



Hrvatsko asfaltno društvo



Croatian asphalt association

**Put ka specifikacijama temeljenim na
ponašanju – tehnički razvoji**

**The way to Performance Related
Specifications – Technical Developments**

Anja Sörensen, Eurobitume

**Međunarodni seminar ASFALTNI KOLNICI 2016
International seminar ASPHALT PAVEMENTS 2016**

Opatija, 06.–07. 04. 2016.

European Standardisation for Bitumen and bituminous binders

- CEN (Comité Européen de Normalisation)
- CEN/TC 336 „Bituminous Binders“

two Working Groups (WG):

WG 1 – Bituminous binders for paving

WG 2 – Fluxed bitumen and bituminous emulsions

- Construction Products Regulation (CPR)
[Regulation (EU) 305/2011 of the European Parliament and of the Council]



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European Standards for Bitumen and bituminous binders

- EN 12591 – Paving Grade Bitumen
- EN 13808 – Cationic Bituminous Emulsions
- EN 13924 – Special Bitumen
Part 1: Hard Paving Grade Bitumen
Part 2: Multigrade Paving Grade Bitumen
- EN 14023 – Polymer Modified Bitumen
- EN 15322 – Fluxed and Cut-back Bitumen



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Specifying Performance

Revision of EN 12591 – Paving Grade Bitumen

- CEN Enquiry Process:

April – June 2016

- Draft takes into account comments from 2014 Systematic Review Process as well as work within CEN/TC336 WG1



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Revision of EN 12591

- Moving towards viscosity testing with less impact on safety and hygiene:

The appropriate tables will be opened to use EN 13302 and EN 13702 instead of EN 12595 and EN 12596 (which remain references).

- Additional viscosity graded bitumen grade (tables 3A and 3B)

Draft



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Specifying Performance

Revision of EN 12591 – New Annex C

- Reported Values which shall be given by the supplier for:

Low temperature behaviour after long term ageing
(RTFOT + PAV)

Temperature sensitivity

- A Reported Value is described as a value which shall be given by the supplier of the bituminous binder.

Draft



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Specifying Performance

Revision of EN 12591 – New Annex C

- Low temperature behaviour after long term ageing:

Long term ageing: RTFOT+PAV

BBR testing on long term aged binders

$T(S = 300 \text{ MPa})$ and

$T(m = 0,3)$

Draft



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Specifying Performance

Revision of EN 12591 – New Annex C

- Addressing temperature sensitivity:

DSR testing on short term aged binders (RTFOT)

T_1 ($G^* = 5$ MPa) and respective phase angle
[8 mm plate]

T_2 ($G^* = 50$ kPa) and respective phase angle
[25 mm plate]

Draft



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Specifying Performance

Revision of EN 14023 - PMB

- Systematic Review outcome is revision
- Pre Work Item available
- Expected timing: draft for CEN Enquiry mid 2017



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EN Test Method Standards

- Conventional test methods
e.g. Softening Point RaB, Needlepenetration
- Complex, rheological test methods / equipment
e.g. BBR, DSR



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Specifying Performance

CEN Data Collection

- Investigating the suitability of test methods
- 167 data sets – more the 68.000 data points
- Framework given in CEN/TR 15352
- Simple tests for simple binders; complex binders can better addressed with more complex, rheological tests.



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CEN Data Collection

- Eurobitume's TF Data Collection repeated the correlation checks

Confirmation of the vast majority of statements in the EB Position Paper

19 differences for 9 test methods / calculations were identified



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CEN Data Collection

- Corrections of calculations (formulas)

The detected errors only effected the calculation results of two data sets.

- Formulas to calculate T1 and T2 were added

Additional value for EB members with regards to revisions of product standards.



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CEN Data Collection

- Eurobitume's Position Paper on Data Collection can be downloaded free of charge at www.eurobitume.eu



- Report on CEN Data Collection available soon.



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Specifying Performance

Items on the agenda

- Ageing conditions (e.g. RTFOT, PAV)

Are they suitable and representative for all bituminous binders?

- Special bitumen

is there a need for additional specifications?

- Low temperature behaviour

Which test methods address the low temperature properties of bituminous binders more appropriately?



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Summary

- Related to the Construction Products Regulation (**CPR**), which requires to address the performance of the construction works.
- CEN Enquiry for **prEN 12591rev** April – June 2016.
- Work on revision of **EN 14023** started.
- **DSR** will become a standard equipment for bitumen testing.



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