum requirements of an Energy Performance Contract between the beneficiary and the provider of an energy efficiency measure. The revision of the EN 16247-1, 2, 3 and 4 'Energy audits' series will also be completed, specifying requirements, common methodology and deliverables for energy audits.

Waste Management - The deliverables of CEN/TC 183 'Waste management' specify technical requirements to, on the one hand, minimise significant hazards and hazardous situations which may occur during collection and transportation of waste, and, on the other hand, to increase the efficiency of waste disposal processes on the other. In 2022, the TC will continue to revise the noise test code for refuse collection vehicle (EN 1501-4) and finally publish a new standard on data communication between communication management system and the back-office system for stationary waste containers (EN 17367). While EN 1501-4 will lead to quieter vehicles and benefit especially workers who are exposed to noise, EN 17367 will benefit manufacturers and operators of stationary waste collection container.

Fuels and alternative fuels - The development of European Standards for methods of sampling and testing of fuels is important for ensuring that consumers and businesses are provided with safe and reliable fuels.

In support of the recently published EU Fit for 55 package under the European Green Deal, in 2022 CEN/TC 19 'Gaseous and liquid fuels, lubricants and related products of petroleum, synthetic and biological origin' intends to publish a set of renewed biodiesel fuel specifications standards. Four standards will be updated to improve quality of the product in the market and to allow countries to distribute more alternative fuel onto their market. In addition, the TC intends to finalise a special small engine petrol standard which harmonises the fuel supplied across Europe for lawn mowers, snow mobiles and mobile equipment. In 2022, the revision of EN 590 'Automotive fuels - Diesel - Requirements and test methods' will be completed and the revision of EN 15940 'Automotive fuels - Paraffinic diesel fuel from synthesis or hydrotreatment - Requirements and test methods' will continue.

CEN/TC 408 'Natural gas and biomethane for use in transport and biomethane for injection in the natural gas grid' will focus in 2022 mainly on the revision of EN 16723-1 for biomethane injected in the gas grid and EN 16723-2 for biomethane and natural gas for vehicles in 2022.

European standards on biogas production will help reducing production costs and will facilitate the trading of biomethane across borders. Therefore, in 2022 CEN/TC 408 will also adopt a series of ISO standard as ENs, first EN ISO 20675 on terms and definitions, EN ISO 22580 on flares for combustion of biogas and EN ISO 23590 on household biogas systems, and later EN ISO 24252 on non-domestic digestion plants and EN ISO 23898 on gasification plants.

Significant pre-normative work on the removal of the technical barriers to the use of biomethane in gas networks and gas appliances has been carried out in recent years. The results of this, together with the progress made in the last years in biomethane production and use, will be taken up during the revision of EN 16723-1 for biomethane injected in the gas grid and EN 16723-2 for biomethane and natural gas for vehicles.

Food and agriculture

European standardization in the field of food and agriculture contributes to improving the levels of food safety and protecting the health of consumers. CEN provides validated test methods that are used by the food industry and by the competent public authorities for official control purposes and by companies producing food and feed for internal checks.

Many of the standards adopted by CEN are developed in response to formal requests from the European Commission, and they play a valuable role in supporting the implementation of relevant European legislation.

The majority of European Standards in this field (around 70%) are identical to international standards, thanks to the close cooperation between CEN and ISO. Having test methods that are recognised internationally is especially important for food companies that want to sell their products in many different markets.

The increased awareness of the industry's ecological footprint has led to projects with a focus on circularity. For example, the establishment of a CEN/TC 466 'Circularity and recyclability of fishing gear and aquaculture equipment'. Amongst other things, this Committee will develop standards that will incorporate repairing and recycling, as well as environmental monitoring and data reporting, in support of Directive (EU) 2019/904 on the reduction of the impact of certain plastic products on the environment.

The standards for circular design of fishing gear should provide guidance to develop fishing gear of both higher quality and lower environmental impact that can be easily reused or recycled at the end of life, therefore providing organisations with the opportunity to act sustainably for healthier planet.

13 technical bodies responsible

CEN/TC 172	Pulp, paper and board
CEN/TC 194	Utensils in contact with food
CEN/TC 275	Food analysis - Horizontal methods
CEN/TC 302	Milk and milk products - Methods of sampling and analysis
CEN/TC 307	Oilseeds, vegetable and animal fats and oils and their by-products - Methods of sampling and analysis
CEN/TC 327	Animal feeding stuffs - Methods of sampling and analysis
CEN/TC 338	Cereal and cereal products
CEN/TC 415	Sustainable and Traceable Cocoa
CEN/TC 453	Dietary supplements and sports food free of doping substances
CEN/TC 454	Algae and algae products
CEN/TC 460	Food authenticity
CEN/TC 463	Microbiology of the food chain
CEN/TC 466	Circularity and recyclability of fishing gear and aquaculture equipment

Standards published by CEN and CENELEC

CEN and CENELEC portfolio of deliverables: 646 ENs + 87 other deliverables
Work Items currently in the Work Programme: 83 ENs + 37 other deliverables

Standardization requests from EC/EFTA

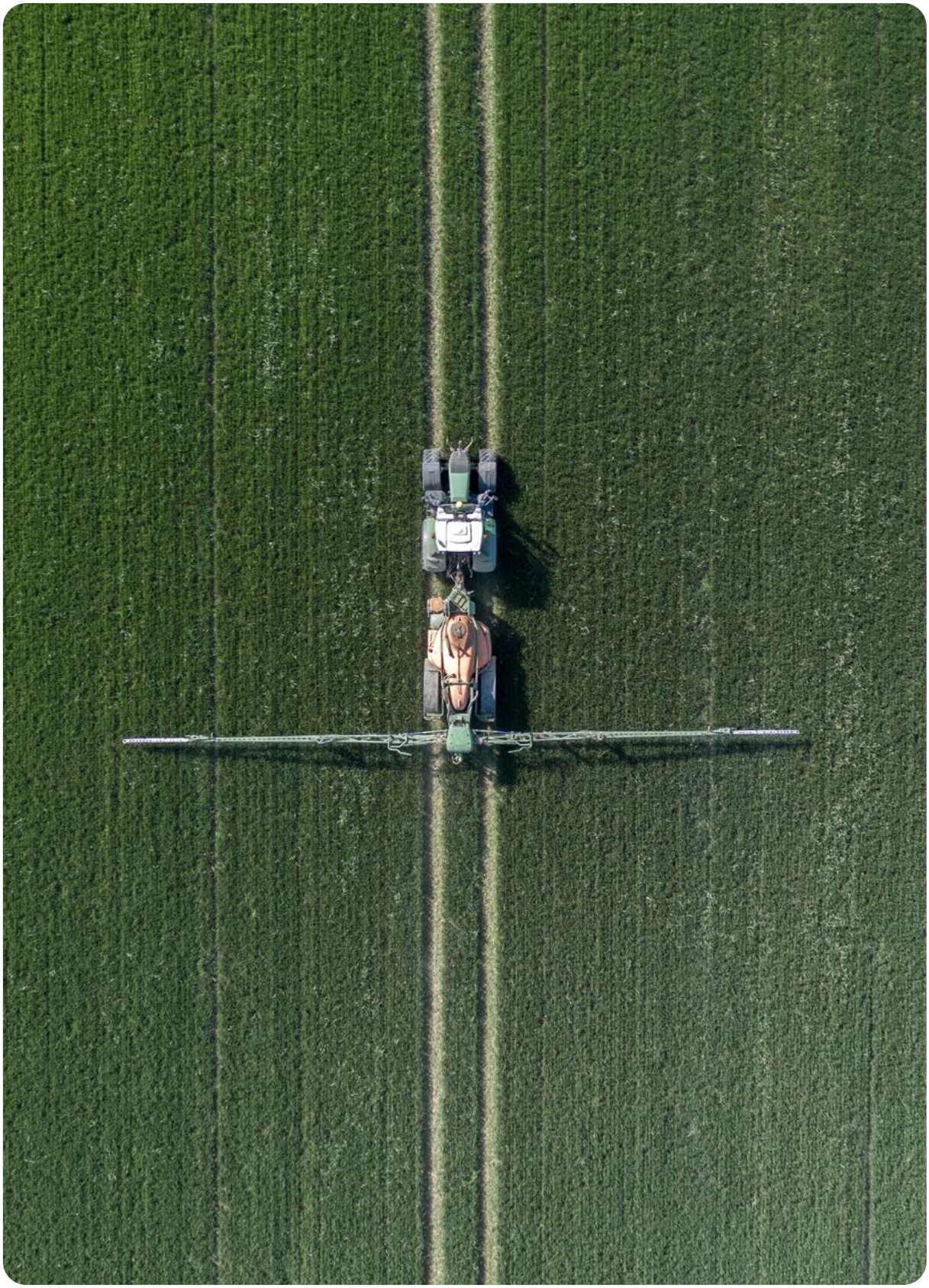
M/520 – Mycotoxins in the food
M/521 – Animal Nutrition – Part I
M/523 – Animal Nutrition – Part III
M/547 – Algae and algae-based products or intermediaries
M/574 – Circular Design of Fishing Gear

Further information

- Food and agriculture

ALGAE AND ALGAE PRODUCTS

CEN/TC 454 'Algae and algae products' is developing European Standards under Standardization Request M/547 on algae and algae-based products or intermediates. Ongoing interlaboratory studies for total lipid determination and quantification of chlorophyll will be finalised in 2022. Following the prolific development of standardization deliverables in 2021, the terms and definitions Standard, EN 17399 'Algae and algae products - Terms and definitions', will also need to be revised.



OTHER STANDARDS AND ACTIVITIES TO BE DEVELOPED IN 2022

Food analysis - The projects under CEN/TC 275 'Food analysis - Horizontal methods' serve both consumer protection and the European Commission and EU member countries' legislative needs by developing analytical methods for reference laboratories, and thus are of high importance and impact.

In 2022, the CEN/TC 275 working group (WG) 12 'Food allergens' will continue to work on a standard for minimum performance requirements for the quantitative measurement of food allergens (milk, egg, peanut, wheat, lupine, sesame, mustard, soy, celery, fish, crustaceans, etc.). In addition, the group is planning projects on the detection and quantification by real-time PCR for peanut and fish, as well as wheat and rye in cooked sausages.

WG 3 'Pesticides' will continue to work on its draft on the QuPPe-Method, for the determination of polar pesticides (e.g., glyphosate) in foodstuffs, for which laboratories have already been contacted for the validation studies. In addition, the group is discussing a new project on the QuEChERS method, for the determination of pesticide residues in foodstuffs with animal origin.

WG 13 'Process contaminants' expects to work on standards on 2,3-MCPD- and glycidyl esters, acrylamide in breakfast cereals and baby/infant food at low levels and furan/methylfurans (extension to baby food) and mineral oils (MOSH/MOAH) in (baby)food. Others, such as PFAS, may be considered as well.

The food chain - CEN/TC 463 'Microbiology of the food chain' will continue to develop standards in full cooperation with ISO (under the Vienna Agreement) and works in close contact with the European Commission Directorate-General for Health and Food Safety in order to establish priority areas for standardization.

Besides the continuous works to improve standards, studies to improve the pre-enrichment step for the detection of Listeria spp will be conducted, as well as works on the determination of Hepatitis E virus.

In 2022, the following standards will be finalised:

- EN ISO 23418 'Microbiology of the food chain — Whole genome sequencing for typing and genomic characterization of foodborne bacteria — General requirements and guidance';
- (revision of a TS) EN ISO 20836 'Microbiology of the food chain — Polymerase chain reaction (PCR) for the detection of microorganisms — Thermal performance testing of thermal cyclers';

In addition, a CEN enquiry will be launched for the below standard:

- revEN ISO 7218 'Microbiology of the food chain — General requirements and guidance for microbiological examinations, the main standard in the field, that will introduce the use of new technologies and will be applicable to all microorganisms.

Food authenticity - For methods against food fraud, CEN/TC 460 'Food authenticity' will develop standards against the following matrices:

- fish and fish products
- bivalves and products derived from bivalves
- meat and meat products from mammalia, poultry, horse and deer.

Following successful European interlaboratory tests, the TC will also develop standards on coffee and coffee products with the NMR-method and HPLC-methods.

Healthcare and health & safety

CEN and CENELEC develop European Standards setting quality, performance and safety requirements for a wide variety of medical devices and associated products, ranging from contact lenses through antiseptics to road ambulances and including health informatics. Standardization plays a fundamental role in this sector, as it ensures a high level of safety for patients and users of medical devices across borders.

The CEN and CENELEC Advisory Board for Healthcare Standards (ABHS) will continue to support CEN and CENELEC for the exploration of potential new areas for standardization in the medical field. In 2022, the ABHS will continue to focus on guiding relevant Technical Committees (TCs) in the transition to the new landscape under the Medical Devices Regulation (MDR) (2017/745/EU) and the In Vitro Medical Devices Regulation (IVDR) (2017/746/EU). ABHS aims to facilitate discussions regarding harmonisation issues between stakeholders to reduce ongoing concerns.

In addition, the standardization of Personal Protective Equipment (PPE), such as protective helmets, ropes used to prevent falls from a height or footwear resistant to chemicals, is handled by Technical Committees part of the CEN and CENELEC Sector Forum on Personal Protective Equipment. One of the Sector Forum's priorities for 2022 is to further pursue the alignment of the existing standards with the PPE Regulation (EU)2016/425 and coordinate the development and revision of standards supporting and listed in M/571 as regards the PPE Regulation (EU)2016/425.

This would ensure a smooth citation of those standards in the Official Journal of the European Union (OJEU), allowing manufacturers, notified bodies and other stakeholders using these standards to benefit from a presumption of conformity against the essential requirements the PPE Regulation.

Additionally, the PPE Sector Forum will follow up the recommendations from the 2021 Workshop "Sustainability for PPE – addressing

the challenges through standardization". These activities will focus on how better to include sustainability aspects into standardization, such as life cycle considerations and business models, use of resources, energy efficiencies, traceability, longevity, maintenance and repairability.

Furthermore, the CEN Sector Forum on Occupational Health and Safety (CEN/SABOHS) is a platform for the exchange of information on European standardization activities related to various kinds of hazards in the workplace and health-related issues. Therefore CEN/SABOHS plays an important role in European legislation. It is closely linked to the European Commission's DG Employment, Social Affairs and Inclusion, to EU-OSHA (European Agency for Safety and Health at Work), European employer and employee associations, national occupational health and safety representatives and to the Technical Committees (TCs) which develop product standards with occupational health and safety aspects.

In 2022, CEN/SABOHS will concentrate on better identifying standardization projects that concern the prevention of occupational risks, health and safety protection and the elimination of risk and accident factors. Particular attention will be given to the effects of cybersecurity, Artificial Intelligence on occupational health and safety and the standardization of services, qualification and management systems. A so-called European Early Information System developed by SABOHS' members will be published, so that the CEN/SABOHS members will be informed about relevant new projects as early as possible and so can give OH&S advice to the standardization committees at an early stage of standardization work.

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42 technical bodies responsible

CEN/CLC/JTC 16	CEN/CENELEC Joint Technical Committee on Active Implantable Medical Devices
CEN/CLC/JTC 3	Quality management and corresponding general aspects for medical devices
CEN/SS S02	Transfusion equipment
CEN/SS S03	Syringes
CEN/SS S99	Health, environment and medical equipment - Undetermined
CEN/TC 102	Sterilizers and associated equipment for processing of medical devices
CEN/TC 122	Ergonomics
CEN/TC 137	Assessment of workplace exposure to chemical and biological agents
CEN/TC 140	In vitro diagnostic medical devices
CEN/TC 158	Head protection
CEN/TC 159	Hearing protectors
CEN/TC 160	Protection against falls from height including working belts
CEN/TC 161	Foot and leg protectors
CEN/TC 162	Protective clothing including hand and arm protection and lifejackets
CEN/TC 170	Ophthalmic optics
CEN/TC 204	Sterilization of medical devices
CEN/TC 205	Non-active medical devices
CEN/TC 206	Biological and clinical evaluation of medical devices
CEN/TC 215	Respiratory and anaesthetic equipment
CEN/TC 216	Chemical disinfectants and antiseptics
CEN/TC 231	Mechanical vibration and shock
CEN/TC 239	Rescue systems
CEN/TC 251	Health informatics
CEN/TC 285	Non-active surgical implants
CEN/TC 293	Assistive products and accessibility
CEN/TC 305	Potentially explosive atmospheres - Explosion prevention and protection
CEN/TC 362	Healthcare services - Quality management systems
CEN/TC 392	Cosmetics
CEN/TC 403	Aesthetic surgery and aesthetic non-surgical medical services
CEN/TC 449	Quality of care for older people
CEN/TC 450	Patient involvement in person-centred care
CEN/TC 469	Animal health diagnostic analyses
CEN/TC 55	Dentistry
CEN/TC 79	Respiratory protective devices
CEN/TC 85	Eye protective equipment
CEN/WS 068	Quality criteria for health checks
CEN/WS 102	CEN Workshop on guidelines for introducing tele-medical and pervasive monitoring technologies balancing privacy protection against the need for oversight and care
CEN/WS EXOSK	Integration process of new technologies of physical assistance such as exoskeletons
CLC/SR 31G	Intrinsically-safe apparatus
CLC/TC 31	Electrical apparatus for potentially explosive atmospheres
CLC/TC 62	Electrical equipment in medical practice
CLC/TC 78	Equipment and tools for live working

Standards published by CEN and CENELEC

CEN and CENELEC portfolio of deliverables: 1703 ENs + 107 other deliverables
Work Items currently in the Work Programme: 392 ENs + 28 other deliverables

Standardization requests from EC/EFTA

M/553 - Advanced garments and ensembles of garments that provide protection against heat and flame
M/571 - Personal protective equipment
M/575 – Medical devices

Further information

- Occupational Health and Safety (CEN)
- Occupational Health and Safety (CENELEC)
- Personal Protective Equipment

NON-ACTIVE MEDICAL DEVICES

CEN/TC 205 'Non-active medical devices' within its WG 14 ' Surgical clothing and drapes, and medical face masks' will continue to develop a standard on 'Respiratory infection prevention devices for self- and third party protection – Requirements for different performance classes and test methods' (WI 00205368). The standard will specify appropriate devices to minimise the transmission of infectious airborne pathogens (such as bacteria, fungi, spores, viruses). It is intended both as a medical device for use in healthcare settings and as personal protective equipment for respiratory protection. The standard will provide a self and third-party protection. It will apply equally to use in professional as well as everyday settings and is intended to cover all age groups.

ERGONOMICS

CEN/TC 122 'Ergonomics' will continue working on a project, funded by the European Commission, on anthropometric and strength data of children. 2022 will mainly be dedicated to conducting the related surveys in at least two European countries which had to be postponed due to COVID-19 restrictions. The resulting Technical Report (TR) on anthropometric and strength data of children in Europe will be complemented by another TR with guidelines on how to apply such data. Anthropometric and strength data are not only a crucial basis for health and safety requirements in standards, but also very important for the design of ergonomic and safe products (including for instance facial masks) and workplaces.

OTHER STANDARDS AND ACTIVITIES TO BE DEVELOPED IN 2022

Personal Protective Equipment - CEN/TC 159 'Hearing protectors' is currently amending some of its standards of the EN 352 series on safety requirements of hearing protectors. These amendments will include requirements for new technologies used in hearing protectors, such as analogue frequency modulated two-way radio input and DAB/DAB+ signal. It also anticipates to develop a standard for earplugs with active noise reduction. New test methods for those technologies are drafted in an amendment of EN 13819-3 'Hearing protectors - Testing - Part 3: Supplementary acoustic test methods'.

Under the responsibility of CEN/TC 161 'Foot and leg protectors', the following publication in support of the Personal Protective Equipment Regulation (2016/425/EU) are planned for 2022:

- EN ISO 20344 'Personal protective equipment - Test methods for footwear'
- EN ISO 20345 'Personal protective equipment - Safety footwear'
- EN ISO 20346 'Personal protective equipment - Protective footwear
- EN ISO 20347 ' Personal protective equipment - Occupational footwear'

The Technical Committee will also start the revision of EN ISO 17249 'Safety footwear with resistance to chainsaw cutting' and EN 15090 'Footwear for firefighters'.

CEN/TC 158 'Head protection' will issue new standards in support of the PPE Regulation 2016/425/EU. CEN/TC 158 expects to make a breakthrough in the ongoing WG 11 'Headforms and test methods' project developing a new head form and test method for measuring rotational impact energy.

CEN/TC 158 will also continue the revision of EN 1384 'Helmets for equestrian activities'. The committee will also work on head protections for cyclists and similar activities to include requirements for oblique impact, but it will also work on industrial protective helmets. Finally, CEN/TC 158 is also working under ISO lead, finalising the EN ISO 10256 series on protective equipment for use in ice hockey parts where part 2 to part 4 are candidates for harmonisation.

Other continuing standardization activities within CEN/TC 158 take place in WG 15 'Helmets for S-EPAC users', which is developing a technical specification for S-EPAC users (electric bikes).

CEN/TC 162 'Protective clothing including hand and arm protection and lifejackets' is working closely together with ISO/TC 94/SC 13 'protective clothing' to develop EN ISO standards in the PPE sector. This includes projects in the area:

- Protection against chemicals and infective agents which would fall under CEN/TC 162/WG 3 'Protective clothing against chemicals, infective agents and radioactive contamination',
- Immersion suits under the responsibility of CEN/TC 162/WG 6 'Lifejackets'
- Protective gloves under the responsivity of CEN/TC 162/WG 8 'Protective gloves'.

On knee protectors, the EN 14404 'Personal protective equipment - Knee protectors for work in the kneeling position' series (6 parts) will be published in 2022.

The Committee will continue to work on the projects started in 2020, including protective gloves for hairdressers, which will be now developed as EN ISO 374-6 'Protective gloves against dangerous chemicals and micro-organisms Part 6: Protective gloves for hairdressers'.

Furthermore, EN 1621 'Motorcyclists' protective clothing against mechanical impact' series on motorcyclists' protection will be revised.

CEN/TC 122 'Ergonomics' will work on the revision of EN 13861:2011 'Safety of machinery - Guidance for the application of ergonomics standards in the design of machinery'. The standard supports risk assessment according to ergonomic requirements provided in EN ISO 12100 'Safety of machinery – General principles for design – Risk assessment and risk reduction' for constructing machines. During the revision the responsible working group CEN/TC 122/WG 2 'Ergonomic design principles' will also assess to which extent parts of ISO/TR 22100-3 'Safety of machinery – Relationship with ISO 12100 - Part 3: Implementation of ergonomic principles in safety standards' could be integrated, as this technical report covers a similar topic.

Another working group of the same CEN/TC 122, WG 4 'Biomechanics', in 2022 will continue the close cooperation with ISO/TC 159/SC3/WG4 'Human physical strength: manual handling and force limits' in the field of Biomechanics and Human Physical Performance. Preventing 'Physical over- and under load' are still important factors to be considered by designers of products, workplaces and other materials and surroundings, in order to be more inclusive of people with disabilities.

Furthermore, CEN/TC 122/WG 14 'Ergonomics of PPE systems' intends to finalise the work on EN 17558 'Ergonomics - Ergonomics of PPE ensembles'. It will enable PPE ensembles, such as those worn by police, firefighters and other emergency services or industrial users, to be evaluated and objectively assessed for ergonomic performance as a whole, rather than in their individual component parts. This new standard will provide a valuable tool to help PPE manufacturers and purchasers to make informed and objective decisions in designing and selecting PPE items and creating awareness of issues in the interactions among them and fulfil the European PPE Regulation (2016/425/EU).

Smart Garment - CEN/TC 162 'Protective clothing including hand and arm protection and lifejackets', in cooperation with other Technical Committees in the PPE sector, will be focusing on the finalisation of EN 17673 'Protective clothing - Protection against heat and flame - Requirements and test methods for garments

with integrated smart textiles and non-textile elements' developed in support of the standardization request on 'Smart garments' (M/553).

Healthcare - A primary objective for CEN/TC 215 'Respiratory and anaesthetic equipment' in the next 12 months is to develop harmonised editions of standards for respiratory equipment in support of the Medical Devices Regulation (2017/745/EU) and its corresponding Standardization Request M/575.

A second objective is the development, in collaboration with ISO, of new standards to address the safety and effectiveness of medical equipment,including equipment for which no standards yet exist. Examples include:

- EN ISO 80601-2-90, a standard for equipment for high flow oxygen therapy which has been instrumental in the management of hospitalized covid-19 patients in order to prevent the need for mechanical ventilation;
- EN ISO 23368 'Anaesthetic and respiratory equipment - Low flow nasal cannulae for oxygen therapy (ISO/DIS 23368:2019)';
- EN ISO 23371 ' Anaesthetic and respiratory equipment - Cuff pressure indication devices (ISO/DIS 23371:2019)';
- EN ISO 23372 'Respiratory therapy equipment: Air entrainment devices (ISO/DIS 23372:2019)'.

Finally, new editions will be created for several existing standards to address changing requirements with developments in the healthcare technology field. Many of these are listed in the MDR Standardization Request M/575:

- EN ISO 4135 'Anaesthetic and respiratory equipment – Vocabulary' is being updated for the first time since 2001, and will help ensure consistent use of terminology across all CEN/TC215 and ISO/TC121 'Anaesthetic and respiratory equipment' standards;
- EN ISO 80601-2-13 'Particular requirements for basic safety and essential performance of an anaesthetic workstation' is one of more than a dozen standards for medical electrical equipment used in respiratory therapy that are being updated to align with the 2020 amendments to EN 60601-1 and its collaterals, and at the same time to harmonise with regards to the Medical Devices Regulation;
- The EN ISO 18562-series, a family of standards for evaluation of biocompatibility of devices that convey breathing gas to a patient, is being revised to improve patient safety, as are standards for suction equipment, medical gas pipelines, patient airway devices and resuscitators.

CEN/TC 205 'Non-active medical devices' will focus its work on the Standardization Request for standardization activities under the MDR (EU) 2017/745.

In that framework, the entire 'Medical Gloves' standard series (EN 455) will be updated accordingly. In addition, the EN 13795 series (2 parts) on 'Surgical clothing and drapes' and the EN 14683 'medical face masks' will need a revision. Affected from the new MDR are as well the EN ISO standard EN ISO 4074 on 'Natural rubber latex male condoms — Requirements and test methods' which are being revised under ISO lead in ISO/TC 157 'Non-systemic contraceptives and STI barrier prophylactics'.

Within CEN/TC 205 WG 15 'Wound dressings' the committee will be start the development of a standard on 'Antimicrobial wound dressings – Requirements and test methods' (WI 00205320).

In 2022, CLC/TC 62 'Electrical equipment in medical practice' foresees improving and redefining the relationship with their parallel parent IEC committee (IEC/TC 62 ' Electrical equipment in medical practice' and its Sub Committees) from which almost all their work originates.

In 2022, CEN/CLC/JTC 3 'Quality management and corresponding general aspects for medical devices' will continue to work closely with its counterpart ISO/TC 210 'Quality management and corresponding general aspects for medical devices', developing the most widely used horizontal standards for medical devices in the world.

JTC 3 also ensures that its standards are in conformity with the requirements in the European regulatory system and is working to fulfill the requirements for harmonisation. After having successfully completed this procedure for EN-ISO 13485 (Quality Management), EN-ISO 14971 (Risk Management) and EN-ISO 15223-1 (Symbols) in 2021, the Committee will restart the harmonisation process for the standard EN-ISO 20417 'Medical devices – Information to be provided by the manufacturer' in 2022, so this important standard can also be harmonised.

In 2022, CEN/TC 251 'Health informatics' will continue to participate in the H2020 project 'X-health' aiming to develop the HER Exchange Format which can possibly lead to a European standard. The Committee's main contributions will be based on EN 17269 'Health informatics – The International Patient Summary' which has been replaced by EN-ISO 27269.

In addition, the committee will continue to contribute to the H2020 project 'UNICOM', aiming to support the implementation of the Identification of Medicinal products (IDMP) standards. CEN/TC 251's main contributions will consist of providing a bridge for feedback for the (future) revision of this set of standards. See further below for the update on new revision activities. After the publication of CEN-ISO/TS 82304-2 'Health informatics – Quality & reliability criteria for developers of health and well-being apps' (in August 2021), the committee supports further developments and the implementation

of the Technical Specification by contributing to the development of a possible European certification scheme.

Ongoing standardization activities that will be further developed in 2022 are:

- prCEN ISO/TS 23261 'Requirements for accessing digital medicinal products information by using the existing data carrier';
- prCEN-ISO 17251 'Health informatics – Business requirements for a syntax to exchange structured dose information for medicinal products (revision)';
- prCEN-ISO 19844 'Health informatics - Identification of medicinal products (IDMP) - Implementation guidelines for ISO 11238 for data elements and structures for the unique identification and exchange of regulated information on substances';
- EN-ISO 11239 'Health informatics - Identification of medicinal products - Data elements and structures for the unique identification and exchange of regulated information on pharmaceutical dose forms, units of presentation, routes of administration and packaging';
- CEN-ISO/TS 20440 'Health informatics - Identification of medicinal products - Implementation guide for ISO 11239 data elements and structures for the unique identification and exchange of regulated information on pharmaceutical dose forms, units of presentation, routes of administration and packaging';
- Ongoing revision activities for the EN-ISO (IEEE) 11073-series.

CEN/TC 305 'Potentially explosive atmospheres - Explosion prevention and protection' was established with the purpose to elaborate standards on explosion prevention and protection for any application in explosive atmospheres with the exception of explosions expected from explosives or unstable substances. The standards developed by CEN/

TC 305 provide information and guidance for explosion prevention and protection to manufacturers, users and authorities around Europe.

The general objective in standardizing requirements for equipment and protective systems for use in potentially explosive atmospheres is the improvement of health and safety of users at workplaces and elsewhere through safe products.

In 2022, CEN/TC 305 will publish a standard that contains requirements for design and testing of hand-held, portable and transportable vacuum cleaners and dust collectors for use in potentially explosive atmospheres (EN 17348). EN 17348 is foreseen to be harmonised and offered for citation in the Official Journal of the European Union under the ATEX Directive (2014/34/EU) (Directive) and 2006/42/EC (Machinery Directive).

The group will also finalise a standard regarding the determination of explosion limits of gases and vapours at elevated pressures, elevated temperatures or with oxidizers other than air (EN 17624). EN 17624 is foreseen to be harmonised and offered for citation in the Official Journal of the European Union under the Machinery Directive (2006/42/EC).

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Household appliances and HVAC

Household appliances and HVAC (Heating, Ventilation and Air Conditioning) is one of the areas where the use and importance of standards is evident in everyday life. The standardization work in this field is very broad and covers a wide range of activities. From kitchen toasters to washing machines and central heating boilers, more than 20 CEN and CENELEC Technical Committees are developing European Standards that ensure a high level of performance and safety for a wide variety of everyday products, taking into account the diversity of their users (such as professionals, youngsters, elderly people, or people with disabilities, to name only a few).

25 technical bodies responsible

CEN/CLC/JTC 17	Gas Appliances with Combined Heat and Power
CEN/SS H99	Products for household and leisure use - Undetermined
CEN/TC 106	Large kitchen appliances using gaseous fuels
CEN/TC 109	Central heating boilers using gaseous fuels
CEN/TC 110	Heat exchangers
CEN/TC 113	Heat pumps and air conditioning units
CEN/TC 130	Space heating and/or cooling appliances without integral thermal sources
CEN/TC 131	Gas burners using fans
CEN/TC 171	Heat cost allocation
CEN/TC 180	Decentralized gas heating
CEN/TC 181	Appliances and leisure vehicle installations using liquefied petroleum gas and appliances using natural gas for outdoor use
CEN/TC 195	Cleaning equipment for air and other gases
CEN/TC 238	Test gases, test pressures, appliance categories and gas appliance types
CEN/TC 295	Residential solid fuel burning appliances
CEN/TC 299	Gas-fired sorption appliances, indirect fired sorption appliances, gas-fired endothermic engine heat pumps and domestic gas-fired washing and drying appliances.
CEN/TC 44	Commercial and Professional Refrigerating Appliances and Systems, Performance and Energy Consumption
CEN/TC 46	Fireplaces for liquid fuels
CEN/TC 47	Atomizing oil burners and their components - Function - Safety - Testing
CEN/TC 48	Domestic gas-fired water heaters
CEN/TC 49	Gas cooking appliances
CEN/TC 57	Central heating boilers
CEN/TC 58	Safety and control devices for burners and appliances burning gaseous or liquid fuels
CEN/TC 62	Independent gas-fired space heaters
CLC/TC 59X	Performance of household and similar electrical appliances
CLC/TC 61	Safety of household and similar electrical appliances

Standards published by CEN and CENELEC

CEN and CENELEC portfolio of deliverables: 762 ENs + 12 other deliverables
Work Items currently in the Work Programme: 247 ENs + 5 other deliverables

Standardization requests from EC/EFTA

M/BC/CEN/89/6 – Gas appliances
M/XXX (Anticipated) – Gas appliances Regulation
M/500 – Fans
M/534 – Water heaters
M/535 – Space heaters
M/537 – Ventilation units
M/560 – Ecodesign requirements for air heating products, cooling products, high temperature process chillers and fan coils
M/566 – Ecodesign and energy labelling for household dishwashers, household washing machines and household washer-dryers
M/XXX (Anticipated) – Ecodesign and energy labelling for refrigerating appliances

M/XXX (Anticipated) - Ecodesign and energy labelling requirements for refrigerating appliances with a direct sales function
M/XXX (Anticipated) - Ecodesign requirements for air-to-air air conditioners, air-to-air heat pumps and comfort fans

Further information

- Household Appliances and HVAC (CEN)
- Household Appliances and HVAC (CENELEC)
- Ecodesign, energy labelling and material efficiency

SAFETY OF ELECTRICAL HOUSEHOLD APPLIANCES

The standardization work on the safety of household appliances is under the responsibility of CLC/TC 61 'Safety of household and similar electrical appliances'. This Technical Committee develops, in close cooperation with its international counterpart IEC/TC 61, standards containing safety requirements for more than 100 electrical appliances intended primarily for household use, but also for appliances for commercial use, such as those used in professional kitchens. European Standards on the safety of household and similar electrical appliances (part of the EN 60335 series) are continuously adapted in order to align with the latest technological changes. The majority of these standards are candidates for harmonisation in the support of European legislation.

In 2022, CLC/TC 61 will continue with the European adoption of the latest IEC standards developed by IEC/TC 61. In this regard, one important standard being adopted in 2022 is the revision of part 1 of the EN 60335 series 'Household and similar electrical appliances - Safety - Part 1: General requirements'.

Additionally, CLC/TC 61 will continue to focus on the alignment of their standards to European legislation (more precisely to the Low Voltage Directive – 2014/35/EU and to the Machinery Directive 2006/42/EC).

ECODESIGN OF HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES

CLC/TC 59X 'Performance of household and similar electrical appliances' prepares European Standards on methods of measurement for characteristics important to determine the performance of electrical appliances for household and commercial use that are of interest for the user.

Most of the products covered by CLC/TC 59X fall under the scope of several Ecodesign implementing regulations and energy labelling regulations adopted by the European Commission. In this context, during 2022, CLC/TC 59X expects to publish amendments to EN IEC 63252:2020, a standard that defines methods for the measurement of energy consumption of vending machines, whether or not fitted with refrigerating appliances in view of the upcoming standardization request.

CLC/TC 59X expects also to publish Technical Report that intends to assess the applicability of the EN 4555X series regarding material efficiency aspects in view to applying them to household and similar electrical appliances. In addition, the document will highlight where further work on metrics and measurement methodologies is necessary or may be needed.

In addition, the experts will progress with the development of EN 50723, that intends to assess the compatibility of induction hobs and cookware not considering only the performance of the appliance, but a method for looking at system level.

The Technical Committee also plans to conclude its work on the EN 50631 series on household appliances network and grid connectivity, defining for example data models for interoperable connected household appliances.

In 2022, CEN/TC 44 'Commercial and Professional Refrigerating Appliances and Systems, Performance and Energy Consumption' expects, in parallel with ISO/TC 86/SC 7 'Testing and rating of commercial refrigerated display cabinets', to finalise the revision of EN ISO 23953-1 and 2 'Refrigerated display cabinets'.

OTHER STANDARDS AND ACTIVITIES TO BE DEVELOPED IN 2022

Heating, cooling, ventilation and air conditioning (HVAC) - The HVAC sector includes applications ranging from appliances burning gas or oil and solid fuels through refrigeration, heat pumps and heat exchanger for ventilation. In this sector, CEN and CENELEC are developing harmonised standards that provide dedicated methods for measuring the energy performance of various energy-related products, such as heating and cooling appliances or ventilation units, against the compulsory values and thresholds laid down in the Ecodesign Regulations adopted by the European Commission for energy-related products.

These harmonised standards are elaborated on the basis of European Commission requests to develop European standard(s) that provide solutions for compliance with legal provisions.

In 2022, CEN/TC 113 'Heat pumps and air conditioning units' expects to conclude the revision of the EN 14511 series regarding 'Air conditioners, liquid chilling packages and heat pumps for space heating and cooling and process chillers, with electrically driven compressors'.

CEN/TC 295 'Residential solid fuel burning appliances' plans to publish the EN 16510 series regarding residential solid fuel burning appliances under the framework M/577 as regards space heating appliances in support of Commission Regulation (EU) 305/2011.

CEN/TC 107 'Prefabricated district heating and district cooling pipe system' seeks to publish several standards of the EN 15632 series on district heating pipes.

CEN/TC 228 'Heating systems and water based cooling systems in buildings' will continue working on the revision of two standards of the EN 15316 'Energy performance of buildings – Method for calculation of system energy requirements and system efficiency' series.

Safety of household gas appliances - CEN/TC 49 develops and maintains European standards relating to the safety of household gas cooking appliances keeping pace with modern technology. These standards guarantee a safety level and performance characteristics of a product for its safe and environmentally friendly use by a consumer. CEN/TC 49 standards fulfil the needs of consumers, manufacturers as well as certification bodies. In 2022, the group will develop several standards of the EN 30 series, specifying the construction and performance characteristics as well as the requirements and test methods for the safety and marking of freestanding and built–in domestic cooking appliances burning combustible gas.

CEN/TC 106 'Large kitchen appliances using gaseous fuels' will finalise the EN 203 series dealing with gas-heated catering equipment. These ENs specify the general requirements and the operating characteristics related to aspects such as safety, rational use of energy, marking.

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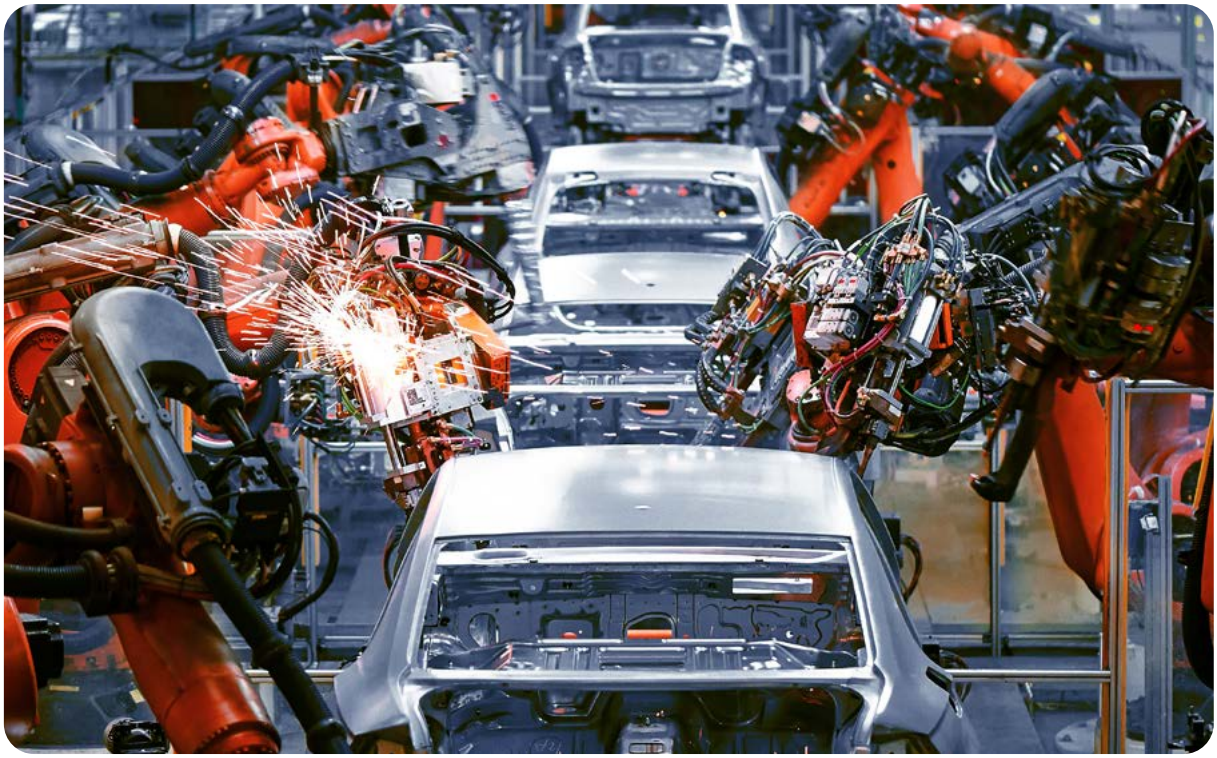
Mechanical and machinery



CEN and CENELEC's standardization work for the mechanical and machinery sector brings together about fifty technical bodies dealing with different types of machinery for use in agriculture, industrial manufacturing, mining, construction and by consumers. The sector also includes eleven technical bodies dealing with laboratory, optical and precision equipment (excluding glasses), two technical bodies developing standards on welding and a further twelve that handle the standardization work on tanks and pressure equipment. These Technical Committees (TCs) are mainly composed of industry representatives (manufacturers), notified bodies, national health and safety institutes and representatives from the market surveillance organisations from interested Member States.

A considerable proportion of the deliverables produced are harmonised standards that give users the presumption of conformity with the EU Directives on Machinery (2006/42/EC), Lifts (2014/33/EU), Pressure equipment (2014/68/EU), Simple pressure vessels (2014/29/EU) and Measuring instruments (2014/32/EU).

Many CEN and CENELEC standards for machinery, pressure equipment and measuring instruments are identical to international standards: this is an important characteristic, since the markets for these products tend to be global. The mechanical and machinery sector is therefore a good example of bringing together European requirements with an internationally accepted approach.

Standards keep the pace of technological development through the involvement of experts from different backgrounds. The aim of the new CEN-CENELEC-ETSI Coordination Group on Smart Manufacturing is to advise on the European standardization activities related to smart manufacturing in cooperation with stakeholder groups outside CEN and CENELEC.

Finally, the CEN-CENELEC Sector Forum on Machinery facilitates the exchange of information between different stakeholders, coordinates between them and identifies standardization needs, in particular in relation to harmonised standards under the Machinery Directive.

82 technical bodies responsible

CEN/CLC/JTC 18	Weighing instruments
CEN/CLC/WS EFPFInterOp	European Connected Factory Platform for Agile Manufacturing Interoperability
CEN/CLC/WS Monsoon	Predictive management of data intensive industrial processes
CEN/CLC/WS ZDMterm	Zero Defects in Digital Manufacturing Terminology
CEN/SS F05	Measuring Instruments
CEN/SS H10	Sewing machines
CEN/SS I03	Limits and fits
CEN/SS I09	Small tools
CEN/TC 10	Lifts, escalators and moving walks
CEN/TC 114	Safety of machinery
CEN/TC 12	Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries
CEN/TC 121	Welding and allied processes
CEN/TC 123	Lasers and photonics
CEN/TC 142	Woodworking machines - Safety
CEN/TC 143	Machine tools - Safety
CEN/TC 144	Tractors and machinery for agriculture and forestry
CEN/TC 145	Plastics and rubber machines
CEN/TC 146	Packaging machines - Safety
CEN/TC 147	Cranes - Safety
CEN/TC 148	Continuous handling equipment and systems - Safety
CEN/TC 149	Power-operated warehouse equipment
CEN/TC 150	Industrial Trucks - Safety
CEN/TC 151	Construction equipment and building material machines - Safety
CEN/TC 152	Fairground and amusement park machinery and structures - Safety
CEN/TC 153	Machinery intended for use with foodstuffs and feed
CEN/TC 168	Chains, ropes, webbing, slings and accessories - Safety
CEN/TC 176	Thermal energy meters
CEN/TC 182	Refrigerating systems, safety and environmental requirements
CEN/TC 186	Industrial thermoprocessing - Safety
CEN/TC 188	Conveyor belts
CEN/TC 190	Foundry technology
CEN/TC 196	Mining machinery and equipment - Safety
CEN/TC 197	Pumps
CEN/TC 198	Printing and paper machinery - Safety
CEN/TC 202	Foundry machinery
CEN/TC 210	GRP tanks and vessels
CEN/TC 211	Acoustics
CEN/TC 213	Cartridge operated hand-held tools - Safety
CEN/TC 214	Textile machinery and accessories
CEN/TC 23	Transportable gas cylinders
CEN/TC 232	Compressors, vacuum pumps and their systems
CEN/TC 236	Non industrial manually operated shut-off valves for gas and particular combinations valves-other products
CEN/TC 237	Gas meters
CEN/TC 240	Thermal spraying and thermally sprayed coatings
CEN/TC 255	Hand-held, non-electric power tools - Safety
CEN/TC 265	Metallic tanks for the storage of liquids
CEN/TC 267	Industrial piping and pipelines
CEN/TC 268	Cryogenic vessels and specific hydrogen technologies applications

CEN/TC 269	Shell and water-tube boilers
CEN/TC 270	Internal combustion engines
CEN/TC 271	Surface treatment equipment - Safety
CEN/TC 286	Liquefied petroleum gas equipment and accessories
CEN/TC 310	Advanced automation technologies and their applications
CEN/TC 313	Centrifuges
CEN/TC 318	Hydrometry
CEN/TC 322	Equipments for making and shaping of metals - Safety requirements
CEN/TC 332	Laboratory equipment
CEN/TC 334	Irrigation techniques
CEN/TC 344	Steel static storage systems
CEN/TC 393	Equipment for storage tanks and for filling stations
CEN/TC 397	Baling presses - Safety requirements
CEN/TC 399	Gas Turbines applications - Safety
CEN/TC 406	Mechanical products - Ecodesign methodology
CEN/TC 423	Means of measuring and/or recording temperature in the cold chain
CEN/TC 429	Food hygiene - Commercial warewashing machines - Hygiene requirements and testing
CEN/TC 433	Entertainment Technology - Machinery, equipment and installations
CEN/TC 438	Additive Manufacturing
CEN/TC 458	Industrial rotating mixing systems
CEN/TC 54	Unfired pressure vessels
CEN/TC 69	Industrial valves
CEN/TC 74	Flanges and their joints
CEN/TC 92	Water meters
CEN/TC 98	Lifting platforms
CEN/WS 093	Industrial Symbiosis
CEN/WS 097	Articulated industrial robots - Elastostatic compliance calibration
CEN/WS NATEDA	Nanoindentation Test Data
CLC/BTTF 128-2	Erection and operation of electrical test equipment
CLC/TC 116	Safety and environmental aspects of motor-operated electric tools
CLC/TC 2	Rotating machinery
CLC/TC 26	Electric welding
CLC/TC 44X	Safety of machinery: electrotechnical aspects
CLC/TC 66X	Safety of measuring, control, and laboratory equipment

Standards published by CEN and CENELEC

CEN and CENELEC portfolio of deliverables: 2318 ENs + 104 other deliverables
Work Items currently in the Work Programme: 563 ENs + 21 other deliverables

Standardization requests from EC/EFTA

M/071 – Pressure equipment
M/396 – Machinery
M/435 – Inspection of pesticide application equipment in use
M/471 – Machinery for pesticide application
M/541 - Measuring instruments
M/549 - Lifts

Further information

- Mechanical and machines (CEN)
- Mechanical and machines (CENELEC)

SAFETY OF MACHINERY

CEN/TC 114 'Safety of machinery' produces standards and other documents on general principles for the safety of machinery, including terminology and methodology. Close to 100% of the standards published by CEN/TC 114 in this sector are developed in cooperation with ISO/TC 199, and most of them support the Machinery Directive (2006/42/EC).

In 2022, CEN/TC 114 will adopt ISO/TR 22100-5 'Safety of machinery — Relationship with ISO 12100 — Part 5: Implications of artificial intelligence machine learning' as CEN ISO/TR 22100-5.

This document addresses how artificial intelligence machine learning can impact the safety of machinery and machinery systems. It describes how hazards associated with machine learning applications in machinery or machinery systems, and designed to act within specific limits, can be considered in the risk assessment process.

This document will be useful for the industry, commerce and SMEs as, based on concrete examples, it will prove that risks introduced by artificial intelligence in machinery applications can be covered by the risk assessment/risk reduction methodology as prescribed in EN ISO 12100 'Safety of machinery - General principles for design - Risk assessment and risk reduction (ISO 12100:2010)', where AI risks are addressed according to the intended use and limits specified by the machine manufacturer.

CONSTRUCTION EQUIPMENT AND BUILDING MATERIAL MACHINES

CEN/TC 151 'Construction equipment and building material machines – Safety' develops standards and other documents in the field of safety of machines and equipment used on construction sites, for winter service and highway maintenance, as well as for the production and processing of mineral building materials. Most of the deliverables produced by this TC support Machinery Directive (2006/42/EC).

In 2022, CEN/TC 151 will publish EN ISO 20500 series 'Mobile Road construction machinery'. This will be the first EN ISO standard series on safety of mobile road construction machines and will replace the EN 500 series on road construction machines. This series contains the latest safety updates on important subjects such as visibility, guarding, and functional safety.

Also, in 2022, the revision of EN 474 series concerning 'Earth-moving machinery' will be published. This revision will bring increased safety requirements on visibility and quick couplers. New part 13 on rollers will partly replace EN 500-4:2011.

OTHER STANDARDS AND ACTIVITIES TO BE DEVELOPED IN 2022

Mechanical engineering – general - CEN/TC 211 'Acoustics' produces standards and other documents in the field of acoustics, including methods of measuring acoustical phenomena, the generation, transmission, and reception of sound. In 2022, this TC will revise EN ISO 3744. This is an important standard used by manufactures and test laboratories to determine sound power levels of machinery and equipment. It is referenced by hundreds of machinery specific test codes (Type C standards) to determine product sound power levels. The goal of the current revision is to simplify ISO 3744 to make it easier to use and less complex by removing items that are seldom used and adding them to other standards.

Laboratory, optical and precision equipment (excl. glasses) - CEN/TC 123 'Lasers and photonics' planned the following activities for 2022:

- Finalisation and publication of the standards EN ISO 13696 on 'Test methods for radiation scattered by optical components' and EN ISO 12005 'Test methods for laser beam parameters – Polarization', which are both currently under revision under the Vienna Agreement jointly with ISO/TC 172/SC 9 'Laser and electro-optical components' providing research facilities and manufacturers with clarified terms and definitions as well as the newest state of the art on these methods.

- Anticipation of the start of the revision of EN ISO 11553-2 on laser processing machines, which is currently being prepared at international level by ISO/TC 172/SC 9 and IEC/TC 76. Its content is being updated with the objective of achieving harmonisation under the Machinery Directive in order to aid manufacturers and users of these machines.

CEN/TC 318 'Hydrometry' will finalise the CEN/TR 'Optimal design of hydrometric networks'. The main benefit of this project will be that a proposed hydrometric network will be designed and operated in a cost-effective manner. It will also assist with the planning for and management of floods and the protection of the aquatic environment. The main beneficiaries of this document will be water resources management, including the management of extremes including floods and droughts, and hydrological research agencies that monitor and evaluate the impact of climate change.

CEN/TC 332 'Laboratory equipment' will finalise EN 16589-1 'Laboratory local exhaust devices — Part 1: Articulated extraction arm'. This is an important standard because articulated extraction arms can be found in most laboratories. The new standard will help to design and use them in a targeted and appropriate manner, thus increasing safety in the laboratory.

Measuring Instruments and non-automatic weighing instruments - The activities on measuring instruments, laboratory and lasers equipment are partially undertaken to support Directive 2014/32/EU on Measuring Instruments (MID) and the non-automatic weighing instruments (NAWI) Directive 2014/31/EU.

CEN/TC 176 'Thermal energy meters' expects to finish the ongoing full revision of the EN 1434-series. The benefit will be a more up-to-date standard series on requirements for thermal energy meters.

CEN/TC 237 'Gas meters' will publish EN 12261 'Gas meters - Turbine gas meters'. This standard specifies the measuring conditions, requirements and tests for the construction, performance and safety of class 1,0 axial and radial turbine gas meters with mechanical indicating devices.

CLC/TC 13 'Electrical energy measurement and control' expects to publish EN 50470-3 'Electricity metering equipment (AC) - Part 3: Particular requirements - Static meters for active energy (class indexes A, B and C)'.

Agriculture machinery & motor-operated electric tools - The projects of CEN/TC 144 'Tractors and machinery for agriculture and forestry' cover machine safety and operator protection, considering the protection of the environment and technological innovations. These documents play an important part in decreasing the risk of accidents for farmers and foresters and in reducing the use of pesticides. The main target of these standards is not only farmers, foresters and manufacturers, but also public authorities in charge of prevention at work and inspection of machines and research and testing organizations.

In 2022, CEN/TC 144 will continue to work on the brand-new harmonised standard in support of the Machinery Directive (2006/42/EC) on 'Equipment for vine cultivation and wine making — Safety — Must and grape harvest pumps'. The document will address the safety of pumps which are intended for the transfer of fresh, de-stemmed grapes and pomace. The draft will develop technical solutions to reduce frequency and severity of accidents by defining specific design and construction requirements for this equipment and how to verify them. This future standard intends also to cover ergonomics and the instructions for users.

CEN/TC 144 will also focus on standards developed to support the requirements from the EU legislation concerning the protection of the environment in particular for crop protection equipment.

In this context, CEN/TC 144 will develop further two new projects in support of the requirements of Machinery Directive (2006/42/

EC) concerning pesticide application: EN 17744 'Agricultural and forestry machinery - Environmental requirements for dusters' and EN 17745 'Agricultural and forestry machinery - Environmental requirements for granule applicator of Plant Protection Products'.

Moreover, CEN/TC 144 stakeholders in cooperation with ISO will continue revising EN ISO 16122 series on 'Inspection of sprayers in use' in support of the Sustainable Use of Pesticides Directive (2009/128/EC) to consider the new developments and the experience collected from farmers.

CLC/TC 116 'Safety and environmental aspects of motor-operated electric tools' in 2022 will be working on the European adaption and publication of further parts of EN IEC 62841 'electric motor-operated hand-held tools, transportable tools and lawn and garden machinery – Safety'.

The new standards will be developed to be harmonised under the Machinery Directive for electric power tools and lawn/garden machinery. They have been improved compared to their predecessors considering the technical development, particularly the integration of electronic safety means. Users will benefit from availability of modern and safe products. Manufacturers benefit from the presumption of conformity with the Machinery Directive.

Industrial machinery - The 'Industrial machinery' subsector comprises about forty CEN and CENELEC technical bodies, dealing with a wide range of machinery used by the industry (e.g. paper, textile, food, oil and gas, amusement...). Many of the documents are harmonised standards in support of the Machinery Directive (2006/42/EC).

CEN/TC 12 'Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries' will:

- anticipate the forthcoming Standardization Request under the new Machinery Regulation for the part dedicated to the machinery used in drilling and well interventions;
- develop a homegrown European standard with safety requirements for drawworks;
- contribute to the 'lower carbon agenda' of the global oil and gas sector, which involves developing new standards and revising existing ones to address low carbon and circularity aspects;
- continue promoting its standards among new energy sectors, such as carbon dioxide capture, transportation, utilisation and storage (CCUS), geothermal and offshore wind, given the similarities.

In 2022, CEN/TC 145 'Plastics and rubber machines' will work on the following projects

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addressing safety requirements of the Machinery Directive (2006/42/EC):

- revision of EN 1417:2014 on two-roll mills;
- revision of EN 16474:2015 on tyre curing machines, that have a particular relevance for the large use in the tyre industry;
- brand new standard EN ISO 23582-1 on magnetic clamping systems for plastics and rubber machines.

CEN/TC 147 ' Cranes – Safety' will continue the revisions of the following standards in support of the Machinery Directive (2006/42/EC):

- EN 13000 'Cranes - Mobile cranes'. The new version will adapt the document to new technologies and revise the scope and the definition of a mobile crane to allow a clear distinction between the different products and their associated standards;
- EN 13001-3-1 'Cranes - General Design - Part 3-1: Limit States and proof competence of steel structure'. The revision will address certain issues concerning the assessment of static strength and fatigue strength. These issues will be amended so that the standard will be easier to apply to the crane types that are defined in the crane product standards.

CEN/TC 148 'Continuous handling equipment and systems – Safety' will finalise the revision of EN 619 'Continuous handling equipment and systems - Safety requirements for equipment for mechanical handling of unit loads'. This equipment is commonly used in the logistics of online sales which have increased significantly due to the worldwide sanitary crisis. The revision of this harmonised standard under the Machinery Directive (2006/42/EC) will increase the safety of operators.

CEN/TC 150 'Industrial Trucks – Safety', which has been developing standards for more than 30 years, has an important portfolio of standards and an extensive work programme. In 2022, CEN/TC 150 will continue its close cooperation with ISO developing globally relevant safety standards for industrial trucks which also address specific regional requirements with the aim of achieving citation as harmonised standards under the Machinery Directive (2006/42/EC). In support of this, new work to be started in 2022 includes:

- a new edition of EN 16307-1 'Industrial trucks - Safety requirements and verification - Part 1: Supplementary requirements for self-propelled industrial trucks, other than driverless trucks, variable-reach trucks and burden-carrier trucks', which provides the European requirements;
- a new part to the EN 16842 series 'Powered industrial trucks - Visibility - Test methods and verification' to provide the visibility requirements for rider-controlled pallet stacking trucks.

Projects on which the TC will work in 2022 include the revision of EN 1755, 'Industrial Trucks - Safety requirements and verification - Supplementary requirements for operation in potentially explosive atmospheres' in support of the ATEX Directive (2014/34/EU), to include requirements for driverless trucks and update electrical and braking requirements according to the state of the art.

CEN/TC 255 'Hand-held, non-electric power tools – Safety' will continue the work on the revision of EN ISO 11148-13 'Hand-held non-electric power tools — Safety requirements — Part 13: Fastener driving tools'. This document specifies safety requirements for hand-held non-electric power tools intended for installation of a fastener forming a mechanical connection or attachment with the workpiece which are for example wood and wood-based materials, plastic materials, fiber materials, cementitious materials, metals and combinations of these materials.

CEN/TC 399 'Gas Turbines applications – Safety', together with ISO, will finalise its first standard:

- EN ISO 21789 'Gas turbine applications - Safety (ISO/DIS 21789:2020)' under Machinery (2006/42/EC) and ATEX (2014/34/EU) Directives. The document will assist designers, manufacturers and others by providing methods of compliance with these two directives.

Machinery for mining, quarrying, construction equipment - CEN/TC 196 will work on the revision of EN 1889-2 'Machines for underground mines - Mobile machines working underground - Safety - Part 2: Rail locomotives'. In this revision, a significant part of the work will be focused on supplementing the safety requirements for the alternative drive concepts.

CEN/TC 271 'Surface treatment equipment – Safety' expects to publish the following projects in 2022:

- Revision of EN 1953 'Application equipment for coating materials - Safety requirements'
- Revision of EN 12621 – 'Machinery for supply and circulation of liquid coating materials - Safety requirements'

Pressure Equipment - CEN continues to support ongoing standardization activities in relation to pressure equipment, including the regular revision and maintenance of more than 200 harmonised European Standards supporting the implementation of the new EU Pressure Equipment Directive (2014/68/EU).

The year 2022 will see the publication of a new standardization request for CEN to further carry on with this work. The activities of most TCs will be shaped by this request, either leading them to further revise their existing portfolio or to develop new standards, for instance on new technologies like additive manufacturing for pressure equipment. In 2022, CEN/TC267 'Industrial piping and pipelines' will also release a new edition of the EN 13480 series on Metallic industrial piping.

Mining and metals

The mining and metal sector plays a key role in supporting the EU economy and is instrumental to many other sectors, including construction, automotive and electronics. The ever-growing demand of minerals requires a high effort in standardization, in relation to the definition, classification, testing, analysis and technical delivery requirements of the products of the metal industry.

Given the substantial interest around this sector, many stakeholders are involved in the standardization activities, including National Standardization Bodies (NSBs), manufacturers, users of metallic products and laboratories.

A remarkable number of standards produced for the mining and metal sector support several pieces of legislation, such as the Pressure Equipment Directive, the Simple Pressure Vessels Directive and the Construction Products Regulation (CPR). Moreover, European standardization in this field features a close collaboration with international standardization, with around 30% of iron- and steel-related standards adopted from, or developed in collaboration with, ISO.

23 technical bodies responsible

CEN/TC 132	Aluminium and aluminium alloys
CEN/TC 133	Copper and copper alloys
CEN/TC 184	Advanced technical ceramics
CEN/TC 219	Cathodic protection
CEN/TC 262	Metallic and other inorganic coatings, including for corrosion protection and corrosion testing of metals and alloys
CEN/TC 342	Metal hoses, hose assemblies, bellows and expansion joints
CEN/TC 459/SC 1	Test methods for steel (other than chemical analysis)
CEN/TC 459/SC 2	Methods of chemical analysis for iron and steel
CEN/TC 459/SC 3	Structural steels other than reinforcements
CEN/TC 459/SC 4	Concrete reinforcing and prestressing steels
CEN/TC 459/SC 5	Steels for heat treatment, alloy steels, free-cutting steels and stainless steels
CEN/TC 459/SC 6	Wire rod and wires
CEN/TC 459/SC 7	Steels for pressure purposes
CEN/TC 459/SC 8	Steel sheet and strip for electrical applications
CEN/TC 459/SC 9	Coated and uncoated flat products to be used for cold forming
CEN/TC 459/SC 10	Steel tubes, and iron and steel fittings
CEN/TC 459/SC 11	Steel castings and forgings
CEN/TC 459/SC 12	General issues
CEN/SS M11	Powder metallurgy
CEN/SS M14	Nickel
CEN/WS MODA	Materials modelling terminology, classification and metadata
CLC/SR 68	Magnetic alloys and steels
CLC/WS SGRM	CENELEC workshop on Specifications for Graphene Related Material

Standards published by CEN and CENELEC

CEN and CENELEC portfolio of deliverables: 985 ENs + 37 other deliverables
Work Items currently in the Work Programme: 111 ENs + 2 other deliverables

Further information

- Mining and metals

IRON AND STEEL

CEN/TC 459 'ECISS - European Committee for Iron and Steel Standardization' hosts 12 Subcommittees in charge of the standardization of a wide range of iron and steel products – such as wires, rods, tubes, sheets, castings and forgings – used for different applications, ranging from the electrical, the machinery, to the construction ones.

In 2021, CEN/TC 459 established its first Working Group – WG 1 'Steel circular economy' – that will start developing the standard 'Non-alloy carbon ferrous scrap categories and related specifications'. The standard will include the existing categories of the *European Steel Scrap Specification* issued in 1995, with the addition of new categories that were not existing at that time – providing harmonisation and minimum quality levels for scrap.

CEN/TC 459 will also continue supporting the CPR Acquis process, providing inputs in view of a possible future Standardization Request.

CEN/TC 459/SC 2 'Methods of chemical analysis for iron and steel' will adopt EN ISO 9647 'Steels — Determination of vanadium content — Flame atomic absorption spectrometric method (FAAS)' and EN ISO 11652 'Steel and iron - Determination of cobalt content - Flame atomic absorption spectrometric method'.

CEN/TC 459/SC 4 'Concrete reinforcing and prestressing steels' will revise EN 10080 'Steel for reinforcement of concrete – Weldable reinforcing steel – General' and develop the following European Standards as new projects:

- EN 10366 'Steel for the reinforcement of concrete — Weldable reinforcing steels — Recommendations for controlling the machine straightening by a processor of reinforcing steel coils manufactured according to EN 10080';
- EN 10369 'Prestressing steels - Greased and sheathed strands for the prestressing of concrete';
- EN 'Prestressing steels - Waxed and sheathed strands for construction applications';

CEN/TC 459/SC 8 'Steel sheet and strip for electrical applications' will continue working on EN 10107 'Grain-oriented electrical steel strip and sheet delivered in the fully processed state'.

CEN/TC 459/SC 9 'Coated and uncoated flat products to be used for cold forming' will publish two standards:

- EN 10202 'Cold reduced tinmill products - Electrolytic tinplate and electrolytic chromium/chromium oxide coated steel';
- EN 10169 'Continuously organic coated (coil coated) steel flat products - Technical delivery conditions'.

CEN/TC 459/SC 11 'Steel castings and forgings' will publish three standards:

- EN 10250-1 'Open die steel forgings for general engineering purposes - Part 1: General requirements';
- EN 10250-2 'Open die steel forgings for general engineering purposes - Part 2: Non-alloy quality and special steels';
- EN 10250-3 'Open die steel forgings for general engineering purposes - Part 3: Alloy special steels'.

OTHER STANDARDS AND ACTIVITIES TO BE DEVELOPED IN 2022

Alloys - CEN/TC 132 'Aluminium and aluminium alloys' will continue working on three standards:

- EN 14242 'Aluminium and aluminium alloys - Chemical analysis - Inductively coupled plasma optical emission spectral analysis';
- EN 1396 'Aluminium and aluminium alloys - Coil coated sheet and strip for general applications – Specifications'.

CEN/TC 132 will also publish EN 12392:2016 /prA1 'Aluminium and aluminium alloys - Wrought products and cast products - Special requirements for products intended for the production of pressure equipment'.

Metallic coatings - CEN/TC 262 'Metallic and other inorganic coatings, including for corrosion protection and corrosion testing of metals and alloys' will continue working in parallel with ISO, developing standards under the Vienna Agreement. CEN/TC 262 is expected to complete the revision of eight EN ISO standards, including a terminology one (EN ISO 2080 'Metallic and other inorganic coatings — Surface treatment, metallic and other inorganic coatings — Vocabulary'), and numerous test methods (e.g. EN ISO 9220 'Metallic coatings — Measurement of coating thickness — Scanning electron microscope method').

Advanced technical ceramics - CEN/TC 184 'Advanced technical ceramics' will adopt three ISO standards as European Standards:

- EN ISO 18754 'Fine ceramics (advanced ceramics, advanced technical ceramics) – Determination of density and apparent porosity';
- EN ISO 19629 'Fine Ceramics (advanced ceramics, advanced technical ceramics) – Thermophysical properties of ceramic composites – Determination of unidimensional thermal diffusivity by flash method';
- EN ISO 22459 'Fine ceramics (advanced ceramics, advanced technical ceramics) – Reinforcement of Ceramic composites – Determination of distribution of tensile strength and of tensile strain to failure of filaments within a multifilament tow at ambient temperature'.

Compared to the corresponding EN standards (editions from 2003 and 2010), the EN ISO standards are state-of-the-art methods that allow for the measurement of properties of advanced ceramic materials.

Services

The services industry is a key sector contributing to the new Industrial Strategy for a green and digital Europe. Standardization of services is seen as a crucial catalyst to foster the provision of cross-border services.

Currently, services account for 70% of the economic activity and a similar proportion of total employment in Europe. The number of European standards in the sector of services has increased in recent years. Nevertheless, their number remains small (around 2%), in comparison to the total number of European standards and the economic importance of the service sector in Europe. This means that there is significant untapped potential for the development and use of European standards on services.

The creation and use of European standards can contribute to the creation and development of a Single Market for services, together with ensuring the protection of consumers and the environment. Standards can set benchmarks against which businesses can measure the quality and performance of their own services or the services they are purchasing, thus improving transparency, competitiveness and increasing efficiency.

Service standards are a useful tool to promote best practices, to spread knowledge throughout the market and to define a common terminology relevant to different services sectors.

17 technical bodies responsible

CEN/WS 095	European quality framework for students' internships
CEN/WS	Future of social responsibility
CEN/WS	EUROSAFETOUR
CEN/TC 279	Value management
CEN/TC 319	Maintenance
CEN/TC 320	Transport – Logistics and services
CEN/TC 329	Tourism services
CEN/TC 331	Postal services
CEN/TC 348	Facility management
CEN/TC 389	Innovation management
CEN/TC 445	Digital information interchange in the insurance industry
CEN/TC 447	Horizontal standards for the provision of services
CEN/TC 452	Assistance dogs
CEN/TC 456	Reporting in support of online gambling supervision
CEN/TC 457	Digital preservation of cinematographic works
CEN/TC 461	Public procurement
CEN/CLC/JTC 1	Criteria for conformity assessment bodies

Standards published by CEN and CENELEC

CEN and CENELEC portfolio of deliverables: 321 ENs + 81 other deliverables
Work Items currently in the Work Programme: 44 ENs + 7 other deliverables

Standardization requests from EC/EFTA

M/XXX Postal services and the improvement of quality of service

Further information

- Services

FACILITY MANAGEMENT

Facility Management (FM) has a significant and direct environmental, social and economic impact through its management of the built environment and the services needed to sustain it for future generations. CEN/TC 348 'Facility Management' contributes actively to the sustainable transition of the built environment by developing the new technical report CEN ISO/TR 41019 on the role of FM in sustainability and resilience. Facility Management standards can guide professionals to improve their impact on sustainability: a mapping between the 17 UN Sustainable Development Goals (SDG) and the existing FM standards has been developed to link the positive impact on the relevant SDG through the creation, operation, maintenance, renovation, repurposing of facilities and provision of FM services.

In 2022 the committee will also finalise two new deliverables:

- EN ISO 41018 'Facility management – Development of facility management policy'. This standard intends to ensure alignment between the FM strategy and the demand of organisations' operational FM requirements and will empower FM organisations to manage efficiently and be sustainable in a globally competitive environment.
- CEN ISO/TR 41016 'Technology in facility management – Scope, key concepts and benefits'. The digital transformation in the FM industry is advancing as fast as the profession itself. This document will provide a framework designed to foster and capture global best practices, enhance the effectiveness of the global FM workforce and enable the FM industry to not only keep pace with technology advancement, but to drive it. The aim is to make it easier for the FM organization to order technology computer systems and getting different systems to talk to each other without having detailed knowledge.

OTHER STANDARDS AND ACTIVITIES TO BE DEVELOPED IN 2022

Horizontal services standards - As part of its continued work to support the development of the single market for services, CEN/TC 447 'Horizontal standards for the provision of services' is planning to start the exploratory work to determine in which areas and for what purposes the development of horizontal standards would be beneficial.

Potential work items currently under discussion are:

- Facility management and servitisation
- Customer service and complaint handling
- Digital contracts and electronic signatures.

Preservation of cinematographic works - CEN/TC 457 'Digital preservation of cinematographic works' has begun working onprEN 17650, which defines the 'Cinema Preservation Package (CPP)'. It expects to finalise and publish the European Standard and its corresponding Technical Report in the 2022. Together with both documents, a reference software shall also be provided.

Assistance dogs - CEN/TC 452 'Assistance Dogs' will continue developing a series of standards to specify clear criteria for assistance dog training, minimum requirements for trainers, assessment and assignment criteria and dog welfare, together with establishing a common and harmonised terminology.

The standards will ensure the free movement of assistance dog users among EU countries and clients will be able to have highly-trained dogs to the same standard around EU. This would ultimately lead to better health, safety, orientation and mobility of persons with disabilities.

Transport and vehicles

In an age of constant change, developing and maintaining a safe, efficient, resilient, and sustainable transport system in Europe is vital for the citizens, the economy and the environment. Thanks to a strong expertise of the European industry, SMEs and sectorial federations on this domain, the European standardization of transport systems is active all across the board: from the road to the space, from the rails to the water. This work encompasses horizontal topics of various nature such as interoperability, intermodality, the transport of dangerous goods and Intelligent Transport Systems (ITS).

Many of the standards developed and adopted by CEN and CENELEC in this area respond to Standardization Requests by the European Commission. These Harmonised Standards (hENs) support the implementation of relevant European legislation. In this field, European standards developed by CEN and CENELEC are a crucial support to the EU Directives relating to the interoperability of Europe's rail system (2016/797/EU), the recreational crafts and personal watercrafts (2013/53/EU), the deployment of alternative fuels infrastructure (2014/94/EU) and the cableway installations designed to carry passengers (2016/424/EU).

27 technical bodies responsible

CEN/TC 15 Inland navigation vessels
CEN/TC 119 Intermodal Loading Units and Cargo Securing
CEN/TC 226 Road equipment
CEN/TC 242 Safety requirements for passenger transportation by rope
CEN/TC 245 Leisure accommodation vehicles
CEN/TC 256 Railway applications
CEN/TC 261 Packaging
CEN/TC 274 Aircraft ground support equipment
CEN/TC 278 Intelligent transport systems
CEN/TC 296 Tanks for the transport of dangerous goods
CEN/TC 301 Road vehicles
CEN/TC 320 Transport - Logistics and services
CEN/TC 326 Natural Gas Vehicles - Fueling and Operation
CEN/TC 333 Cycles
CEN/TC 337 Road operation equipment and products
CEN/TC 354 Light motorized vehicles for the transportation of persons and goods and related facilities and not subject to type-approval for on-road use
CEN/TC 377 Air Traffic Management
CEN/TC 413 Insulated means of transport for temperature sensitive goods with or without cooling and/or heating device
CEN/TC 436 Cabin Air Quality on civil aircraft - Chemical Agents
CLC/BTTF 116-2 Alcohol interlocks
CLC/BTTF 69-3 Road traffic signal systems
CLC/TC 9X Electrical and electronic applications for railways
CLC/TC 18X Electrical installations of ships and of mobile and fixed offshore units
CLC/TC 69X Electrical systems for electric road vehicles
CEN-CLC/JTC 5 Space
CEN-CLC/JTC 20 Hyperloop systems
ASD-STAN Aerospace

Standards published by CEN and CENELEC

CEN and CENELEC portfolio of deliverables: 1377 ENs + 247 other deliverables
Work Items currently in the Work Programme: 326 ENs + 81 other deliverables
ASD-STAN portfolio: 2511 ENs
ASD-STAN Work Programme: 311 ENs

Standardization requests from EC/EFTA

M/300 – Cableway installations
M/421 – On-board diagnosis and information management
M/483 – Interoperability of the rail system
M/486 – Urban Rail
M/496 – Space Industry
M/524 – Air Traffic Management
M/533 – Alternative Fuels Infrastructure
M/542 – Recreational craft II
M/557 – Marine equipment
M/567 – UAS (Drones)

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M/569 – Caps & Lids II
M/XXX - Alternative Fuels Infrastructure II
M/XXX - Interoperability of the rail system II
M/XXX - ANPR

Further information

- Transport (CEN)
- Transport (CENELEC)

RAILWAY APPLICATIONS

In 2022, major work will be accomplished by CEN/TC 256 'Railway applications': the TC will revise all parts of the important EN 16585 series dedicated to the design of PRM use onboard rolling stock. This series is fundamental for the railway sector, as it helps the manufacturers design rolling stock with suitable environment for the person with reduced mobility. The standards cover accessibility requirements on clearways and internal doors, elements for sitting, standing and moving, and toilets. The development of these standards gathers manufacturers and operators, and the series supports important requirements of the Directive (EU) 2016/797 on the interoperability of the rail system within the European Union. The revision of this series will impact positively the life of all train travellers with reduced mobility by improving their condition of accessibility to the train and inside the train.

The enquiry on the fourth standard of a series prepared by ASD-STAN (prEN 4709-001 'Aerospace series - Unmanned Aircraft Systems - Part 001: Product requirements and verification') is closed. This document provides technical specifications and verification methods to support compliance with Commission Delegated Regulation (EU) 2019/945 of 12 March 2019 on unmanned aircraft systems and on third-country operators of unmanned aircraft systems. This includes compliance with product requirements for all UAS authorised to operate in the 'open' category (class C0, C1, C2, C3 and C4 UAS).

EN 4709-001, along with the three other parts of the series,should be published during 2022. It is the first time that CEN and ASD-STAN prepare a series of deliverables in support to a Standardization Request in the Aeronautic domain.

OTHER STANDARDS AND ACTIVITIES TO BE DEVELOPED IN 2022

Aircraft and spacecraft, and related equipment - CEN, in collaboration with ASD-STAN, continues to develop and maintain a broad range of products standards for the aeronautic industry.

CEN and CENELEC coordinate the development of standards for space products and applications within CEN-CENELEC JTC5 'Space', managed by the European Coordination for Space Standardization (ECSS), in line with the new EU-Space Programme and as required in Standardization Request M/496 (in the course of renewal).These standards will support the proposed Space Programme of the EU.

On the specific subject of Cabin Air Quality, CEN will pursue its cooperation with all stakeholders in the frame of CEN/TC 436 'Cabin Air Quality on civil aircraft - Chemical Agents', including EASA.

Motor vehicles - CEN/TC 301 'Road vehicles' is developing standards in response to various EC Standardization Requests, including M/421 and M/533.

In the electric vehicles sector, the same CEN/TC 301will revise EN ISO 15118-20 '2nd generation network and application protocol requirements for the vehicle-to-grid communication interface' and the EN ISO 15118-4 'Road vehicles on vehicle-to grid-communication interface'.

Railway and tramway locomotives and rolling stock and associated parts - In the railway sector, CEN and CENELEC participate actively to the Sector Forum Rail, which brings together representatives from the railway industry (supply industry and networks), relevant European and international organisations (such as UIC, UNIFE, UITP), Technical Committee chairs and project leaders.

Most European Standards relating to the rail transport sector are developed in CEN/TC 256 'Railway applications' and in CLC/TC 9X 'Electrical and electronic applications for railways'. These TCs collaborate with the European Railway Agency (ERA) with the aim to ensure that European Standards are compatible with the latest Technical Specifications for Interoperability (TSI).

In this context, a new standardization request connected to the new (EU) 797/2016 will be finalised and implemented in 2022. It aims mainly to update and maintain the current collection of harmonised standards.

In 2022, CEN/TC 256 will work on the revision of tEN 13452 part 1 and 2 on mass transit brake systems. Also, an important work of revision will be done on the EN 16272 series on the test method for determining the acoustic performance of noise barriers. There will also be the beginning of the work on revising standard prEN 13260 on wheelsets.

On the electric and electronic dimensions of railways applications, CLC/TC 9X will continue working on a series of new documents:TS 50717 on the requirements for current collectors for ground-level feeding system on road vehicles in operation, TS 50711 on high-voltage/low-voltage prefabricated substations in AC and DC electric traction systems, and the very important standard EN 50716 on cross-functional software standard for railways

To maintain the competitiveness of this sector, it is important to incorporate the relevant elements of research into existing or new standards. CEN and CENELEC work in close collaboration with the Joint Undertaking 'Shift2Rail' (a MoU was signed in 2021). One of the most challenging topics is the development of a standard on Digital Automatic Coupler aiming to increase the efficiency of the rail freight transport.

Hyperloop technology - Recently created CEN-CENELEC/JTC 20 'Hyperloop systems' will work on the development of two standards on the reference architecture and on transport services, and a technical report on a standards inventory and roadmap. As the demand for standardization is important for this brand new transport sector, JTC 20 is also planning to work on vocabulary definitions and general requirements.

Ships, boats and related equipment - The recently created CEN/TC 464 'Small Craft' is collaborating with its international counterpart, ISO/TC 188 (Small Craft), to review and revise its Harmonised Standards in line with the requirements of the latest EU Directive on recreational craft and personal watercraft (2013/53/EU). In particular, it will continue working on multiple parts of EN ISO 12217 'Stability and buoyancy assessment and categorization'. In parallel, the revision of standards will continue, like on EN ISO 6185-3 'Inflatable boats - Part 3: Boats with a hull length less than 8 m with a motor rating of 15 kW and greater'.

In 2022, CEN and CENELEC will also develop new test standards in support of a draft Standardization Request in the field of Fire Safety Marine Equipment. The standards will describe jet-fire and pool-fire test methods for the dry powders used in fire extinguishing systems.

Cable-supported transport systems with cabins - CEN/TC 242 'Safety requirements for passenger transportation by rope' will continue the initiated revision of prEN 15700 'Safety for conveyor belts for winter sport or leisure use', a standard that is important for the safety of children using those devices.

Road equipment - In the frame of the future deployment of automated vehicles, CEN/TC 226 'Road Equipment' is investigating on the needs and possibilities to improve the road signalling. While initial exchanges have taken place, no projects have been initiated at this stage.

Transport of dangerous goods - CEN and CENELEC develop and adopt standards in support of the implementation of EU Directives on the inland transportation of dangerous goods (2008/68/EC) and on Transportable Pressure Equipment (2010/35/EU) by offering the relevant standards for referencing in RID/ADR, the major set of international treaties on the transport of dangerous good.

In this framework, CEN/TC 286 'Liquefied petroleum gas equipment and accessories' will initiate the revision of the EN 14334 on the inspection and testing of LPG road tankers and the revision of the EN 14841 on the discharge procedures for LPG rail tankers. CEN/TC 23 'Transportable gas cylinders' will initiate the revision of EN ISO 11623 on the periodic inspection and testing of composite construction.

Accessibility

The adoption of the 'European Accessibility Act' (Directive EU 2019/882) is a big step forward to promote the inclusion of the 80 million persons with disabilities in Europe. The Directive includes common accessibility requirements for a wide range of products and services. European standardization has a role to play in ensuring the proper functioning of the EU internal market for accessible products and services, by developing consensus-based requirements and specifications.

European Standards are powerful tools to promote products and services that people with functional limitations, including persons with disabilities, can use on an equal basis with others. Persons with disabilities and ageing people, among others, benefit directly from a product, good or service that is easy to access, understand and use.

Accessibility is also recognised as a human right by the UN Convention on the Rights of Persons with Disabilities and is at the core of the EU Disability Strategy.

CEN/BT/WG 213, the Strategic Advisory Group on Accessibility (SAGA), advises the CEN Technical Board on political and strategic matters related to accessibility. It is working to further promotethe topic through the whole process of developing European Standards from the early stages.

7 technical bodies responsible

CEN/TC 10	'Lifts, escalators and moving walks'
CEN/TC 122	'Ergonomics'
CEN/TC 293	'Assistive products and accessibility'
CEN/TC 320	'Transport - Logistics and services'
CEN-CENELEC	and ETSI JWG 'eAccessibility'
CEN-CENELEC JTC 11	'Accessibility in the Built Environment'
CEN-CENELEC JTC 12	'Design for All'

Standardization requests from EC/EFTA

M/XXX draft Standardization Request on accessibility requirements for products and services

Further information

- Accessibility

ACCESSIBILITY REQUIREMENTS

In 2022, CEN, CENELEC and ETSI will begin their work in response to the Standardization Request on Accessibility addressed to them by the European Commission. This Standardization Request invites the three Organisations to develop standardization deliverables outlining accessibility requirements for products and services, as per the European Accessibility Act. This work will likely see the involvement of three existing technical bodies, namely the CEN-CENELEC and ETSI Joint Working Group on eAccessibility, the CEN-CENELEC Joint Technical Committee 11 'Accessibility in the Built Environment' and the CEN-CENELEC Joint Technical Committee 12 'Design for All'.

OTHER STANDARDS AND ACTIVITIES TO BE DEVELOPED IN 2022

Lifts - CEN/10 'Lifts, escalators and moving walks' will amend EN 81-70 'Safety rules for the construction and installation of lifts - Lifts for the transport of goods only - Part 70: Accessibility to lifts for persons including persons with disability'. The amendment will address the contrast of buttons for lifts, particularly relevant for persons with visual impairments.

Sustainability

CEN and CENELEC develop a large number of European standards which support the protection of the environment, thus helping to reach the objectives of the EU Green Deal and the Sustainable Development Goals of the UN 2030 Agenda. Standards help to tackle climate change, to ensure the conservation of our natural environment and to implement the sustainable use of resources and energy. They are key tools that complement national and European policies aiming to lead the transition towards a green economy and reach the climate target of net zero by 2050.

All technical bodies in CEN and CENELEC are required to take environmental aspects and climate change adaptation considerations into account. A set of tools and support services (such as guides or the environmental helpdesk for CEN) are also available to help TCs in all sectors address these aspects in standards.

Thanks to CEN and CENELEC's constant efforts invested in the greening of European Standards, companies and organisations using these standards are contributing to the protection of the environment. By using them, businesses and organisations not only meet legal requirements, but they can also benefit financially by reducing their use of resources such as energy and water, producing less waste, preventing accidents, improving resilience to climate impact and avoiding clean-up costs and fines. In addition, by demonstrating their commitment to the environment, companies and organisations may be perceived in a more positive way by their current and potential customers and could more easily access new business opportunities.

The CEN and CENELEC Strategic Advisory Body on Environment (SABE) follows closely the latest economic and policy developments,and provides advice to s the CEN and CENELEC Technical Boards and standard writers on how to address these in standards in all relevant sectors. SABE maintains close cooperation with the European Commission and regularly discusses with policymakers how standards can support the implementation of environmental and climate-related policies. In 2022, SABE will put more

focus on supporting standardization activities in the following priority fields of the Green Deal: biodiversity, toxic free environment, climate change and circular economy.

The CEN and CENELEC Adaptation to Climate Change Co-ordination Group coordinates the standardization work related to adaptation to climate change. The major objective of the work is to support the resilience of the European infrastructures with standards that incorporate climate adaptation needs.

Finally, the CEN-CENELEC-ETSI Sector Forum on 'Smart and Sustainable Cities and Communities' is the advisory and coordinating body for European standardization activities in this field. The Forum's objective is to help address cities' standardization needs and help them become smarter and more sustainable by using standards.

17 technical bodies responsible

CEN/TC 164	Water supply
CEN/TC 165	Waste water engineering
CEN/TC 183	Waste management
CEN/TC 223	Soil improvers and growing media
CEN/TC 230	Water analysis
CEN/TC 260	Fertilizers and liming materials
CEN/TC 264	Air quality
CEN/TC 308	Characterization and management of sludge
CEN/TC 335	Solid biofuels
CEN/TC 343	Solid recovered fuels
CEN/TC 351	Construction Products - Assessment of release of dangerous substances
CEN/TC 366	Materials obtained from End-of-Life Tyres (ELT)
CEN/TC 406	Mechanical Products - Ecodesign Methodology
CEN/TC 411	Bio-based products
CEN/TC 444	Environmental characterization of solid matrices
CEN/TC 454	Algae and algae products
CLC/TC 111X	Environment

Further information

- Environment and sustainability

CLIMATE AMBITION AND CLIMATE ADAPTATION

Standards can play an important role on identifying ways to plan, design and construct equipment, installations, buildings and infrastructures in such a way that they become more resilient to the climate impacts. In 2022, the CEN-CENELEC Coordination Group 'Adaptation to Climate Change' will continue to coordinate the revision and development of the standards as highest priority of the relevant Technical Committees working in the priority sectors of transports, energy, construction, and the supporting ICT. The work is carried out in support of the EU Strategy on Adaptation to Climate Change and responds to a specific standardization request (M/526). In 2022, the work will proceed on the revision of 19 standards for buildings and infrastructures and the development of a standard on 'sustainability of construction works'. In early 2022, CEN and CENELEC will organise a conference to share the results of its work with the broader public and get on board more experts from other sectors that may be impacted by climate change.

European standards can help define the quality and performance of these measures. In 2022, a CEN Workshop Agreement related to adaptation measures, such as cool roofs and cool materials, will be finalised, which can serve as a basis for a future European Standard.

In order to adapt to future climate evolutions, it is crucial to think about future climate conditions. This is especially relevant for infrastructures and buildings, regarding their long lifetimes. In 2022, the publication of a Technical Report that provides guidance for the inclusion of future climate information into standards for infrastructures is planned.

SUSTAINABLE DEVELOPMENT

A vast number of European Standards are supporting the Sustainable Development Goals (SDGs) of the UN 2030 Agenda in most business sectors.

Considering the importance of achieving the SDGs, both at the international and European level, in 2021 CEN and CENELEC started a project aiming to introduce a more systematic approach to addressing sustainable development objectives in standards and to develop an approach to demonstrate whether a specific European standard is supporting one or several SDGs. The first results of the project will be available in 2022.

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OTHER STANDARDS AND ACTIVITIES TO BE DEVELOPED IN 2022

Waste and secondary raw materials - The revision of the series of standards for collection, logistics and treatment requirements for Waste Electrical and Electronic Equipment (WEEE) developed in support of the WEEE Directive (2012/19/EU) and under mandate M/518 will be initiated in 2022. The revision will be carried out by CENELEC/TC 111X 'Environment'.

CENELEC/TC 111X will also work on the delivery of a European Commission Ancillary action on 'Material efficient recycling and preparation for re-use of Critical Raw Materials (CRMs) from different waste streams'. The work started in 2021 and will continue in 2022. The outcome will be a report comprising the mapping of already existing national, European and international standards in the area of waste treatment and production of secondary critical raw materials. This mapping will also include a gap analysis and proposals on how to address those gaps in future standardization actions as well as a ranking of the key waste streams in question and their components in terms of high potential for high quality recycling of CRMs through European standardization.

Smart and sustainable cities and communities - The work in this field is coordinated by the CEN-CENELEC-ETSI Sector Forum on 'Smart and Sustainable Cities and Communities' and the relevant standardization activities are developed by CEN/TC 465 'Sustainable Cities and Communities'. The work of the new TC is to assist cities and communities' decision making and support them in their sustainability efforts through the development of requirements, frameworks, guidance, supporting tools and techniques helping to achieve sustainability.

The Technical Committee has started to involve all interested parties. In 2022, it will continue addressing specific European needs through a consistent approach with ISO/TC 268 'Sustainable Cities and Communities'. The following topics were identified as potential candidates for European standardization: localising UN Sustainable Development Goals, nature-based solutions, (Climate) resilience of cities & communities, co-creation & stakeholder engagement, digital transformation, citizen services and smart energy.

Circular economy - CEN and CENELEC continue to put a big emphasis on the achievement of a Green and Circular Economy, which is one of the main pillars of the European Green Deal. Since 2020, a dedicated group of the CEN and CENELEC Strategic Advisory Body for the Environment has been in charge of coordinating the circular economy initiatives. Their priority for 2022 is to help technical committees better understand circularity and to better connect technical work with the policy objectives. In 2022, a closer cooperation will be established with the European Commission to identify the specific needs of the policy makers.

Air quality - CEN/TC 264 'Air quality' closely follows the latest technical research and policy developments related to the identification of the air pollutants and develops and revises standards that allow the measurement and the comparison of measurement results of the known pollutants across the EU, in line with the current European legislation.

In 2022, the TC will finalise the revision of EN 12341 'Ambient air - Standard gravimetric measurement method for the determination of the PM10 or PM2,5 mass concentration of suspended particulate matter'. The aim of this European Standard is to present a harmonised methodology for monitoring the mass concentrations of suspended particulate matter (PM10 and PM2,5 respectively) in ambient air, and to support Directive 2008/50/EC on Ambient air quality and cleaner air for Europe.

The standardization work under the ozone precursor mandate M/561 will continue in 2022. In addition to this, in 2022 the TC intends to initiate work on fugitive emission measurements and to methane measurements.

Thanks to the close cooperation with the European Commission, the Standardization

Request on methods for the measurements of PCDDs/PCDFs and dioxin-like PCBs, total gaseous mercury and formaldehyde in support of Directive 2010/75/EU on Industrial emissions is expected to be issued early 2022 and the work on the relevant standards can be started in 2022.

Environmental characterization of solid matrices - CEN/TC 444 'Environmental characterization of solid matrices' develops horizontal multi-matrix standards. It covers the standardization of test methods for the environmental characterisation of soil, solid and liquid waste, biowaste and sludge.

In 2021 the TC established two new Working Groups, one on 'Sampling' and one on 'Assessment'. The new WGs will start their activities in 2022.

Following a successful online workshop in 2021, CEN/TC 444 decided to establish an Expert Group on Microplastics to determine the standardization needs related to microplastics in solid matrices. The Expert Group is currently being set up and expected to start delivering in 2022.

Improved participation in environmental aspects of the standardization - The EU-funded project "Engaging more standard bodies and national environmental organisations in the environmental aspects of standardization" aims at engaging all members and national environmental organisations to participate more actively in the environmental protection-related strategic discussions and standardization work of CEN. Thanks to the project, standardization and its environmental aspects gain more and more visibility and appreciation at national level. A much broader number of CEN members are participating in the strategic environmental discussions at European level and more national environmental NGOs get involved in the standardization work and help standard writers "green" their standards.

The project had to be extended due to the global pandemic and the national engagement and networking events planned for 2020 and 2021 have been moved to 2022. In accordance with the current planning, a series of workshops will be organised in Bulgaria, Romania, Latvia, Lithuania, and Malta in 2022.

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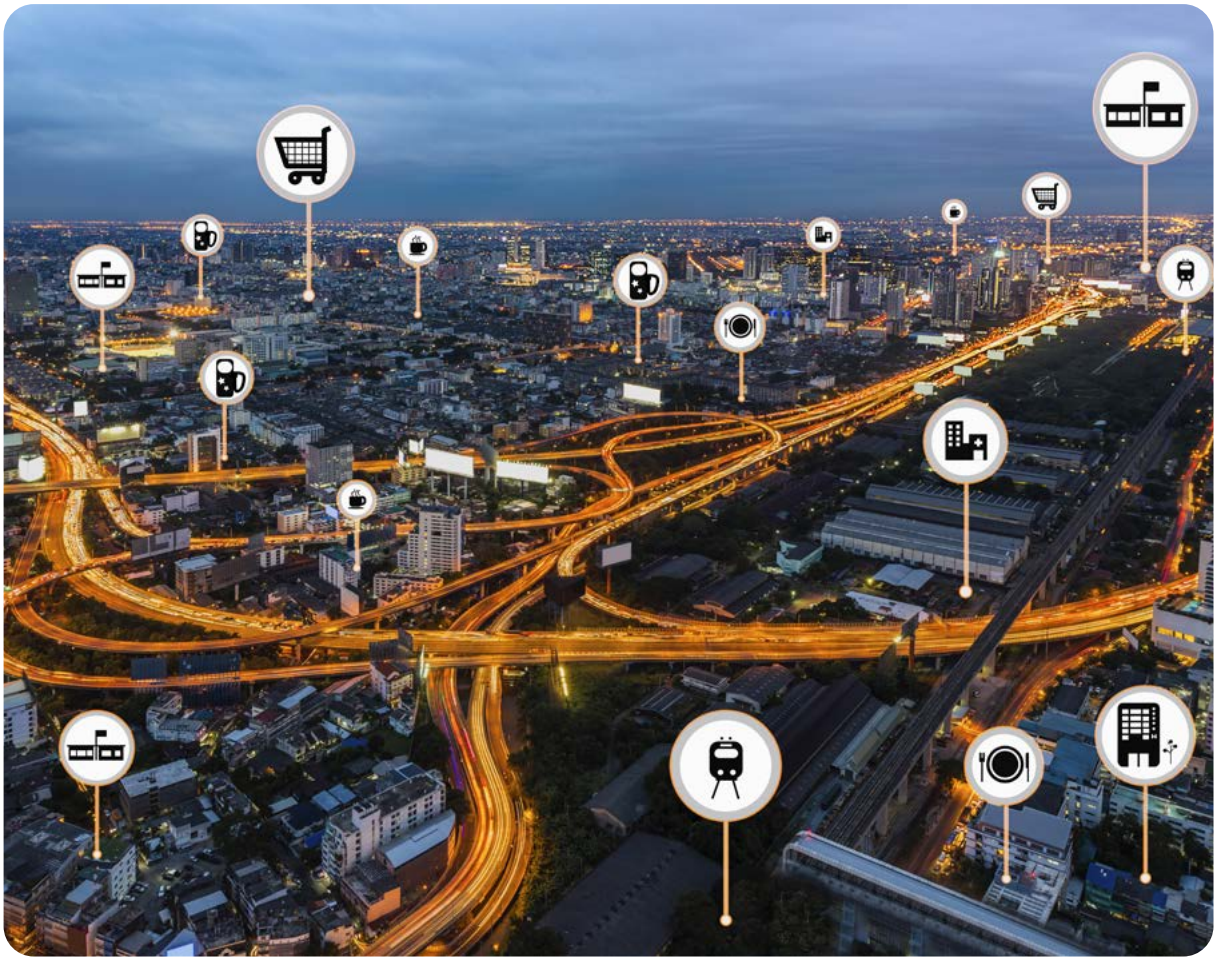
Smart technologies



Technologies are becoming 'smarter' every day and capable of adapting their behaviour to fit the environment through wireless access, sensors and data. The Internet of Things (IoT) is one of the enablers of the fourth industrial revolution, known as Industry 4.0, as it fosters the automation and data exchange in manufacturing technologies.

Standardization needs to adapt quickly to cope with development such as the rapid changes in the markets, their increased levels of complexity, the changing business environment and a more dynamic and inclusive society. Lines between traditional standardization sectors are blurred, thus requiring effective action to break down the traditional approach based on vertical silos. The concepts of smartness and digitalisation should not only be addressed in terms of technological performance, but also considered in the process of long-term sustainable development. Standards provide a basis for integrating technologies into complex systems, preventing vendor lock-ins and facilitating interoperability and data exchange.

For these reasons, standards play a crucial role in the consolidation of the European single market and contribute to the competitiveness of European industry. CEN and CENELEC are engaged in several activities on topics such as smart grids, smart cities, cybersecurity, artificial intelligence, blockchain, distributed ledger technologies and quantum technologies. The two organisations work together to develop standards supporting the development of an open competitive market and actively cooperate with ISO and IEC to reach agreements on common standards that can be applied worldwide.

55 technical bodies responsible

CEN/TC 92	Water meters
CEN/TC 171	Heat cost allocation
CEN/TC 176	Heat meters
CEN/TC 224	Personal identification and related personal devices with secure element, systems, operations and privacy in a multi-sectorial environment
CEN/TC 225	AIDC technologies
CEN/TC 234	Gas infrastructure
CEN/TC 237	Gas meters
CEN/TC 247	Building Automation, Controls and Building Management
CEN/TC 251	Health informatics
CEN/TC 278	Intelligent transport systems
CEN/TC 287	Geographic Information
CEN/TC 294	Communication systems for meters
CEN/TC 318	Hydrometry
CEN/TC 353	Information and Communication Technologies for Learning, Education and Training
CEN/TC 365	Internet Filtering
CEN/TC 428	Digital Competences and ICT professionalism
CEN/TC 434	Electronic Invoicing
CEN/TC 440	Electronic Public Procurement
CEN/TC 445	Digital information Interchange in the Insurance Industry
CEN/TC 465	'Sustainable and Smart Cities and Communities'
CEN/WS 084	Self-Sovereign Identifier for Personal Data Ownership and Usage Control (CEN WS ISÆN)
CEN/WS FATEDA	Standards-Compliant Formats for Fatigue Test Data
CEN/WS ICT ICT/SKILLS	Workshop (IT profiles and curricula)
CEN/WS JXF	XFS for the Java Platform
CEN/WS METEDA	Mechanical Test Data
CEN/WS SCS	Description and Assessment of Good Practices for Smart City Solutions
CEN/WS XFS	eXtensions for Financial Services
CLC/WS 04	Interoperability framework requirements specification for services to the home (IFRS)
CLC/TC 8X	System aspects of electrical energy supply
CLC/TC 13	Electrical energy measurement and control
CLC/TC 46X	Communication cables
CLC/TC 57	Power systems management and associated information exchange
CLC/TC 59X	Performance of household and similar electrical appliances
CLC/TC 65X	Industrial-process measurement, control and automation
CLC/TC 86A	Optical fibres and optical fibre cables
CLC/TC 86BXA	Fibre optic interconnect, passive
CLC/TC 100X	Audio, video and multimedia systems and equipment and related sub-systems

CLC/TC 108X	Safety of electronic equipment within the fields of Audio/Video, Information Technology and Communication Technology
CLC/TC 205	Home and Building Electronic Systems (HBES)
CLC/TC 209	Cable networks for television signals, sound signals and interactive services
CLC/TC 210	Electromagnetic Compatibility (EMC)
CLC/TC 215	Electrotechnical aspects of telecommunication equipment
CLC-ETSI/JWG	Digital Dividend
CEN-CLC-ETSI	JWG eAccessibility
CEN-CLC-ETSI SF	Smart and sustainable cities and communities
CEN-CLC-ETSI	Coordination Group on Smart Energy Grids
CEN-CLC-ETSI	Coordination Group on Smart Meters
CEN-CLC/JTC 13	Cybersecurity and Data Protection
CEN-CLC/JTC 19	Blockchain and Distributed Ledger Technologies
CEN-CLC/JTC 21	Artificial Intelligence
CEN-CENELEC	Focus Group on Quantum Technologies
CEN-CENELEC	Focus Group Artificial Intelligence
CEN-CLC/WS INACHUS	Urban search and rescue (USaR) robotic platform technical and procedural interoperability
CEN-CLC/WS SEP2	Industry Best Practices and an Industry Code of Conduct for Licensing of Standard Essential Patents in the field of 5G and Internet of Things
CEN-CLC/WS SEP-IoT	Workshop on Best Practices and a Code of Conduct for Licensing Industry Standard Essential Patents in 5G and the Internet of Things (IoT), including the Industrial Internet and connectorised components

Further information

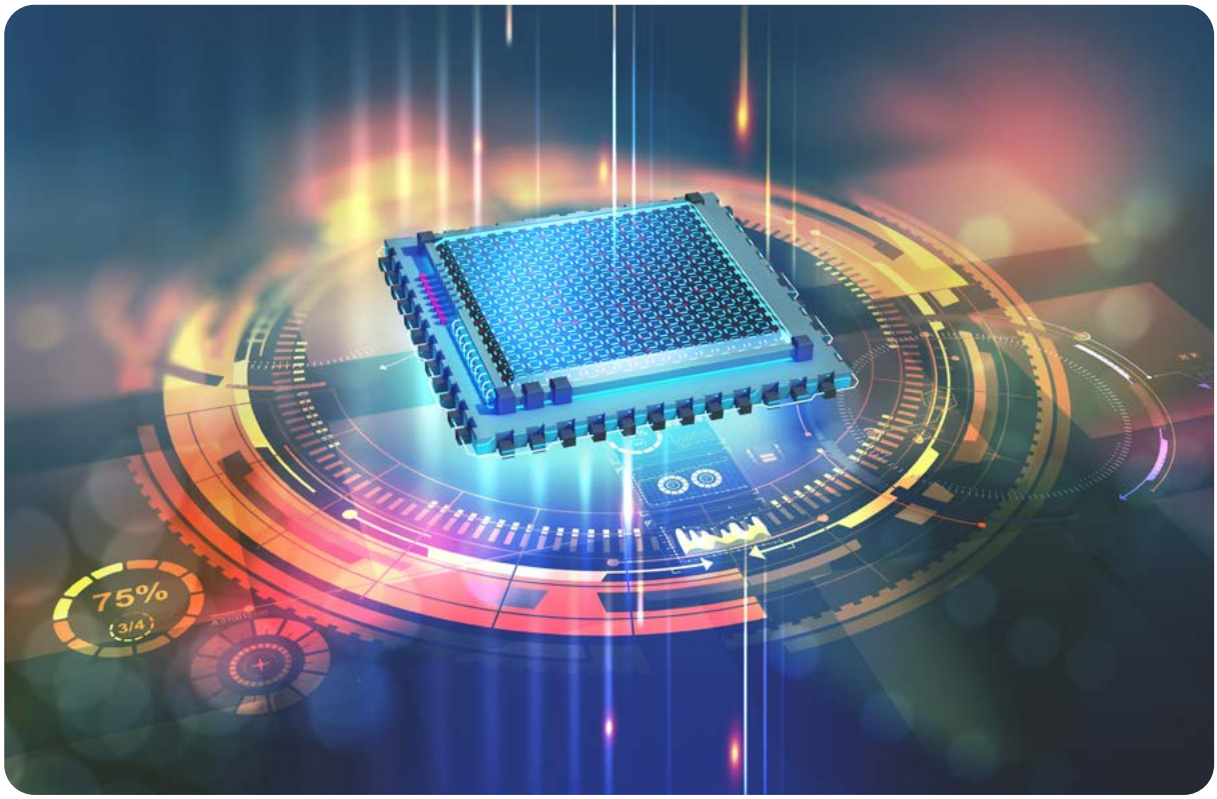
- Smart Grids and Meters
- Quantum technologies
- ITS and mobility services

QUANTUM TECHNOLOGIES

Quantum Technologies (QT) will be one of the most promising key technologies in the coming decades. To support its uptake, the European Commission launched the QT Flagship, a EUR 1 billion initiative funding leading scientists and engineers over the next ten years, managed as part of the FET (Future and Emerging Technologies) program. This initiative is highlighted as a very important and urgent action to position and keep Europe at the forefront of the second quantum revolution, which is unfolding worldwide, bringing transformative advances to science, economy and society.

CEN and CENELEC have created a dedicated Focus Group on the matter of Quantum Technologies that addresses the issue from a standardization perspective. The Focus Group facilitates an active dialogue between stakeholders and discuss the needs and challenges for bringing quantum technologies into the market. Standardization activities are so far related to the areas of quantum communication and minimally to quantum computers. It is important to start identifying, guiding or initiating activities within other main categories, such as quantum metrology and sensing, as well as quantum simulation. In this context, the CEN-CENELEC Focus Group is cooperating with the Focus Group from ITU-T on Quantum information Technology for Networks.

To realise the potential of quantum standardization in Europe, the Focus Group in 2022 will make available a European standardization roadmap on Quantum Technologies.



OTHER STANDARDS AND ACTIVITIES TO BE DEVELOPED IN 2022

Intelligent Transport Systems - The term Intelligent Transport Systems (ITS) refers to efforts to collect, store and provide real-time traffic information to maximize the utilisation efficiency, provide convenient safe transport, and reduce energy by applying advanced electronics, information and telecommunication technologies into roads, automobiles and goods. CEN/TC 278 'Intelligent Transport Systems' develops European Standards and Technical Specifications in response to various Standardization Requests and the EU Rolling for ICT.

CEN cooperates closely with CENELEC, ETSI and ISO to ensure a coherent approach to standardization.

In 2022, the work of CEN/TC278 will continue in the Urban ITS area, which includes the development of the EU-ICIP project. EU-ICIP will deliver an extensive guide providing information on what communications and data standards are available in the field. This will enable the interoperability and regulated requirements for ITS in Europe, informing potential users of the compatibilities and incompatibility issues of various options.

In the field of Electronic Fee Collections standards, CEN/TC278 will carry on with the revision of its portfolio and extend it to include 'Automatic Number Plate Recognition' technologies. This work will be done in response to a Standardization Request currently under discussion.

New work will also be started in the field of public transport. The focus will be on the further development of OpRa, a data exchange format based on Transmodel (EN 12896). Specifically, it will focus on the development a minimum set of Public Transport raw data needed to

make quantitative analysis of public transport services, the end goal being to enable Quality of Service evaluation.

Smart Grids + Ontologies - CEN and CENELEC continue working on breaking down technical barriers that prevent the creation of a single market for energy, the reduction of energy costs and the further deployment of new technologies that can support the decarbonisation and the digitalisation of the energy sector.

In 2022, the CEN-CENELEC-ETSI Coordination Group on Smart Grids will continue advising on European standardization requirements relating to smart electrical grid and multi-commodity smart metering standardization, including interactions between commodity systems (e.g. electricity, gas, heat, water), and assesses ways to address them. This includes interactions with end-users, including consumers/prosumers.

The Coordination Group will also promote deployment of open and interoperable data architectures, the industry's wider implementation of standards for smart grids and meters, and liaise with the international standardization organizations, ISO and – especially - IEC. The collaboration aims to achieve consistency between European and international standards, to avoid the duplication of work and to ensure that a consolidated view is taken into account at international level. In particular, the Coordination Group will continue benefiting about its relationship with the IEC System Committee on Smart Energy.

The digital transformation of the energy sector has an impact on all processes and stakeholders all along asset lifecycle management. In this context, the Group is committed to support the development of machine processable standards that could enable semantic interoperability of the digital twins of all the assets.

The implementation of CEN and CENELEC Strategy 2030

Following the adoption of the **CEN and CENELEC Strategy 2030** by the common session of the AGs in November last year, a high-level Task Force was mandated by the Presidential Committee to devise a **rolling Implementation Plan** to deliver on the new strategy. The latter Implementation Plan was approved by the CEN and CENELEC General Assemblies in November 2021 and consists of the following elements:

- a **Measurement Framework,** which includes success statements, actionable objectives and a comprehensive set of Key Performance Indicators (KPIs), allowing us to monitor and evaluate progress against the goals and priorities identified in the Strategy 2030;
- a **Monitoring & Accountability Framework,** which defines the roles and responsibilities of the respective CEN and CENELEC actors involved, offering an innovative design for an efficient and agile delivery-architecture; and
- an **initial batch of five strategic projects,** which have been identified for implementation as of 2022, and were consolidated in consultation with relevant groups within the CEN and CENELEC systems. Below we elaborate on each of these projects.

Project 1. Timely Citation of Harmonised Standards. Building on the work of a high-level Task Force including the three ESOs and different branches from the European Commission, this project aims to identify and address a list of jointly agreed measures to i) better align European policies, business priorities and standardization efforts in strategic sectors; and ii) streamline and improve the operational procedures for drafting, adopting and citing standards and other standardization deliverables. We believe this project will help us address the longstanding issues with the citation of harmonised standards, while working ever more closely with the European Commission to safeguard European economic interests internationally.

Project 2. It consists of three **digitalisation projects,** notably on Online Collaborative Authoring, Standards of the Future (SMART) and Open-Source Solutions. All three are meant to facilitate CEN and CENELEC's digital transformation and will strive to adhere to a maximum degree of alignment with relevant ongoing initiatives at international level. International alignment and compatibility with, and between, IEC and ISO systems are fundamental prerequisites for an effective digitalisation of our systems and services and must be managed carefully.

Project 3. Assessing user needs. It intends to conduct a comprehensive mapping and health check of the various systems currently in place at European and national level to collect, assess and address user feedback. The aim of the project is to share experiences and to identify knowledge gaps and inefficiencies across our current systems. Where relevant, existing systems and lessons learned at ISO and IEC on user needs assessment will be included in the mapping exercise. The project intends to establish a preparatory step towards the development of a comprehensive, online monitoring system that will provide granular, searchable information on different aspects of user needs and user feedback, and to develop bespoke toolkits and materials for enhanced user engagement.

Project 4. Diversity and representation. It initially focusses on a preparatory scoping exercise of stakeholder representation in the CEN and CENELEC system at national and European level. Then, a second phase will assess other aspects of diversity and representation such as gender, age and language, by building on the insights generated through relevant exercises currently ongoing at IEC and ISO.

Project 5. Monitoring of strategic issues at ISO and IEC. We intend to develop a coordination

mechanism to i) proactively identify topics of European strategic interest that could form the basis for a new field of activity or new work item for a CEN and/or CENELEC Member to take the lead on within IEC or ISO; and ii) flag and monitor strategic issues and new fields of activity being proposed at the international level, in order to draw the attention of CEN & CENELEC Members, so they can respond in timely manner, given the issue at hand is supported by their national stakeholders - noting that this is entirely left to the discretion of each national NC/NSB, as they are the national members of ISO and IEC). As such, projects 1 and 5 are intended to inform one another and will be managed to that purpose.

2021 in many ways was a year of transition, one in which we translated our strategic high-level commitments into actionable objectives and concrete projects for implementation through a fit-for-purpose delivery-framework. 2022, on the other hand, promises to be a year of action, and signals the start of CEN and CENELEC's journey towards realising the goals and priorities we identified for ourselves and our organisations.

Digital Transformation

Digitalisation presents a major change in how we live and interact as a society, how we work and do business. The gathering and conversion of data into countless digital solutions offers unprecedented opportunities for businesses to make better informed decisions, become more efficient and develop innovative products and services. For CEN and CENELEC, thriving in the digital era will require significant reflection, investment and cooperation. Digitalisation offers an opportunity to be bold and to lead the way in bringing the standardization community firmly into the 21st century, as we embark on a comprehensive digital transformation of our processes, products and services. The digital transition will change the way we operate and who we work with, how we create, manage and interact with standard content and, most fundamentally, how we create value for our stakeholders and customers in a digitalising economy.

In this context, CEN and CENELEC are committed to a full Digital Transformation programme to offer a unified interface for Members and their experts, and ensure interoperability across the international, regional and national levels.

The work mainly focuses around three projects, supervised by the CEN and CENELEC Digital and IT Strategic Advisory Group (DITSAG):

1. Online Collaborative Authoring focusses on providing a more modern, consistent, seamless and integrated working environment to Technical Bodies, NSBs and central secretariats. Along with ISO and IEC, CEN and CENELEC first launched the first major release in October 2020 with selected pilot groups who have been drafting their standards directly within the FontoXML-based tool. Feedback from the pilot groups has been positive and constructive, and is being incorporated into quarterly releases. In 2021, there is a special focus on commenting features in order to facilitate the public enquiry phase, expected to go live with selected pilots across all four organizations later in the year.

2. Standards of the Future explores how to provide users with machine readable standards, with a holistic approach encompassing the information model, processes, governance, commercial and IPR topics as well as technical tools. The focus thus far has been on the information model (initially through several pilots based on different types of standards, then in a more formal/technical way) and understanding stakeholder requirements. Activities continue to benefit from collaboration with ISO's ISO SMART project and IEC's SG 12 on Digital Transformation and Systems Approach.

3. Open Source Solutions aims to develop a framework for incorporating open source approaches into standardization activities. Currently, this project is looking at prospective pilot groups to test proposed approaches around platform, licensing options, contractual, legal and commercial obligations.

Furthermore, within the dedicated Taskforce on Shared Digital Infrastructure, a "mixed scenario" is being explored whereby selected digital services may be provided to members on an optional basis, either by CCMC or by one member to another. A governance framework will be piloted with the aim of balancing interests like speed, agility, cost optimization and maintaining a coherent network.

Research and innovation

Building on the achievements of the CEN and CENELEC Innovation Plan launched in 2018, **BT/WG STAIR (STAndards, Innovation and Research)** will continue to follow up on relevant actions to ensure the Plan's continued implementation and to provide strategic advice to bring CEN and CENELEC closer to research and innovation (R&I) communities.

Over the last years, CEN and CENELEC have expanded their engagement with the R&I community, increasing their visibility and striving to attract new target groups. With this aim, in 2022, it is foreseen to carry out a study on the benefits of standards for **start-ups and spin-offs.** Moreover, further discussions are anticipated with DG Research & Innovation, also aimed at identifying new areas of collaboration with European Innovation Council (EIC) and the European Institute of Innovation & Technology (EIT).

CEN and CENELEC will also host the fourth edition of the **Standards + Innovation Awards.** these awards will again celebrate to innovators, researchers, European research projects and the new category of young researchers, who have resorted standardization to scale up their innovative ideas.

The launch of **Horizon Europe,** the European research and innovation Framework programme 2021-2027, will present opportunities for:

- Early linkage of relevant research with standardization through CEN and CENELEC Members participating in new research projects. The results of screening of Horizon Europe calls for project proposals will be systematically shared with the Members;
- Increasing the number of technical bodies formally linked with research projects and research projects committing at an early stage to develop CEN and CENELEC Workshop Agreements (CWA) as a stepping stone towards the development of European standards;
- Possible participation of CEN-CENELEC in Horizon Europe funded projects with the aim to reinforcing the links between research, innovation and standardization and ensuring that standardization is an integral part of the European research and innovation landscape.

The identification of **new topics for standardization** will remain paramount, reinforcing channels and sources to identify new standardization areas for CEN and CENELEC and to further develop internal foresight capacity. The renewal of the cooperation agreement with the European Commission's Joint Research Centre (JRC) will give further impetus to the identification of emerging science and technology areas where standardization can boost innovation, under the Putting Science into Standards (PSIS) initiative.

Inclusiveness of the European Standardization System

CEN and CENELEC, with their members, the national standardization organizations, are fully committed to supporting organizations representing consumers, workers and environmental interests, as well as small and medium-sized enterprises (SMEs) in standardization. Stakeholders are encouraged to engage with the national standardization organizations and, through them, to take part in the European and international standardization system.

To further reinforce the representativeness of SMEs and of societal stakeholders in the process of developing standards, CEN and CENELEC encourage and facilitate their appropriate representation and effective participation at the different stages of the development of European standards or other deliverables. In particular, European stakeholder organizations – the European Association for the Coordination of Consumer Representation in Standardisation (ANEC), the European Environmental Citizens Organization for Standardization (ECOS), the European Trade Union Confederation (ETUC) and Small Business Standards (SBS) – receive Union financing in accordance with European Regulation 1025/2012. ANEC (representing the interests of consumers in standardization), ECOS (representing environmental interests) and SBS (representing SMEs) have signed

partnership agreements with CEN and CENELEC, while ETUC (representing workers' interests) has signed a partnership agreement with CEN only.

In line with CEN-CENELEC Guide 25 'The concept of partnership with European organizations and other stakeholders', which was revised in 2021, partnerships with stakeholders organizations are developed taking into account their complementary roles and are respectful of the different levels at which such cooperation may take place, be it at national or European level. However, partnerships developed under Guide 25 are only complementary to the need for the members of the partner organizations to participate in the work of their national standard bodies and national electrotechnical committees, where national opinions are formed, votes are decided, and consensus is built. Several projects will be kicked-off in 2022 under the CEN and CENELEC Strategy 2030 Implementation Plan to further enhance stakeholders' engagement.

Supporting SME participation

CEN and CENELEC, in close cooperation with SBS, in the framework of the implementation of Regulation 1025 with regards to Annex III organisations, facilitate SMEs' participation in standardization at the national and European levels and promote awareness among SMEs of the added value standardization brings for their business. Together with their national members, and in close cooperation with SBS, CEN and CENELEC have developed a range of tools and means to make it easier for SMEs to learn about standardization, to access and apply standards, and to get involved in standardization activities at all levels. These tools include the following:

- An online 'SME Toolbox of Solutions' describes the benefits of standards, how to find the right standards and where to obtain relevant information, which was reviewed in 2021.
- 42 national SME helpdesks are service centres that provide direct support the SMEs' participation in the standardization system.
- CEN-CENELEC Guide 17 'Guidance document for standard writers taking into account SME needs' has been published by CEN and CENELEC to give advice and recommendation to standard writers on how to take into account SMEs needs. The Guide is available in 27 languages and has also been jointly adopted by ISO and IEC and published as ISO/IEC Guide 17.

Furthermore, the majority of CEN and CENELEC members provide user-friendly online platforms for public commenting, which can be accessed in the national language of the country concerned and make it easy for representatives of SMEs and other stakeholders to access the texts of draft European Standards and submit their comments online.

All the above-mentioned tools, and many others, will continue to be used in 2022 to reach CEN and CENELEC's objective to facilitate SMEs' participation in standardization at national and European level. This includes the development of further supporting materials dedicated to entrepreneurs, managers and employees who work for SMEs to learn about standards and standardization in a way that corresponds with their own needs.

Including societal stakeholders

Standards can have a broad impact on society, in particular on the safety and well-being of citizens, the efficiency of networks, the environment, the safety of workers and working conditions, accessibility and other public policy fields. For this reason, it is crucial that all relevant parties that have an interest in a particular standard contribute to its development. This is why CEN and CENELEC encourage and facilitate the appropriate representation and effective participation of consumer and environmental organizations, as well as representatives of trade unions in their standardization activities, in particular through the so-called Annex III Societal organizations: ANEC (representing consumer interest), ECOS (representing environmental interests), ETUC (representing workers' interests). A dedicated Societal Stakeholders Group (SSG) has been set-up as a CEN and CENELEC Advisory Body that provides a high-level framework for ongoing

cooperation and dialogue. Furthermore, similar to the toolbox for SMEs, dedicated tools for the different societal stakeholders are also available on the CEN and CENELEC website. CEN and CENELEC also launched in 2018 'Standards for all', an eLearning course for societal stakeholders on standardization.

CEN and CENELEC's efforts to include societal stakeholders in standardization will continue in 2022. A particular focus will be dedicated to fostering inclusion at the national level through the continuing implementation of the 'Engage' project, in collaboration with ECOS. The aim of Engage is to help smaller and newer countries overcome the disadvantage they experience on environmental matters, for lack of resources or know-how. If originally the project, launched in 2018, was expected to last three years, it had to be extended due to the global COVID-19 pandemic and the national engagement and networking events planned for 2020 and 2021 have been moved to 2022. In accordance with the current planning, a series of workshops will be organised in Bulgaria, Romania, Latvia, Lithuania, and Malta over the course of 2022. For more information, please see the 'Sustainability' part of this report.

Promoting Gender Responsive Standardization

CEN, CENELEC and their Members recognise the influential role of standards in our society and believe that it is essential to include a gender-lens in the standards development process and the European system as a whole.

Understanding and addressing the diversity of our society brings higher-quality standards that ensure safe and secure products and environments for all. For this reason, CEN and CENELEC, together with more than 20 National Standardization Organizations, Members of CEN and CENELEC, signed the UNECE Declaration for Gender Responsive Standards, and pledged to create and implement a Gender Action Plan to support more gender-balanced and inclusive standards development processes, as well as to strengthen the gender responsiveness of standards themselves. The implementation of the Gender Action Plan was approved for a period of 3 years, starting on January 2020 with the creation of the CEN-CENELEC Informal Coordination Group on Gender Diversity & Inclusion.

In 2022, the dedicated Group will continue its efforts towards fostering gender equality in standardization and develop a proposal for the next Gender Action Plan in support of the CEN and CENELEC Strategy 2030 Goals.

Industry Advisory Forum

The Industry Advisory Forum (IAF), set up at the end of 2018 for a 3-year period, offers a flexible mechanism for industry representatives to feed their views into CEN and CENELEC's standardization work. The aim of the Forum is to provide a platform for dialogue with high-level industry representatives to advise on key standardization strategic issues and ensure that standards provide an adequate response to market needs.

A second mandate of the IAF will be kicked-off in 2022, building on the lessons learned from the first experience, to further support the goals of the CEN and CENELEC Strategy 2030 by developing recommendations to the CEN and CENELEC boards on identified standardization priorities, address the industry challenges, expectations and concerns and identify common solutions.

European Affairs

With only few years into President von der Leyen's Administration, the European Union (EU) has gone through its fair share of growing pains. Heading into 2022, the challenges of the global pandemic, both social and economic, has inspired the EU to focus on enhancing European sovereignty and gathered its resources to embrace the Twin Transitions, Green and Digital.

Over the last few years, CEN and CENELEC have grown together with these new policy makers and have succeeded in progressing on several strategic projects across the different technical sectors and topics. These relationships embrace the foundation of not only the Twin Transitions, but a special focus on the New Legislative Framework (NLF), to lay a foundation for the work ahead. By properly observing the

NLF, all stakeholders work harmoniously in their respective roles and responsibilities, developing a more efficient use of resources and agile workflows that encourage innovation. One of CEN and CENELEC's main goals from Strategy 2030 is to re-establish a more direct and constant relationship with EU Institution representatives, overcoming the set-back caused by the pandemic, and using more digital tools to develop hybrid activities.

With this objective in mind, CEN and CENELEC took some relevant policy actions already in 2021. These actions included: **European Year of Rail:** A European campaign lead by DG MOVE was supported by the Standards@Rail publication participation in the Connecting Europe Express with Shift2Rail and mentorship of experts from CEN; **Climate Action and COP26:** In parallel to the activities of Glasgow, the European Commission invited experts from CEN and CENELEC to discuss "The role of policy framework, standards & support tools for businesses to become climate-neutral"; **Stakeholder workshops:** CEN, CENELEC and ETSI Workshop on Standards in support of the industrial Data Value Chain and a bespoke training session with DG ENV.

A few major highlights of joint policy campaigns and events that will carry on into 2022 will include:

- **European Standardization Strategy:** In 2022, the European Commission will release a European Standardization Strategy to build a robust, resilient, and competitive green economy for Europe, which encourages the alignment of strategies for and use of standardization as a key asset towards achieving these ambitions. In order to develop this strategy, DG MOVE invited CEN, CENELEC and Members to help develop the Roadmap that would develop the framework for this strategy. For specific details, please click here.
- **World Standards Day and the UN 2030 Agenda Sustainable Development Goals:** Every year on 14 October, the international standardization community celebrates World Standards Day. Last year's edition "Our shared vision for a better world" was dedicated to how standards support the Sustainable Development Goals of the United Nations (SDGs). In 2022, CEN and CENELEC will begin mapping the exact relationship between standards and the SDGs.
- **Timely Delivery of Standards:** On Tuesday 16 November, CEN and CENELEC organised the online workshop "Timely delivery of European standards for a Green and Digital, Single and Global Market".

Co-organised by CEN and CENELEC with ETSI, the European Telecommunications Standards Institute, and the European Commission, this joint Task Force on Timely delivery and citation will continue to pursue possible paths to improve the European Standardization System.

In parallel, CEN and CENELEC plan to continue strengthening their relationship with National Members with regards to European Affairs activities. In the last three years, the activities dedicated to European Affairs became progressively more operational, involving Members' representatives and developing systematic sharing of resources and information. This cooperation includes the **European Policy Hub** (EPH), which since its development in 2019 has consisted of the EU standardization policy/public affairs staff members of CEN and CENELEC's Members, in order to coordinate and create synergies that anticipate or act on current European policy issues.

Over the past year, CEN and CENELEC were able to increase bilateral discussions with influential MEPs and Commission officials, encouraging the importance of Standards for the overall welfare of our economies and our societies, as well as how they play an instrumental role in successfully implementing the new commitments of the EU's terms for industrial efficiency and decarbonisation. These meetings were complimented by the use of publications, such as the position papers *"CEN-CENELEC response to the European Commission's Public Consultation on the draft Machinery Regulation"* and *"Proposal for a Regulation laying down harmonized rules on artificial intelligence (Artificial Intelligence Act- COM 2021/206"*, which are meant to clarify and illustrate the

role standards play and will keep on playing in the future. These activities will continue and will see the development of new topics. Found at the centre of the European Commission's agenda, these topics can include: General Product Safety Regulation, Construction Products Regulation (CPR) and the overall role of Harmonised standards, Artificial Intelligence, Machinery Regulation, the industrial Data Value Chain, as well as many others to come.

International Cooperation

CEN and CENELEC will continue, as top priority, to promote the participation in ISO and IEC and the uptake of ISO and IEC standards by all partners.

In 2022, CEN and CENELEC will also work on developing the existing cooperation with their regional and national standardization priority partners in the Gulf (GSO), India (BIS), Japan (JISC), China (SAC) and Africa (ARSO and AFSEC).

Additional activities undertaken in the framework of these partnerships vary, depending on the topics of interest identified with each partner. Foreseen activities will include:

- Supporting the EU-Japan Industrial Policy Dialogue
- Identifying additional areas of common interest with JISC
- A new Cooperation Agreement with SAC (China) to be signed and implemented
- Strategic and information-exchange meetings with SAC through CEN-CENELEC TF China
- Identifying further technical collaboration activities with GSO
- Identifying areas of technical collaboration of mutual interest with BIS
- Seeking possibilities to implement the TF Africa Quality Infrastructure Roadmap with European and African partners.

In 2022, CEN and CENELEC will also further strengthen their cooperation with the Companion Standardization Bodies (CSBs) and explore opportunities to offer additional services.

Finally, CEN and CENELEC expect to continue developing the CEN and CENELEC Global Outreach Report, their flagship publication outlining the main data regarding their international activities.

European Standardization's Presence in China and India

Also in 2022, CEN and CENELEC, together with ETSI, EFTA and the European Commission, will continue supporting the two visibility projects 'Seconded European Standardization Expert in China' (SESEC) and 'Seconded European Standardization Expert in India' (SESEI). These projects, which build on the success of the European Standardization model in sharing experiences, provide intelligence and facilitate bilateral cooperation on standardization matters, thereby supporting European companies in accessing the Chinese and Indian markets. SESEC and SESEI participate actively and effectively in Task Force China and Task Force India, respectively.

- **China**: in 2022, the fifth phase of the SESEC project will build on the success of previous phases to foster partners and stakeholders' dialogues with their Chinese counterparts, bring regulatory and standardization-related information to European stakeholders and support European businesses' market access in China.

- **India:** in 2022, the fourth phase of the SESEI project (SESEI IV) will continue to develop activities of common interest for India and Europe, in sectors such as railways, circular economy, services, electrical equipment and installation rules. It will also provide information on the proposed EU-India investment trade agreement and foster the development of a strong partnership with BIS, the Indian National Standardization Body.

Events

The organisation of events is one of the most effective and relevant ways for CEN and CENELEC to proceed with their stated objectives of raising awareness on the European standardization process and creating lasting networks among all stakeholders involved in the standardization process.

During 2022 and building on the expertise and tools developed to face the Covid pandemic, CEN and CENELEC plan to organise a series of events, integrating online and hybrid with face-to-face formats, to meet direct stakeholders' needs in the field. The preliminary list of events proposed for 2022 contains a variety of concepts and focusses on CEN and CENELEC's priorities for their way forward. Among them, it is worth highlighting the following:

- **Industry Stakeholders Engagement Workshops**: in line with the ambition stated in CEN and CENELEC's Strategy 2030 to support the Twin Green and Digital Transitions of the European economy, two workshops will be organised in 2022. The first workshop will be dedicated to **Nature-based Solutions to tackle Environmental Challenges** (Q2) and will discuss the uptake of nature-based solutions for innovative, sustainable and cost-effective ways to achieve a greener economy. The second workshop will be dedicated to **Digital Solutions for the Energy Transition** (Q4) and will explore areas where standards can support the green and digital transition of the European energy industry and connect standardization to the upcoming EU Action Plan on the Digitalization of the Energy Sector (planned for 2022).

- **Ethical AI:** the 2022 edition of the **Putting Science into Standards (PSIS)** workshop, jointly organised by CEN and CENELEC and the Joint Research Centre of the European Commission (JRC), will be dedicated to **Data Quality Requirements for inclusive, non-biased, Ethical AI.** The workshop will bring together key researchers working on the topic, relevant industry players and policymakers, with the aim to analyse the state of the art findings and start developing initial guidelines in view of data quality standards for AI models.

- **Standards for Security**: a workshop dedicated to **New Solutions for Security Standardization** will be organised in conjunction with a webinar-series on the opportunities and gaps in security standardization at the European level. The event will bring together a wide set of stakeholders to develop the solutions to the issues raised during the workshops, in a collaborative and cross-sectorial way.

A complete overview of the events organised by CEN and CENELEC in 2022 will be made available on the website.

Trainings

In 2022, CEN and CENELEC will organise the following recurrent trainings:

- **10-10 webinars:** as it is now an established tradition, during the year CEN and CENELEC will hold regularly 30 minutes-webinars on specific topics that will take place on the 10th of every month.

- **Webinars for Standard Drafters:** they consist of webinars for Technical Body Secretaries and TC Working Group convenors. These webinars aim at creating a common understanding of the drafting rules and the related procedures. At the same time, it is an excellent opportunity for editors at the CEN and CENELEC Management Centre (CCMC) to better understand TCs' expectations and strengthen working relationships with Technical Bodies.

- **IT Tools trainings:** they consist of trainings dedicated to CEN and/or CENELEC IT Tools, depending on the updates of the tools or needs of the customers.

- **Technical Body officers training (December 2022):** this training is especially targeted to newly appointed Technical Body Officers and it helps them become more acquainted with the standards development process and the European standardization system.

Furthermore, in the first months of 2022, CEN and CENELEC will hold a series of worskhops exploring different dimensions of standardization in the field of security and a concluding event that will build on the preceding workshop series to develop solutions to the issues raised during the workshops:

- **Workshop 1 'Security in the cyber-physical space'** (8 February 2022)
- **Workshop 2 'Civilian and military security'** (28 February 2022)
- **Workshop 3 'Interoperability of security'** (21 April 2022)
- **Event 'New Solutions for Security Standardization'** (5 May 2022)

The complete list will be updated and completed over the course of the year. The overall event page on the CEN-CENELEC website, regularly updated, gives the best overview of planned events.

Members of CEN and CENELEC

For more information about standards and how you can participate in standardization, please contact the National Standards Body or National Electrotechnical Committee in your country.

Austria

ASI - Austrian Standards International
www.austrian-standards.at

OVE - Österreichischer Verband
für Elektrotechnik
www.ove.at

Belgium

NBN - Bureau de Normalisation /
Bureau voor Normalisatie
www.nbn.be

CEB/BEC - Comité Electrotechnique Belge / Belgisch Elektrotechnisch Comité
www.ceb-bec.be

Bulgaria

BDS - БДС – Български институт за стандартизация
www.bds-bg.org

Croatia

HZN - Hrvatski zavod za norme
www.hzn.hr

Cyprus

CYS - Κυπριακός Οργανισμός Τυποποίησης
www.cys.org.cy

Czech Republic

ÚNMZ - Úřad pro technickou normalizaci, metrologii a státní zkušebnictví
www.unmz.cz

Denmark

DS - Dansk Standard
www.ds.dk

Estonia

EVS - Eesti Standardikeskus
www.evs.ee

Finland

SFS - Suomen Standardisoimisliitto ry
www.sfs.fi

SESKO - Suomen Sähköteknillinen Standardisoimisjärjestö
www.sesko.fi

France

AFNOR-Comité Electrotechnique Français
www.afnor.org

Germany

DIN - Deutsches Institut für Normung
www.din.de

DKE - Deutsche Kommission Elektrotechnik Elektronik Informationstechnik im DIN und VDE
www.dke.de

Greece

ΕΛΟΤ - Ελληνικός Οργανισμός Τυποποίησης
www.elot.gr

Hungary

MSZT - Magyar Szabványügyi Testület
www.mszt.hu

Iceland

IST - Staðlaráð Íslands
www.stadlar.is

Ireland

NSAI - National Standards Authority of Ireland
www.nsai.ie

Italy

UNI - Ente Italiano di Normazione
www.uni.com
CEI - Comitato Elettrotecnico Italiano
https://www.ceinorme.it/it/

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Latvia
LVS - Latvijas standarts
www.lvs.lv

Lithuania
LST - Lietuvos standartizacijos departamentas
www.lsd.lt

Luxembourg
ILNAS - Organisme luxembourgeois de normalisation
www.portail-qualite.public.lu

Malta
MCCAA - Malta Competition and Consumer Affairs Authority
www.mccaa.org.mt

The Netherlands
NEN - Nederlands Normalisatie-instituut
NEC - Nederlands Elektrotechnisch Comité
www.nen.nl

Norway
SN - Standard Norge
www.standard.no

NEK - Norsk Elektroteknisk Komite
www.nek.no

Poland
PKN - Polski Komitet Normalizacyjny
www.pkn.pl

Portugal
IPQ - Instituto Português da Qualidade
http://www1.ipq.pt/PT/Pages/Homepage.aspx

Republic of North Macedonia
ISRSM - Институт за стандардизација на Република Северна Македонија
https://isrsm.gov.mk/en/

Romania
ASRO - Asociația de Standardizare din România
www.asro.ro

Serbia
ISS - Institute for Standardization of Serbia
www.iss.rs

Slovakia
UNMS SR - Úrad pre normalizáciu, metrológiu a skúšobníctvo Slovenskej republiky
www.unms.sk

Slovenia
SIST - Slovenski inštitut za standardizacijo
www.sist.si

Spain
UNE - Asociación Española de Normalización
www.une.org

Sweden
SIS - Swedish Standards Institute
www.sis.se

SEK - Svensk Elstandard
www.elstandard.se

Switzerland
SNV - Schweizerische Normen-Vereinigung
www.snv.ch

Electrosuisse
www.electrosuisse.ch

Turkey
TSE - Türk Standardları Enstitüsü
www.tse.org.tr

United Kingdom
BSI - British Standards Institution
www.bsigroup.com

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** Number of full members in December 2021*

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