

BUSINESS PLAN

CEN/TC 336

BITUMENS AND BITUMINOUS BINDERS

Version 2023

EXECUTIVE SUMMARY

BUSINESS ENVIRONMENT

The various bituminous binder market players and interested parties are the following:

- the bituminous binder producers;
- the road construction industry: asphalt producers and contractors;
- the waterproofing, roofing, flooring and building industries using bituminous binders;
- the adhesive, painting and specific industries using bituminous binders;
- the public authorities, such as road and building administrations.

BENEFITS

The EN standardization documents developed by the CEN/TC 336 describe test methods and specifications of the bituminous binders which facilitate their assessment and their most appropriate selection for each application (intended use). The CEN/TC 336 standardization documents contribute to:

- comply with the requirements of the CPR¹;
- enable the European internal market between countries for the sake of users, contractors, producers and authorities as an objective of the CPR;
- reduce the product costs by the use of common test methods and product specifications;
- use common reference tools within European and trading countries.

PRIORITIES

The priorities of the CEN/TC 336 are to establish, develop and update:

- reference European product specification standards for users, contractors, producers and authorities, complying with the CPR;
- reference test methods assessing the bituminous binders' characteristics and performance;
- specification standards for bituminous binders for paving or industrial uses related to their performance.

¹ Construction Product Regulation (Regulation (EU) No 305/2011 of the European Parliament and of the Council of 9 March 2011 laying down harmonized conditions for the marketing of construction products and repealing Council Directive 89/106/EEC, CPD.

1. BUSINESS ENVIRONMENT OF THE CEN/TC 336

1.1 Description of the Business Environment

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

Economical factors

- ❖ The European bituminous binders market is decreasing in quantity, but increasing in quality and types of applications (road and industrial). The European oil refining Industry is restructuring to fit with the change in demand of fuels, which affects the bituminous binder production. This has resulted in an increase of trade, especially cross-border trade.
- ❖ New markets are emerging due, for example, to the need to extend and improve road infrastructures in Eastern Europe. Road construction is the prominent field of application for bituminous binders.
- ❖ The foreseen traffic increase and heavier traffic put higher constraints on asphalt pavements and road design and therefore higher performance requirements.
- ❖ As a result of this increase in user requirements, the binder performances must be better evaluated.
- ❖ Finally, for all the applications, specifying adequate performances contributes to demonstrate the value for money of the products, especially for modified and special bituminous binders.

Technical and environmental factors

- ❖ The European countries plan to build a new and common system of specifications to describe the paving bitumen (including modified special binders, cut-back bitumens, fluxed bitumens and bituminous emulsions). The ultimate target is a system based on resulting performance and not on prescriptive requirements whenever possible.
- ❖ Research, technology exchanges and finally, standardization are necessary to develop reliable test methods for assessing product performance and to ensure a higher harmonization level.
- ❖ Increasing emphasis on environmental and health aspects triggers the development of new materials and techniques, e.g. reduction of application temperatures, higher use of bituminous emulsions, introduction of renewable resource components, introduction of secondary materials, recycling and environmental sustainability aspects as part of the European Green Deal.

Legal factors

- ❖ Bituminous binders fall within the European regulation of the construction products.
- ❖ The CPR, which lays down the Basic Works Requirements, and ensures the free movement of the construction products within Europe, is relevant to paving bitumens (pure and modified), fluxed bitumens, cut-back bitumens and bituminous emulsions. The CPR, is in force since April

2011² and requires, for products covered by harmonized standards, to establish declaration of Performance (DoP) and to affix CE marking.

- ❖ In 1998, European Commission gave, to CEN/CENELEC, the mandate M/124 requesting the production of harmonized standards on road construction products. Harmonized standards (hEN) aim to define, for the construction products, a common technical language to express the performance of the essential characteristics expected by the mandate. Further to court cases, EC considered the harmonized standards as being part of the European legislation.
- ❖ The CEN/TC 336 presented four answers to mandate M/124:
 - ✓ CEN/TC 19/SC 1 reply of 2000-08-01;
 - ✓ CEN/TC 336 N022 modification of the response of 2001-06-21;
 - ✓ CEN/TC 336 N293 amendment to the answer to the mandate approved by CEN/TC 336 on 2009-05-14&15;
 - ✓ CEN/TC 336 N545 amendment to the answer to the mandate.

However the two amendments to the answer to the mandate have never been considered by the European Commission (the TC 336 received by the CEN consultant some objections regarding document CEN/TC 336 N545 from the CEN consultant in November 2017). So far only the document referenced CEN/TC 336 N22 was formally accepted by the commission (acceptance letter ENTRE/G5/si D(2001)-855390 dated 2001-12-03) and remains the reference for HAS consultants when assessing CEN/TC 336 standards candidate for harmonization. This document is outdated and does not reflect anymore the state of the art of assessment of performance.

TC 336 has drafted a new answer to the mandate in 2018 but it has not been transmitted to the European Commission because European Commission encouraged TC 336 to take a new approach in a form of drafting technical input to a Standardization Request aimed to replace mandate M/124. This technical input was dispatched to the European commission via CCMC on 2020-05-25 and could be considered by the WG in charge of Mandate M/124 to be set up under the CPR-Acquis process.

- ❖ The EC Regulation 1907/2006, REACH, (Registration, Evaluation, Authorisation and Restriction of Chemical substances) has required the registration of bitumen since 2010.
- ❖ Other regulations apply to bituminous binders as for all the chemical substances in Europe:
 - ✓ the legislation on substances in construction products as detailed in the EC web page (CP-DS: legislation on substances in construction products, i.e. EC website to identify all relevant regulations in the field of dangerous substances in construction products);
 - ✓ the Council Directive 98/83/EC of 3 November 1998 on the quality of water intended for human consumption;
 - ✓ potentially some national classification or labelling regulations.

Political factors

- ❖ The European Union trans-European Network project, TEN-T has the objective of allowing goods and people to circulate quickly and easily between Member States and assuring international connections over the 5 000 000 km of paved roads, out of which 65 100 km are motorways. It promotes the improvement of the major highway infrastructures needed by the internal market without frontiers.

² With some obligations only applicable from July, 1st, 2013

- ❖ The enlargement of the European Union has an effect upon the market.

1.2 Quantitative Indicators of the Business Environment

The following data present the consumption in Europe of the various bitumen grades, and the bituminous emulsions, covered by the CEN/TC 336 standardization action:

- The bitumen consumption in Europe is seasonal with some variations around the European average, country by country.
- Based on data publicly available on the site <https://data.un.org/> the total consumption of bitumen in Europe in 2020 is estimated between 15 and 20 million tons
- The total bitumen emulsion production in Europe is about 2 million tons in 2019.

Bituminous Emulsions Production in 2019 established by IBEF³ and available at <http://www.ibef.net/en/emulsions-2/key-figures/>.

2. BENEFITS EXPECTED FROM THE WORK OF THE CEN/TC

The CEN/TC 336 specifications standards describe the product characteristics which help in the selection of the most appropriate binder for a given application (product fit for purpose and intended use).

These standards also contribute to:

- ✓ enable the European internal market between countries for the sake of users, contractors, producers and authorities;
- ✓ comply with the CPR requirements;
- ✓ reduce the costs by the use of common test standards and product specifications;
- ✓ use common reference tools within European and trading countries.

3. PARTICIPATION IN THE CEN/TC 336

All the CEN national members are entitled to nominate delegates to the CEN Technical Committees and experts to the Working Groups, ensuring a balance of all interested parties. Participation as observers of recognised European or international organisations (such as stakeholders) is also possible under certain conditions.

Experts interested in participating in the CEN/TC 336 activities should contact their national standardization organisation. International organisations should contact the CEN.

³ IBEF: International Bitumen Emulsion Federation.

4. OBJECTIVES OF THE CEN/TC 336 AND STRATEGIES FOR THEIR ACHIEVEMENT

4.1 Defined objectives of the CEN/TC 336

Scope of the CEN/TC 336:

Terminology, methods of sampling, standardization of test and assessment methods, and specifications for bitumens and bituminous binders used for paving and industrial applications. Natural asphalts are not within the scope of CEN/TC 336.

Objectives of the CEN/TC 336:

The objective of the CEN/TC 336 is to develop and regularly update standardization documents (EN Standards, Technical Specifications and Technical Standards):

- ✓ as reference European standards for users, contractors, producers and authorities;
- ✓ to describe the bituminous binders characteristics;
- ✓ as performance related standards for bituminous binders for paving applications in compliance with the CPR requirements.

The CEN/TC 336 has taken into consideration the CPR Basic Works Requirements on hygiene, health and the environment in its product specification standards (by identifying the relevant Essential Characteristics and defining how to assess their performances) and the potential HSE concerns in its laboratory test methods.

The importance of addressing environmental requirement, emphasized by the commitment of the European Union to reach carbon neutrality by 2050, is recognized by TC 336 and work is on going to identify necessary standardization documents in order to support the transition in the bituminous binders sector.

4.2 Identified strategies to achieve the CEN/TC 336's defined objectives

The CEN/TC 336 requests the industry and administration involvement and contribution through representative organisations such as Eurobitume, EAPA, EWA, IBEF, FEHRL, CEDR, and RILEM to assist in the definition and assessment of the binder properties and performances. This participation is particularly useful to take the bitumen industry concerns into account, and all other stakeholders' considerations from the road industry, the contractors as well as the road administrations.

The CEN/TC 336 convenes its member a regular basis to take appropriate resolutions in conjunction with the progress of its work and uses the CEN Internal Balloting portal to collect the voting results of its members between two meetings. Since 2012 all documents, information and resolutions are shared through a dedicated CEN electronic platform. Referenced documents are archived in a library without limit of time.

Advisory Group

The CEN/TC 336 established an Advisory Group in 2000 to coordinate its activities with a limited number of attendees, but representing all the interested parties as far as possible.

The Advisory Group elaborates technical proposals and recommendations to the CEN/TC 336 as well as on the planning and steering of its activity.

Cooperation

The CEN/TC 336 coordinates its activity with other CEN Technical Committees whenever useful and cooperates with them to manage matters arising from the interface of their scopes, especially formal liaisons are established with:

- CEN/TC 227, Road materials. Road construction is the prominent field of application for bitumen and related products and the liaison with CEN/TC 227 is aimed at optimal tuning of the standards from both the Technical Committees.
- CEN/TC 254, Flexible sheets for water proofing.
- CEN/TC 350, Sustainability of construction works.
- CEN/TC 351, Construction products: assessment of release of dangerous substances.

The CEN/TC 336 maintains liaisons with external organisations for which an exchange of information is judged benefic for both parties: EAPA⁴, EWA⁵, IBEF⁶, Eurobitume⁷, FEHRL⁸, CEDR⁹ and RILEM¹⁰.

EAPA: <https://eapa.org/>

EWA: <https://www.ewa-europe.com/>

IBEF: <http://www.ibef.net/en/home/>

Eurobitume: <https://www.eurobitume.eu/home/>

FERL: <https://www.fehrl.org/>

CEDR: <https://www.cedr.eu/>

RILEM: <https://www.rilem.net/>

Some representative organisations have a major interest in the standards developed by CEN/TC 336:

- professional organisations: Eurobitume, EAPA, IBEF;
- authorities and research institutes: FEHRL, CEDR, RILEM.

4.3 Environmental aspects

According to the CEN/BT Resolution C91/2008, the CEN/TC 336 has to take into account the environmental aspects in its standards. However, this is only applicable to laboratory test methods by using the minimum quantities of products, solvents and energy sources to reduce the emissions in air and water, and the wastes.

⁴ EAPA: European Asphalt Pavement Association.

⁵ EWA: European Waterproofing Association.

⁶ IBEF: International Bitumen Emulsion Federation

⁷ Eurobitume: European Association of Bitumen Producers

⁸ FEHRL : Forum of European National Highway Research Laboratories

⁹ CEDR: Conference of European Directors of Road.

¹⁰ RILEM: Réunion Internationale des Laboratoires d'Essais et de Recherches pour les Matériaux et les Constructions.

5. FACTORS AFFECTING COMPLETION AND IMPLEMENTATION OF THE CEN/TC 336 WORK PROGRAM

The bitumens and bituminous binders are very complex substances per nature which have been characterised so far by empirical test methods. Test methods permit to assess the performance in product specification standards.

The CEN/TC 336 draws the attention to the fact that, before being implemented, performance related standards need to be validated against field performance in construction works by pilot trials or laboratory tests. This requires significant resources which, at present, are not always available.

Also, the CEN standardization rules require establishing precision for the new test methods and improving it for the existing ones. Pre-normative studies have therefore to be carried out to evaluate many influencing parameters which, again, require significant resources.

The success of the CEN/TC 336 standardization work is therefore conditioned by the support of the European research organisms.

TC 336 work on the product specifications candidate for citation in the Official Journal of the European Union (harmonized standards) is deeply affected by an obsolete accepted answer to the mandate M/124 which is not technically up-to-date and all efforts made since 2015 to solve this issue did fail due to the lack of flexibility induced by the CPR 305/2011.