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## Standards in LCE4Roads

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### What is a standard?

- Technical document designed to be used as a rule, guideline or definition
- Issued in a recognised organización → standardization body
- Transparent process
- Based on consensus
- Voluntary



## CEN



- The **European Committee for Standardization** have **33** National Standardization bodies (28 EU, 3 EFTA, Turkey, Macedonia)
- Provides platform for stakeholders in a specific area to come together and reach a consensus at European level
- Help to ensure the principles of transparency, openness, coherence, consensus



## CEN deliverables

- Produced in Technical/Project Committees with national delegations:
  - European Standards – EN
  - Technical Specifications - CEN/TS
  - Technical Reports - CEN/TR
- Produced in Workshops with individual interested parties:
  - CEN Workshop Agreements - CWAs



## AENOR



- Private, independent, non-profit association
- About 700 members (national associations and federations)
- Founded in 1986
- Created to develop **Standardization** and **Conformity Assessment** activities in all industrial sectors

AENOR 

## AENOR - Standardization

- Official Spanish Standardization Body, national member of the international and European corresponding Organizations



AENOR 

## AENOR – Assessment of conformity

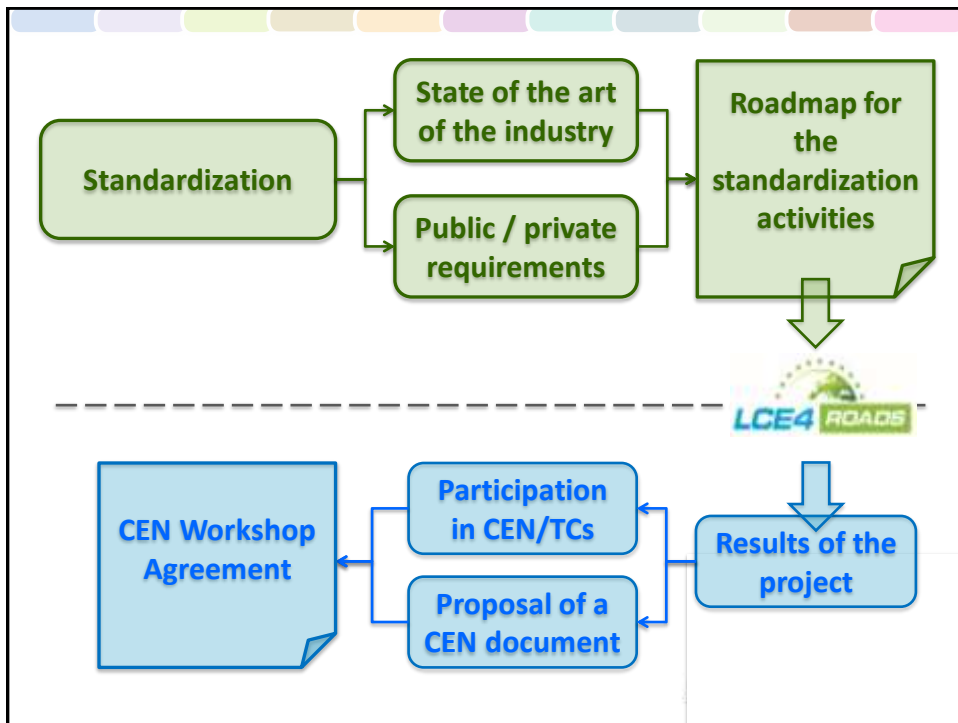
- AENOR is the leading organization for **certification** and **verification** in Spain
  - More than 20.000 certificates in force for management systems
  - More than 100.000 products with in force certificates



## Standardization in the project

- Input:
  - State of the art in the industry
  - Relation with EU regulations
- Output:
  - Deliver the knowledge generated in the document to the market
  - Use the standardization system as *peer review*





## D7.6 standardisation route (M6)

- This deliverable had two parts:
  - the first part defines the state of the art in the standardisation field in connection with European policies and regulations;
  - the second part summarizes the possibilities for the standardisation route
- The deliverable identified relevant CEN/TCs related with road materials and sustainability

## Road materials

- CEN/TC 227 "Road materials"
  - WG 1 Bituminous mixtures
  - WG 2 Surface Dressing, Sprays and Slurry Surfacing
  - WG 3 Materials for concrete roads including joint fillers and sealants
  - WG 4 Hydraulic bound and unbound mixtures
  - WG 5 Surface characteristics
  - **WG 6 Sustainability**



## Other road related TC

- CEN/TC 154 "Aggregates and earthworks"
- CEN/TC 51 for cement and cement based products
- CEN/TC 336 "Bituminous binders"
- CEN/TC 250 for bridges and structures



## Cost-effective roads

- CEN/TC 350 includes a the economic assessment of construction works as part of the sustainability assessment
- ISO/TC 59/SC 14 "Design life
  - ISO 15686-5:2008 Buildings and constructed assets -- Service-life planning -- Part 5: Life-cycle costing (under review)



## Safer roads

- CEN/TC 227/WG 5 – surface pavement characteristics
- CEN/TC 169/WG 5&6 – road lighting
- CEN/TC 226/WG 1 – road restraint systems
- CEN/TC 226/WG 2 and 3 – horizontal and vertical road signs
- CEN/TC 226/WG 4 – devices for traffic control
- CEN/TC 226/WG 11 – variable message signs



## Greener roads

- CEN/TC 350
  - WG 3: Environmental products declarations (EPD)
  - **WG 6: Environmental assessment of civil engineering works**



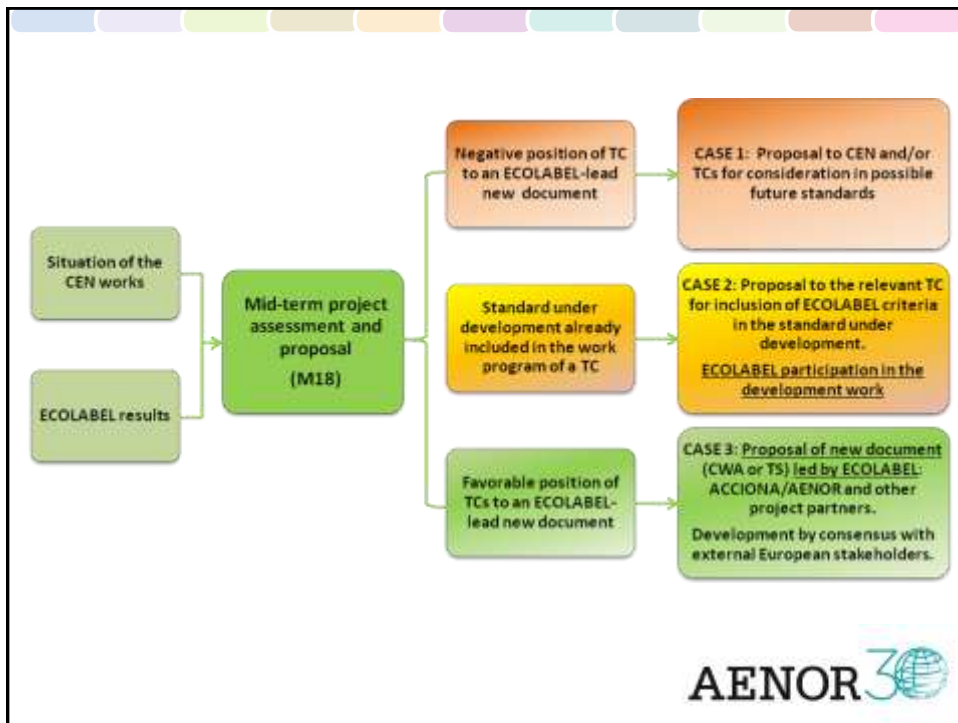
## Climate resilient roads

- In April, 2013, the European Commission presented the Communication (2013) 216 "An EU Strategy on adaptation to climate change":

*Standards can apply during the planning phase (e.g. risk assessments, environmental standards), the design phase (e.g. Eurocodes), the construction phase (European and national product standards, implementation standards) and the maintenance phase (e.g. environmental standards, safety standards). Thus standards have an important impact on the resilience of products, processes and construction.*







## CWA

- Can be technical specifications, guidance material, best practice, information, etc.
- Listed in the CEN and Members' catalogues (no obligation of adoption)
- Consensus limited to all the organizations involved in its elaboration
- Fast : 12-18 months
- Can be the basis for a European or International standard at a later stage

## CWA

- CWAs are the best fitted documents to introduce the outputs of research projects into the standardization system
  - Due to time considerations
  - Considering them as a first step to be promoted to future standards if their application in the market is successful



## CWA process

<b>Project Plan</b>	<b>Kick-off Meeting</b>	<b>Drafting &amp; public consultation</b>	<b>Publication</b>
<b>Describing</b> <ul style="list-style-type: none"> <li>– Scope</li> <li>– Objectives</li> <li>– Financing</li> <li>– Schedule</li> </ul>	<b>Confirming</b> <ul style="list-style-type: none"> <li>– Project Plan</li> <li>– Rules of the Workshop</li> <li>– Financing</li> <li>– Chairmanship</li> <li>– Secretariat</li> </ul>	<b>Consensus Process</b> <ul style="list-style-type: none"> <li>– Workshop participants</li> <li>– Public consultation where required</li> </ul>	<b>Publication as CEN document</b> <ul style="list-style-type: none"> <li>– Max validity 6 years</li> <li>– It shall not conflict with EN standards</li> </ul>





Standards - Your Innovation Bridge



2015-10-30

**Workshop Project Plan for "Indicators for the sustainability assessment of roads"**  
(WS SUSTAINABILITY ASSESSMENT OF ROADS)

**1. Status of the Project Plan**  
Draft Project Plan to be approved at the sub-off meeting of the CEN Workshop. The sub-off meeting will take place on 14 December 2015.

**2. Background to the Workshop**  
2.1 Context and market environment  
2.1.1 The global context

Road transport is crucial for the territorial cohesion within the European Union and to open new business opportunities abroad. In terms of infrastructure (with more than 5,000,000 km of paved roads) and transport of both goods and passengers, it could be considered as the most important transport network in EU-28 member countries.

The "Europe 2020 Strategy" includes the Flagship Initiative "Resource efficient Europe", where European Commission presents proposals aiming at cleaner, more efficient and more sustainable transport through the adoption of measures such as research and innovation, setting common standards and developing the necessary infrastructure support as well as regulatory measures such as pricing. The White Paper on Transport, takes into account major policy initiatives for a competitive and resource efficient transport system under sustainable developments. Furthermore, ERTRAC (European Road Transport Research Advisory Group) sets out the following ambition: "Towards a 50% more efficient road transport system by 2020".

However, these targets have challenges and threats to be tackled such as the deterioration of existing infrastructures, their susceptibility to climate change and the expected increase of road freight transport (between 40-50% compared to today), maintaining competitive strength of EU transportation while addressing environmental goals, without forgetting the limited financing due to the economic stringency. Therefore, there is an ambitious goal to fulfil these needs but it is clear that should be achieved in the most cost-effective way.



**Standardization**  
in research and innovation projects

because they... environment

**ECOLABEL:**  
Development of a novel ECOLABELLING framework for construction materials and products. This is a joint FP7 project (October 2013 to September 2016) to

**THE PROJECT:**  
The ECOLABELLING framework will assess and certify products and services that contribute to sustainability because they have demonstrated a reduced environmental impact throughout their lifecycle. There are already more than 10,000

**WHY STANDARDS? A SOLUTION FOR MARKET UPTAKE**  
The project is based on the assessment of the road built and its components (sustainability-proof). Standardization will play a key role during the road's lifetime because construction products are covered by harmonised standards (EN and other

WORKSHOP VISION AENOR V.1

PAGE 1



## CWA Sustinroads scope

- This document defines indicators for the study of pavement solutions for **roads**, based on **environmental, economic, social and technical** criteria
- Chairman: Carlos Martín-Portugués (Acciona)
- Secretariat: AENOR

## Coordination with other TC

- CEN/TC 350 sustainability in construction
  - Plenary meetings
  - WG 3 Environmental declarations (EPD)
  - WG 6 Civil engineering works
  - TG Framework (coordination group)
- CEN/TC 227 road materials
  - Plenary meeting
  - WG 6 sustainability



## Participation and transparency

- Experts from **20 organization** registered, including public administration, research bodies, construction companies, product manufacturers associations, etc.
- Public consultation during 2 months
- Draft delivered to the most relevant TC for comments



## CWA Sustinroads process

- Kick off: Madrid 2015-12-14 → first draft based on the **results of LCE4Roads**
- 2<sup>nd</sup> meeting: Brussels 2016-03-03
- 3<sup>rd</sup> meeting: Brussels + Madrid + Online 2016-04-15
- Consultation period 2016-06-02 to 2016-08-02
- Compilation of the comments and circulation to experts with tentative answer



## CWA Sustinroads process

- 4<sup>th</sup> meeting: Leiden 2016-09-22&23



Tentative date for publication: December 7<sup>th</sup>

TC 911 (2014) (E)

**Contents**

Contents	Page
Contents forward	3
Introduction	4
1 Scope	7
2 Normative references	7
3 Terms and definitions	8
4 Abbreviations	10
5 Indicators	11
6 List of indicators	11
6.1 For the indicators included in Table 1 the normative references included in clause 2 are applicable. Environmental indicators	12
6.1.1 SPI 4: Primary materials consumption	12
6.1.2 SPI 2: Secondary materials consumption	12
6.1.3 SPI 3: Materials or components to be reused or recycled, and exported energy	12
6.1.4 SPI 4: Energy use	14
6.1.5 SPI 9: Water	15
6.1.6 SPI 6: Global Warming Potential (GWP)	15
6.1.7 SPI 7: Formation potential of tropospheric ozone (FPOF)	17
6.1.8 SPI 8: Depletion potential of the stratospheric ozone layer (SDP)	19
6.1.9 SPI 5: Acidification potential of soil and water (AP)	20
6.1.10 SPI 10: Eutrophication Potential (EP)	21
6.1.11 SPI 11: Abiotic depletion potential for non-fossil resources (ADP elements)	22
6.1.12 SPI 12: Abiotic depletion potential for fossil resources (ADP-fossil fuel)	24
6.1.13 SPI 13: Human Toxicity Potential (HTP)	25
6.1.14 SPI 14: Ecotoxicity Potential (ETP)	27
6.2 Economy indicators	28
6.2.1 General	28
6.2.2 SPI 15: Whole life cost	29
6.3 Social indicators	30
6.3.1 SPI 16: Comfort index	32
6.3.2 SPI 17: Safety audits and safety inspection	34
6.3.3 SPI 18: Adaptation to climate change	36
6.3.4 SPI 19: Type-generation index	36
6.3.5 SPI 20: Responsible sourcing	37
6.3.6 SPI 21: Traffic congestion due to maintenance activities	37
6.3.7 Suggested deployment procedures	38
Annex A, Table A.1 – Example of release of declared values for an information module	40
EN 15026	41

TC 911 (2014) (E)


**5 Indicators**

**5.1 List of indicators**

The sustainability performance indicators (SPI) defined in this document are included in Table 1. For the indicators included in Table 1, the normative references included in clause 2 are applicable.

**Table 1 – Sustainability performance indicators for road structures**

Indicator	Category	SPI	
		Code	Description
Environmental	Parameters	1	Primary materials consumption
		2	Secondary materials used
		3	Materials or components to be reused or recycled, and exported energy
		4	Energy use
		5	Water
		6	Global warming potential (GWP)
		7	Formation potential of tropospheric ozone (FPOF)
		8	Depletion potential of the stratospheric ozone layer (SDP)
		9	Acidification potential of soil and water (AP)
		10	Eutrophication potential (EP)
Economic	High-level categories	11	Abiotic depletion potential for non-fossil resources (ADP elements)
		12	Abiotic depletion potential for fossil resources (ADP-fossil fuel)
		13	Human Toxicity Potential (HTP)
		14	Ecotoxicity Potential (ETP)
		15	Whole life cost
		16	Whole life cost



International standards

Creating CONFIDENCE globally



Waste Standards Day  
14 October 2011





THANKS

for your attention

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