

Zpráva o činnosti TC336/WG2 za rok 2025

Zpráva shrnuje informace ze zasedání TC336/WG2 v roce 2025 a informace týkající se dění na národní úrovni.

Součástí zprávy jsou tyto body:

1. Informace z CEN/TC336/WG2
2. Informace týkající se národní úrovně

1. Informace z CEN TC/336/WG2 - obecně

V roce 2025 se uskutečnila dvě zasedání TC336/WG2. Jarní zasedání (53.) proběhlo v hybridní formě v dubnu 07.4.-08.4.2025 a podzimní zasedání (54.) proběhlo v hybridní formě v říjnu 13.10-14.10.2025.

Účast: Zasedání se účastnil zástupce TC336/WG2 za ČR.

Odstoupivší convenor Laurent Porot bude dále pokračovat ve své funkci. Mandát vyprší v roce 2027 (je šestiletý).

Hlavní náplní roku 2025 byla diskuze o nové podobě mandátu respektive standardizačního požadavku (Sreq) a nové podobě EN 13808.

Byly navrženy členové do SG pro silniční materiály reprezentující TC227, TC336 a TC254 (za TC 336: Moglia, Lancaster, Porot, Koudelka, Schaffner). Nově je jedná o SG23.

Členské státy mohly navrhnout své reprezentanty v SG. Anja Sorensen (Germany), Bruce De Laporte (France, Eurobitume). Nikdo další z WG2, kdo byl přítomný na podzimním jednání, nevěděl, kdo jsou navrženi reprezentanti z jejich zemí.

Práce v SG bude probíhat především v letech 26-28. Konečné období pro publikace hEN je 2030-2031. Sreq vyprší v 2032.

SG 15 (Cement) finalizovala specifikaci podle CPR 2024. Aktuální stav nový Sreq je vidět níže

CPR Acquis Expert Groups - priorities



Normalizace – specifikace pro transparentní pojiva

Itálie navrhne CEN, aby došlo ke specifikaci transparentních pojiv, která aktuálně nejsou standardizována. Jsou uvedeny důvody, proč by se tak mělo stát (vzhled měst, snížení povrchové teploty, bezpečnost aj.) a jsou uvedeny příklady výrobků, použití a možností specifikace (standardní metody + barva, rozlišení pojiv od dalších řešení pro barevné povrchy aj.).

Table 1 — Framework specifications for clear binders – Properties applying to all clear binders

PROPERTY		TEST METHOD	UNIT	Classes for all Clear Binders							
				0	1	2	3	4	5	6	7
Penetration at 25 °C		EN 1426	0.1 mm	TBR ^b	20-35	35-50	50-70	70-100	160-200		
Softening Point		EN 1427	°C	TBR ^b	≥ 40	≥ 45	≥ 50	≥ 55	≥ 60	≥ 65	≥ 70
Cohesion ^c	Force ductility ^c (50 mm/min traction) Or	EN 13589 followed by EN 13703	J/cm ²	NR ^a	TBR ^b	≥ 3 at 5 °C	≥ 2 at 5 °C	≥ 1 at 5 °C	≥ 2 at 10 °C	≥ 3 at 10 °C	
	Tensile test ^c (100 mm/min traction)	EN 13587 followed by EN 13703	J/cm ²	NR ^a	TBR ^b	≥ 3 at 5°C	≥ 2 at 5 °C	≥ 1 at 5 °C	≥ 3 at 10 °C		
Color	Color ASTM	ASTM D 1500		NR ^a	TBR ^b	≤ 3	≤ 5	≤ 7			
	Gardner Color (50% wt in toluene)	EN ISO 4630		NR ^a	TBR ^b	≥ 10; ≤ 14		...			
Resistance to hardening ^d	Retained Penetration	EN 12607-1	%	NR ^a	TBR ^b	≥ 50	≥ 40	≥ 45	≥ 50	≥ 55	≥ 60
	Increase in Softening point		°C	NR ^a	TBR ^b	≤ 8	≤ 10	≤ 12			
	Change of mass ^e		%	NR ^a	TBR ^b	≤ 0,3	≤ 0,5	≤ 0,8	≤ 1,0		
Flash Point		EN ISO 2592	°C	TBR ^b	≥ 250	≥ 235	≥ 220				
Solubility ^f		EN 12592	%	TBR ^b	≥ 99,0						

^a NR. No Requirement may be used when there are no regulations or other regional requirements for the property in the territory of intended use.

^b TBR. To Be Reported may be used when there are no regulations or other regional requirements for the property in the territory of intended use, but the property has been found useful to describe clear binders.

^c One cohesion method shall be chosen based on end application.

^d The main test is the RTFOT at 163 °C. For some highly viscous clear binders where the viscosity is too high to provide a moving film it is not possible to carry out the RTFOT at the reference temperature of 163 °C. In such cases the procedure shall be carried out at 180 °C in accordance with EN 12607-1.

^e Change of mass can be positive or negative.

^f The appropriate solvent has to be declared by the supplier.

The properties in Table 1 shall be specified for all clear binders listed in this table. They are associated with regulatory or HSE requirements and shall be included in all specifications.

Table 2 — Framework specifications for clear binders – Additional properties

PROPERTY	TEST METHOD	UNIT	Classes for the additional properties of clear binders							
			0	1	2	3	4	5	6	7
Fraass Breaking Point	EN 12593	°C	NR ^a	TBR ^b	≤ - 5	≤ - 7	≤ - 10	≤ - 12	≤ - 15	≤ - 18
Elastic recovery @25°C	EN 13398	%	NR ^a	TBR ^b	≥ 70	≥ 50	≥ 20			
Drop in softening point after EN 12607-1	EN 1427	°C	NR ^a	TBR ^b	≤ 2	≤ 5				
Elastic recovery at 25 °C after EN 12607-1	EN 13398	%	NR ^a	TBR ^b	≥ 70	≥ 50	≥ 20			
Storage stability ^c Difference in softening point	EN 13399 EN 1427	°C	NR ^a	TBR ^b	≤ 5	≤ 2				
Storage stability ^c Difference in penetration	EN 13399 EN 1426	0,1 mm	NR ^a	TBR ^b	≤ 9	≤ 5				

^a NR. No Requirement may be used when there are no requirements for the property in the territory of intended use.

^b TBR. To Be Reported may be used when there are no regulations or other regional requirements for the property in the territory of intended use, but the property has been found useful to describe clear binders.

^c Storage conditions of the polymer modified clear binder shall be given by the supplier. Homogeneity is necessary for clear binders. The tendency of clear binders to separate during storage may be assessed by the storage stability test (see EN 13399).

NOTE The following data may be given by the supplier of the Clear binders in the product data sheet:

- handling temperatures;
- minimum storage and pumping temperatures;
- maximum and minimum mixing temperatures; for comparison purposes, EN 13302 or EN 13702-1 should be used;
- density (see EN 15326).

The properties in Table 2 are additional properties, which are non-mandated, but have been found useful in some countries to describe clear binders.

V CEN TC336 (CEN podporuje tvorbu této nové specifikace viz diskuze WG1 v Lisabonu) byl připraven návrh specifikace (dokument N1355). V tomto dokumentu se vychází ze specifikace silničních asfaltů (EN 12591) a PMB (EN 14023) a je doplněno posouzení barvy.

Z těchto pojmů se vyrábějí emulze a je proto důležité, aby zástupce WG2 participoval na tvorbě předpisu.

Zatím se neuvažuje s tím, že by specifikace byla harmonizovaná. Existuje nicméně obava, že by mohla být otevřena Pandořina skříňka s jinými druhy materiálů pro výrobu materiálů pro konstrukci vozovek viz diskuze týkající se náplně TC336 (scope).

Normalizace – specifikace pro asfaltové emulze

Po jednání ve Vídni byla přehodnocen návrh z TG hEN týkající se asfaltových emulzí (N1396) po prezentaci zástupce ČR, který v prezentaci uvedl složitost rozdělení specifikací respektive uvedl, že specifikace pro KAE by měla daleko více základních charakteristik na rozdíl od jiných harmonizovaných výrobků (viz příloha této zprávy).

V následném hlasování bylo schváleno, že z hlediska pojmů budou základní harmonizované charakteristiky vztaženy jen k pojmům po stabilizaci, tj. EN 13074-1,2. Ostatní druhy pojmů budou přesunuty do neharmonizované specifikace. Níže jsou uvedeny schválené základní charakteristiky (EN 13075-2 bude rovněž vyjmuta)

Harmonized part (based on WG 2 proposal)

Essential characteristics (including proxies, if any)	Test Method considered	RATIONAL
Residual Binder content	Residual binder by distillation (EN 1431)	Economic Impact / Emulsion labelling
Binder content	Azeotropic distillation (EN 1428)	Economic Impact / Emulsion labelling
Water content	Drying balance (EN 16849)	Economic Impact / Emulsion labelling
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Breaking Value	Mineral filler method (EN 13075-1)	Emulsion labelling + Directly linked to the type of use so absolutely required to ensure performance on the road
Fines mixing Time	Fines mixing time (EN 13075-2)	
Mixing Stability	Stability with cement (EN 12848)	

Service Life Durability of consistency at intermediate service temperatures	EN 13074-1 + EN 13074-2 + PEN
Service Life Durability of consistency at elevated service temperatures	EN 13074-1 + EN 13074-2 + SP
Service Life Durability of Impact cohesion	EN 13074-1 + EN 13074-2 + VIALIT Pendulum
Service Life Durability of Tensile cohesion	EN 13074-1 + EN 13074-2 + Force Ductility
Service Life Durability of Resistance to flow and deformation	EN 13074-1 + EN 13074-2 + Elastic Recovery

Neharmonizovaná specifikace bude k dispozici cca do tří let, tj. v roce 28/29. Trh bude nutné připravit na dva dokumenty pomocí nichž můžou být charakterizovány dnešní výrobky typu silniční asfalt, emulze PMB aj.

Otázkou zůstává, jaké dokumenty budou použity pro deklaraci vlastností mimo harmonizovanou sféru. Byl zmíněn „certificate of quality“. V českém kontextu se může jednat o prohlášení o shodě.

Normalizace – cPCR

Bylo navrženo, aby byly připraveny dva dokumenty, přičemž jeden se bude věnovat asfaltu (nejjednodušší varianta) a druhý bude věnován emulzím a PMB. Problematika je velmi složitá např. vzhledem k povinným částem C a D v EN 15804+A2, ale emulze jako takové nejsou v některých případech oddělitelné od asfaltové směsi (např. spojovací postřiky). Uvažuje se, že by se mohlo jednat o výjimku a emulze by se posuzovaly po bránu (gate) a nikoli po odstranění. Problém s výjimkami je však u materiálů obsahující biogenní uhlík.

Normalizace – uvolňování nebezpečných látek

Další klíčovou otázkou bude způsob charakterizace chování při uvolňování nebezpečných látek (z výrobku při jeho konečném použití). Není jisté, jak se toto bude týkat výrobků pod TC336.

Pokud nebude moci být uvolňování nebezpečných látek charakterizováno, tak se použije metoda v EN 17844:2023 (CEN/TC 351).

2. Informace týkající se národní úrovně

V roce 2025 se dne 22.05.2025 konalo zasedání TNK 134 (Asfalty a asfaltová pojiva). Zde byly prezentovány informace z jednání TC336/WG2, které uvedl vedoucí TNK 134.

V roce 2025 proběhlo 60. a 61. jednání Týmu 7 pro asfaltová pojiva a asfaltové emulze. Během jednání byly předneseny informace z jednání TC336/WG2 i TC336. Prezentované informace jsou uvedeny v zápisu z jarního zasedání TC336/WG2, které se konalo v dubnu 2025.

Na národní úrovni probíhá revize TP 147 – Užití geosyntetik v konstrukci vozovky. V tomto TP jsou uvedeny druhy KAE, které nejsou uvedené v současné verzi ČSN 73 6121:2021. Z toho důvodu by se měla udělat revize tohoto dokumentu.

Na národní úrovni se začala diskuse o revizi ČSN 73 6132. Informace byly prezentované na 61. jednání týmu 7. Během revize dochází především k racionalizaci požadavků na některé typy KAE vzhledem k jejich zamýšlenému použití.

V Kolíně, dne 2. prosince 2025

Ing. Tomáš Koudelka
Gestor za TC336/WG2

Future specification for bituminous emulsions (TG within TC336/WG2)

Tomáš Koudelka 13. 10. 2025, 54th meeting in Vienna

Summary of the current and past situation

Current EN 13808:2013

1 Scope

This European Standard specifies the requirements for performance characteristics of cationic bituminous emulsion classes which are suitable for use in the construction and maintenance of roads, airfields and other paved areas.

This European Standard applies to emulsions of bitumen, or of fluxed bitumen, or of cut back bitumen and to emulsions of polymer modified bitumen, or of polymer modified fluxed bitumen, or of polymer modified cut-back bitumen, which also includes latex modified bituminous emulsions.

Within Europe several types of cationic bituminous emulsions are used. Depending on traditional practices, different binder contents may be used for the same purpose. When designing a specification for a particular application, care should be taken to make class selections which are compatible and realistic.

Current EN 13808:2013

			Performance Classes for the technical requirements of cationic bituminous emulsions												
Technical requirements	Document	Unit	Class 0	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6	Class 7	Class 8	Class 9	Class 10	Class 11	Class 12
Binder content or Residual binder after distillation ^c	EN 1428 ^a or EN 1431 ^b EN 1431	% m/m % m/m			< 38 < 38 (C35)	38 to 42 ≥ 38 (C40)	48 to 52 ≥ 48 (C50)	53 to 57 ≥ 53 (C55)	58 to 62 ≥ 58 (C60)	63 to 67 ≥ 63 (C65)	65 to 69 ≥ 65 (C67)	67 to 71 ≥ 67 (C69)	≥ 69 ≥ 69 (C70)	≥ 71 ≥ 71 (C72)	
Breaking behaviour															
Breaking value (Forshammer filler)	EN 13075-1	None			< 110	70 to 155	110 to 195	> 170	-	-	-	-	-	-	
or Fines mixing time	EN 13075-2	s			-	-	-	-	> 90	≥ 180	≥ 300	-	-	-	
or Mixing stability with cement	EN 12848	g			-	-	-	-	-	-	-	> 2	≤ 2	-	
Residue on sieving - 0,5 mm sieve	EN 1429	% m/m			≤ 0,1	≤ 0,2	≤ 0,5	-	-	-	-	-	-	-	
Viscosity															
Efflux time 2 mm at 40 °C	EN 12846-1	s	NR		≤ 20	15 to 70	40 to 130	-	-	-	-	-	-	-	
or Efflux time 4 mm at 40 °C	EN 12846-1	s	NR		-	-	-	5 to 70	40 to 100	-	-	-	-	-	
or Efflux time 4 mm at 50 °C	EN 12846-1	s	NR		-	-	-	-	-	5 to 30	≥ 25	-	-	-	
or Dynamic viscosity at 40 °C ^d	EN 13302	m Pa.s	NR		-	-	-	-	-	-	-	≤ 30	20 to 300	100 to 1000	> 1000
Adhesivity with reference aggregate	EN 13614	% coating	NR		≥ 75	≥ 90	-	-	-	-	-	-	-	-	
Penetration power	EN 12849	Min	NR	DV	-	-	-	-	-	-	-	-	-	-	
Oil distillate content ^e	EN 1431	% m/m	NR		≤ 2,0	≤ 3,0	≤ 5,0	≤ 8,0	≤ 10,0	5 to 15	> 15	-	-	-	
Residue on sieving - 0,16 mm sieve	EN 1429	% m/m	NR		≤ 0,25	≤ 0,5	-	-	-	-	-	-	-	-	
Efflux time at 85 °C	EN 16345	s	NR		25 to 45	20 to 100	-	-	-	-	-	-	-	-	
Storage stability by sieving (7 d storage) – 0,5 mm sieve	EN 1429	% m/m	NR		≤ 0,1	≤ 0,2	≤ 0,5	-	-	-	-	-	-	-	
Settling tendency (7 d storage)	EN 12847	% m/m	NR		≤ 5	≤ 10	-	-	-	-	-	-	-	-	

We are free to choose any combination.

Current EN 13808:2013

Usually a national annex or a national document specifies requirements according to the intended use.

FR EN 13808, Annex NA (France)

	Essential characteristics to select for the declaration of performance within the CE marking (which must appear on the CE label).
	Additional characteristics specified at the national level.
	Other non-specified characteristics but which are supposed to be measured by the manufacturer as part of his production control.

Application		Spreading						
Type		CAS			ESU			IMP
Application examples		Bond coats, sealcoats			Surface dressing, fog seal			impregnating coating
Characteristics describing the emulsion as such								
Binder content, in %	EN 1428 or EN 1431 or EN 16849	C 35 to C 50 (2 to 4)	C 55 to C 60 (5 to 6)	C 65 to C 69 (7 to 9)	C 60 (6)	C 65 to C 67 (7 to 8)	C 69 to C 72 (9 to 11)	C 35 to C 60 (2 to 6)
Residue on sieving for a 0,5 mm sieve ^a , in %	EN 1429	≤ 0,1 (2)	≤ 0,1 (2)	≤ 0,1 (2)	≤ 0,1 (2)	≤ 0,1 (2)	≤ 0,1 (2)	≤ 0,1 (2)
Residue on sieving for a 0,16 mm sieve ^{a,b} , in %	EN 1429	≤ 0,25 (2) or ≤ 0,5 (3)	≤ 0,25 (2) or ≤ 0,5 (3)	≤ 0,25 (2) or ≤ 0,5 (3)	≤ 0,25 (2) or ≤ 0,5 (3)	≤ 0,25 (2) or ≤ 0,5 (3)	≤ 0,25 (2) or ≤ 0,5 (3)	≤ 0,25 (2) or ≤ 0,5 (3)
Storage stability by residue on sieving (7 days) - 0,5 mm sieve, in %	EN 1429	≤ 0,2 (3)	≤ 0,2 (3)	≤ 0,2 (3)	≤ 0,2 (3)	≤ 0,2 (3)	≤ 0,2 (3)	≤ 0,2 (3)
Breaking index	EN 13075-1	< 110 (2) or 70 to 155 (3) or 110 to 195 (4)	< 110 (2) or 70 to 155 (3) or 110 to 195 (4)	< 110 (2) or 70 to 155 (3) or 110 to 195 (4)	< 110 (2) or 70 to 155 (3)	< 110 (2) or 70 to 155 (3)	< 110 (2) or 70 to 155 (3)	110 to 195 (4) or > 170 (5)
Mixing stability with cement, in g	EN 12848							
2 mm at 40°C Efflux time, in s or 4 mm at 40°C	EN 12846-1	15 to 70 (3)	15 to 70 (3) or 40 to 130 (4)	40 to 130 (4) or 5 to 70 (5)	40 to 130 (4)	40 to 130 (4) or 5 to 70 (5)	5 to 70 (5) or 40 to 100 (6)	≤ 20 (2) or 15 to 70 (3)
Water effect on adhesivity	EN 13614				≥ 75 (2) or ≥ 90 (3)	≥ 75 (2) or ≥ 90 (3)	≥ 75 (2) or ≥ 90 (3)	
Characteristics describing the recovered binder (according EN 13074-1) from the bituminous emulsion ^{c,d}								
Penetration at 25 °C, in 0,1 mm	EN 1426	Classes from the Table 4 in this European standard apply						
Softening Point, in °C	EN 1427	Classes from the Table 4 in this European standard apply			DV (1) for « F » type of emulsions ^f			
Cohesion by pendulum test ^e in J/cm ²	EN 13588	Classes from the Table 4 in this European standard apply						
Characteristics describing the stabilized binder (according EN 13074-1 followed by de EN 13074-2) from the bituminous emulsion ^d								
Penetration at 25 °C, in 0,1 mm	EN 1426				Classes from the Table 4 in this European standard apply			
Softening Point, in °C	EN 1427				Classes from the Table 4 in this European standard apply			
Cohesion by pendulum test ^e , in J/cm ²	EN 13588				Classes from the Table 4 in this European standard apply			
Characteristics related to the durability of the bituminous binder recovered from the emulsion - to test after a long term ageing conditioning on the stabilized binder (EN 13074-1 + EN 13074-2 + EN 14769)								
Softening Point, in °C	EN 1427							

^a As on bituminous emulsions the sieve residue result is highly dependent on the quality of the sample taken, the utmost care should be taken when sampling the products in accordance with EN 58

^b Historically, for the 0,16 mm residue on sieving characteristic, the Class 2 (≤ 0,25 %) is selected. However, for some specific products, the nature of the binder used in the emulsion (for example hard bitumens or polymer modified bitumens) can make it difficult to comply with this Class 2. Subject to compliance with the other characteristics of the emulsion (in particular the efflux time), the use of Class 3 (≤ 0,5 %) is possible for the 0,16 mm residue on sieving.

^c Tests that can be carried out on the initial binder (before emulsification).

^d In the technical data sheet, the emulsion manufacturer should indicate the reheating conditions (temperature and duration) to be applied to the recovered and stabilized binders when preparing samples for subsequent testing. If no guidance is provided by the manufacturer, the heating conditions are those indicated in standards EN 13074-1 and EN 13074-2.

^e For polymer or latex modified emulsions.

^f Emulsions containing a proportion of more than 3 % (m/m) flux.

An example of how to choose relevant characteristics.

Proposal of EN 13808

For the future revision of **EN 13808** (*Specifications of bituminous emulsions*), WG 2 is in favor of reorganizing the emulsion specifications according to the intended uses and requested the TG “*hEN*” to promote this position at Acquis TG 23 p12 when preparing the Standardization Request.

Commentary: The intention of this decision was to prevent choosing irrelevant essential characteristics, which is a good thing.

EN 13808 and „intend use“

- Emulsion for spreading
 - Tack coat, prime coat, fog seal
 - Surface dressing
- Emulsion for mixtures
 - Micro and slurry surfacing
 - Asphalt concrete
 - Cold mixtures for patching
 - Emulsions for recycling

Main type of
emulsions

TG Harmonized standards

Input for harmonization from the TG



European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung



« Bitumens and bituminous binders »	CEN/TC 336
Date: 2025-09-26	Doc. Number: N 1396
Chair: Olivier MOGLIA CENT/TC 336 Chairperson Direct line : +33 (0)1 41 35 32 75 Mobil : +33 (0)6 21 26 46 17 E-mail to : olivier.moglia@totalenergies.com	Your contact : Bernard SCHAFFNER CEN/TC336 Secretary Mobil : + 33 (0)6 65 34 21 14 E-mail to : bernard.schaffner@bnelip.fr

Harmonized:

EN 12591

EN 14023

EN 13924-1

EN 13808

EN 15322

TG hEN Input Proposal on hEN for CPR Acquis

List of EC - Version 2025-09-24

CALL FOR REVIEW

Dear CEN/TC 336 members,

I would like hereby to draw your attention to the completion of one key task of the Task-Group "*harmonized standards*" (TG "*hEN*") that prepared a proposal consisting an input for our future Standardization Request (SReq) revising **Mandate M/124**.

Harmonized part EN 13808, emulsions

Essential characteristics (including proxies, if any)	Test Method considered	RATIONAL
Residual Binder content	Residual binder by distillation (EN 1431)	Economic Impact / Naming
Binder content	Azeotropic distillation (EN 1428)	Economic Impact / Naming
Water content	Drying balance (EN 16849)	Economic Impact / Naming
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Breaking Value	Mineral filler method (EN 13075-1)	Naming + Directly linked to the type of use so absolutely required to ensure performance on the road
Fines mixing Time	Fines mixing time (EN 13075-2)	
Mixing Stability	Stability with cement (EN 12848)	

It was proposed to
remove EN 13075-2 (52th
meeting in London)

TG hEN Input Proposal on hEN for CPR Acquis

List of EC - Version 2025-09-24

CALL FOR REVIEW

Reminder, discussion about EN 13075-2

Spreading types (EN 13075-1)

B2-B5	<u>Spreading emulsions</u> CAS type	Tack coat	No <u>exposure to traffic</u>
B2-B5	<u>Spreading emulsions</u> ESU type	Surface dressing, fogseal, patch technology	Exposure to traffic and to weather conditions
B4-B5	<u>Impregnating emulsions</u> IMP type	prime <u>coat</u>	No exposure to traffic, applied on unbound materials

Note: Does not have to necessarily cover all types of emulsions/breaking categories

**Future specification for bituminous emulsions
(TG within TC336/WG2)**

Reminder, discussion about EN 13075-2

MIX types (EN 12848, category B0 or EN 13075-1)

B0	MBCF	Microsurfacing	Exposure to traffic and to weather conditions
B4-B5	BBE	Asphalt concrete with bituminous emulsions	Exposure to traffic and to weather conditions
B4-B5	GE	Grave emulsions (asphalt mixtures, overlayed)	No exposure to traffic, mixture is to be overlayed
B2-B3	ENS	Repair mixtures (storeble mixtures)	Exposure to traffic and to weather conditions
B9-B10	REC	Recycling mixtures	Can have a softening effect/rejuvenating effect

Note: Does not have to necessarily cover all types of emulsions/breaking categories

**Future specification for bituminous emulsions
(TG within TC336/WG2)**

Reminder, binders (emulsions and cutbacks)

Proposal of how to define each binder state (Harmonized part)

Methods to treat binders from emulsions (emulsion's residue), version 04.10.2024

	<u>Essential characteristics</u>	<u>Procedure</u>	<u>Note - cutbacks</u>
EN 13074-1	<u>Initial binder state</u>	EN 1426	<u>Cutbacks, FV (Fm – destillation)</u>
	<u>Initial binder state</u>	EN 1427	
	<u>Initial binder state</u>	EN 12593	
	<u>Initial binder state</u>	EN 13588	
	<u>Initial binder state</u>	EN 13589	
	<u>Initial binder state</u>	EN 13398	
EN 13074-1,2	<u>Service life</u>	EN 1426	<u>Cutbacks</u>
	<u>Service life</u>	EN 1427	
	<u>Service life</u>	EN 12593	
		EN 13302	
		EN 12595	
	<u>Service life</u>	EN 13588	
	<u>Service life</u>	EN 13589	
	<u>Service life</u>	EN 13398	
EN 13074-1,2+EN14769	<u>Long term</u>	EN 1426	<u>Cutbacks</u>
	<u>Long term</u>	EN 1427	
	<u>Long term</u>	EN 12593	
		EN 13302	
		EN 12595	
	<u>Long term</u>	EN 13588	
	<u>Long term</u>	EN 13589	
	<u>Long term</u>	EN 13398	

**Future specification for bituminous emulsions
(TG within TC336/WG2)**

Addition of EN 1431 after London

EN 1431

Essential characteristics	
Residual binder after destillation	Consistency at intermediate service temperatures
Residual binder after destillation	Consistency at elevated service temperatures
Residual binder after destillation	Hardnes (Brittleness at low service temperatures)
Residual binder after destillation	Impact cohesion
Residual binder after destillation	Tensile cohesion
Residual binder after destillation	Resistance to flow and deformation

EN 13074-1

Essential characteristics	Procedure	Note - cutbacks
Initial binder state	EN 1426	Cutbacks, FV (Fm – destillation)
Initial binder state	EN 1427	
Initial binder state	EN 12593	
Initial binder state	EN 13588	
Initial binder state	EN 13589	
Initial binder state	EN 13398	

EN 13074-1,2

Service life	Durability of consistenci at intermediate temperature	EN 1426	Cutbacks
Service life	Durability of consistenci at elevated Service temperature	EN 1427	Cutbacks
Service life	Hardnes (Brittleness at low service temperatures)	EN 12593	Cutbacks
		EN 13302	
		EN 12595	
Service life	Durability of Impact Cohesion	EN 13588	
Service life	Durability of Tensile Cohesion	EN 13589	
Service life	Durability of resistance to flow and deformation	EN 13398	

EN 13074-1,2+EN14769

Long term	Durability of consistenci at intermediate temperature	EN 1426	Cutbacks
Long term	Durability of consistenci at elevated Service temperature	EN 1427	Cutbacks
Long term	Hardnes (Brittleness at low service temperatures)	EN 12593	Cutbacks
		EN 13302	
		EN 12595	
Long term	Durability of Impact Cohesion	EN 13588	
Long term	Durability of Tensile Cohesion	EN 13589	
Long term	Durability of resistance to flow and deformation	EN 13398	

Harmonized parameters (not completely in the proposal though)

Emulsion	Residual binder and oil destilate content	EN 1431
Emulsion	Binder content	EN 1428
Emulsion	Water content	EN 16849
Emulsion	Breaking value	EN 13075-1
Emulsion	Fines mixing time	EN 13075-2
Emulsion	Mixing stability	EN 12848
Residual binder after destillation	Consistency at intermediate service temperatures	EN 1426
Residual binder after destillation	Consistency at elevated service temperatures	EN 1427
Residual binder after destillation	Impact cohesion	EN 13588
Residual binder after destillation	Tensile cohesion	EN 13589
Residual binder after destillation	Resistance to flow and deformation	EN 13398
Initial binder state	Consistency at intermediate service temperatures	EN 1426
Initial binder state	Consistency at elevated service temperatures	EN 1427
Initial binder state	Impact cohesion	EN 13588
Initial binder state	Tensile cohesion	EN 13589
Initial binder state	Resistance to flow and deformation	EN 13398
Service life	Durability of consistenci at intermediate temperature	EN 1426
Service life	Durability of consistenci at elevated Service temperature	EN 1427
Service life	Durability of Impact Cohesion	EN 13588
Service life	Durability of Tensile Cohesion	EN 13589
Service life	Durability of resistance to flow and deformation	EN 13398
Long term	Durability of consistenci at intermediate temperature	EN 1426
Long term	Durability of consistenci at elevated Service temperature	EN 1427
Long term	Durability of Impact Cohesion	EN 13588
Long term	Durability of Tensile Cohesion	EN 13589
Long term	Durability of resistance to flow and deformation	EN 13398

EN 1431 was mising
in the proposal (52th
meeting in London)

Fraass (EN 12593) no
longer relevamt

Compilation of parameters given in:

TG hEN Input Proposal on hEN for CPR Acquis

List of EC - Version 2025-09-24

CALL FOR REVIEW

A way forward?

Surface dressing emulsions (an example)

What is the issue?

Emulsion	Residual binder and oil destilate content	EN 1431	?
Emulsion	Binder content	EN 1428	
Emulsion	Water content	EN 16849	
Emulsion	Breaking value	EN 13075-1	
Emulsion	Fines mixing time	EN 13075-2	
Emulsion	Mixing stability	EN 12848	

How are we going to choose the method and classes?

I can imagine rather non-relevant characteristics than relevant ones.

Surface dressing emulsions, relevant characteristics

Emulsion	Residual binder and oil destilate content	EN 1431	
Emulsion	Binder content	EN 1428	
Emulsion	Water content	EN 16849	
Emulsion	Breaking value	EN 13075-1	
Emulsion	Fines mixing time	EN 13075-2	
Emulsion	Mixing stability	EN 12848	
Residual binder after destillation	Consistency at intermediate service temperatures	EN 1431	
Residual binder after destillation	Consistency at elevated service temperatures	EN 1431	
Residual binder after destillation	Impact cohesion	EN 1431	
Residual binder after destillation	Tensile cohesion	EN 1431	
Residual binder after destillation	Resistance to flow and deformation	EN 1431	
Initial binder state	Consistency at intermediate service temperatures	EN 1426	
Initial binder state	Consistency at elevated service temperatures	EN 1427	
Initial binder state	Impact cohesion	EN 13588	
Initial binder state	Tensile cohesion	EN 13589	
Initial binder state	Resistance to flow and deformation	EN 13398	
Service life	Durability of consistenci at intermediate temperature	EN 1426	
Service life	Durability of consistenci at elevated Service temperature	EN 1427	
Service life	Durability of Impact Cohesion	EN 13588	
Service life	Durability of Tensile Cohesion	EN 13589	
Service life	Durability of resistance to flow and deformation	EN 13398	
Long term	Durability of consistenci at intermediate temperature	EN 1426	
Long term	Durability of consistenci at elevated Service temperature	EN 1427	
Long term	Durability of Impact Cohesion	EN 13588	
Long term	Durability of Tensile Cohesion	EN 13589	
Long term	Durability of resistance to flow and deformation	EN 13398	

EN 1431, EN 13075-2
and EN 12848 are
probably not relevant

But what about the
rest?

How to specify to
satisfy everybody?

+

Difference between
modified and
unmodified emulsions

Residual binders

- EN 13074-1
 - Close to the initial binders
- EN 13074-1,2
 - Correspond to 1 or 2 years in service
- EN 13074-1,2 + EN 14769
 - Not much experience

Perf. Specs. for Bit. Emulsions in Europe
How to improve the present situation?

Bernard Eckmann (Eurovia) in the name of IBEF

26. – 27. November 2019, České Budějovice

Motto: Spirit of Don Quixote

Assumption?

Tack coat, prime coat, cold in place recycling, fog seal?

Patchmatic, cold mixtures for patching?

Durability of a
two layer
microsurfacing
up to 9 years (CZ)

Durability of a two
layer surface
dressing up to 8
years (CZ)

Asphalt concrete.

Examples, relevant characteristics?

		Surface dressing, microsurfacing	Asphalt mixtures	Tack coat, prime coat, cold recycling
Essential characteristics applicable to recovered binders	Potential test method			
Recovered binders	EN 13074-1			
Consistency at intermediate service temperatures	EN 1426	X	X	X
Consistency at elevated service temperatures	EN 1427	X	X	X
Impact cohesion	EN 13588	X		X
Tensile cohesion	EN 13589		X	
Resistance to flow and deformation	EN 13398	X	X	X
Stabilized binders	EN 13074-1,2			
Consistency at intermediate service temperatures	EN 1426	X	X	
Consistency at elevated service temperatures	EN 1427	X	X	
Impact cohesion	EN 13588	X		
Tensile cohesion	EN 13589		X	
Resistance to flow and deformation	EN 13398	X	X	
PAV binders	EN 13074-1,2 + EN 14769			
Consistency at intermediate service temperatures	EN 1426	X	X	
Consistency at elevated service temperatures	EN 1427	X	X	
Impact cohesion	EN 13588	X		
Tensile cohesion	EN 13589		X	
Resistance to flow and deformation	EN 13398	X	X	

Modified emulsions

Not relevant?

Note: Classes are to be chosen from a table

Examples, relevant characteristics?

Essential characteristics applicable to recovered binders	Potential test method	Fog seal	Cold patching mixtures	Grave emulsions
Residual binders after destillation	EN 1431			
Consistency at intermediate service temperatures	EN 1426	?	X	X
Consistency at elevated service temperatures	EN 1427	?	X	X
Impact cohesion	EN 13588			
Tensile cohesion	EN 13589			
Resistance to flow and deformation	EN 13398			
Recovered binders	EN 13074-1			
Consistency at intermediate service temperatures	EN 1426	X	X	X
Consistency at elevated service temperatures	EN 1427	X	X	X
Impact cohesion	EN 13588			
Tensile cohesion	EN 13589			
Resistance to flow and deformation	EN 13398			
Stabilized binders	EN 13074-1,2			
Consistency at intermediate service temperatures	EN 1426		X	X
Consistency at elevated service temperatures	EN 1427		X	X
Impact cohesion	EN 13588			
Tensile cohesion	EN 13589			
Resistance to flow and deformation	EN 13398			

Note: None of these mixtures is modified?

 Modified emulsions

 Not relevant?

Note: Classes are to be chosen from a table

Examples, relevant characteristics?

Essential characteristics applicable to recovered binders	Potential test method	Surface dressing	Microsurfacing	Asphalt mixtures
Emulsions				
Residual binder and oil destilate content	EN 1431			?
Binder content	EN 1428	x	x	x
Water content	EN 16849	x	x	x
Breaking value	EN 13075-1	x		?
Fines mixing time	EN 13075-2			?
Mixing stability	EN 12848			

Essential characteristics applicable to recovered binders	Potential test method	Tack coat	Prime coat	Cold recycling
Emulsions				
Residual binder and oil destilate content	EN 1431			?
Binder content	EN 1428	x	x	x
Water content	EN 16849	x	x	x
Breaking value	EN 13075-1	x	?	
Fines mixing time	EN 13075-2		?	
Mixing stability	EN 12848			x

It was proposed to remove EN 13075-2 (52th meeting in London)

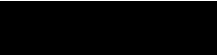
Not relevant?

Note: Classes are to be chosen from a table

Examples, relevant characteristics?

Essential characteristics applicable to recovered binders	Potential test method	Fog seal	Cold patching mixtures	Grave emulsions
Emulsions				
Residual binder and oil destilate content	EN 1431	x	x	x
Binder content	EN 1428	x	x	x
Water content	EN 16849	x	x	x
Breaking value	EN 13075-1	x	x	?
Fines mixing time	EN 13075-2			?
Mixing stability	EN 12848			

It was proposed to remove EN 13075-2 (52th meeting in London)

 Not relevant?

Note: Classes are to be chosen from a table

Surface dressing emulsions in Europe

Country			CZ	CZ	PL	PL	SK	SK	B	B	B	F	A	A
Document			ČSN 73 6132	ČSN 73 6132	10/AP1:2014- 07	10/AP1:2014- 07	KLEaZ 1/2021	KLEaZ 1/2021	PTV 856:2021	PTV 856:2021	PTV 856:2021	Annex EN 13808	Onorm B 3508	Onorm B 3508
Modified/unmodified	Document	Units	N	M	N	M	N	M	N	M	M (latex)	N/M	N	M
Binder content	EN 16849	%	65-69 (class 7-9)	65-69 (class 7-9)	65-69 (c. 7 or 9)	65-69 (c. 7 or 9)	60-65 (class 6-7)	60-65 (class 6-7)	67 (class 8)	67-69 (class 8-9)	Only MBCF	65-71 (class 7-11)	60, 67, 69 (class 6, 8, 9)	67,69,71 (class 8, 9, 10)
Breaking value	EN 13075-1	BV	70-195 (class 3-4)	70-195 (class 3-4)	70-155 (class 3)	70-155 (class 3)	70-195 (class 3-4)	70-195 (class 3-4)	TBR	TBR		< 100 (class 2), 70-155 (class 3)	70-155 (class 3)	70-155 (class 3)
Sieve residue 0,5mm	EN 1429	%	≤ 0,5 (class 4)	≤ 0,5 (class 4)	≤ 0,2 (class 3)	≤ 0,2 (class 3)	≤ 0,5 (class 4)	≤ 0,5 (class 4)	≤ 0,2 (class 3)	≤ 0,2 (class 3)		≤ 0,1 (class.2)	≤ 0,5 (class 4)	≤ 0,5 (class 4)
Sieve residue 0,16mm	EN 1429						≤ 0,5 (class 3)	≤ 0,5 (class 3)				≤ 0,25 (class.2), ≤ 0,5 (class.3)		
Efflux time 40 °C, 4 mm	EN 12846-1	s	15-70 (c. 0 or 3)	15-70 (tř.0 nebo 3)	5-70 (tř.5)	5-70 (tř.5)	5-70 (tř.5)	5-70 (tř.5)	TBR	TBR/5-70 (class 5)		5-70 (tř.5)		
Efflux time 40 °C, otvor 2 mm	EN 12846-1	s	max 100 (c. 0 / 5-6)	max 100 (c. 0 / 5-6)	40-130 (class 4)	40-130 (class 4)	15-70 (c.0 or 3)	15-70 (c.0 or 3)				40-130 (tř. 4)		
Dynamic viscosity	EN 13302	mPa.s											100-1000 (c. 11)	100-1000 (c. 11)
Water effect on adhesivity	EN 13614	%	≥ 75 (class 2)	≥ 75 (class 2)	≥ 75 (class 2)	≥ 75 (class 2)	≥ 75 (class 2)	≥ 90 (class 3)				≥ 75 (class 2) ≥ 90 (class 3)	≥ 75 (class 2)	≥ 90 (class 3)
Immediate adhesivity	TS 16346	%											uvést	uvést
Sedimentation	EN 12847							≤ 10 (class 3)						
Storage stability 0,5mm (7 days)	EN 1429	%	≤ 0,5 (class 4)	≤ 0,5 (class 4)	≤ 0,2 (class 3)	≤ 0,2 (class 3)	≤ 0,5 (class 4)					≤ 0,2 (class 3)	≤ 0,5 (class 4)	≤ 0,5 (class 4)

The essential characteristics (parameters stated in the declaration of performance) according to mandate M/124 are highlighted in the table.

Surface dressing emulsions in Europe

Country			CZ	CZ	PL	PL	SK	SK	B	B	B	F	A	A
Document			ČSN 73 6132	ČSN 73 6132	10/AP1:2014 -07	10/AP1:2014 -07	KLEaZ 1/2021	KLEaZ 1/2021	PTV 856:2021	PTV 856:2021	PTV 856:2021	Annex EN 13808	Onorm B 3508	Onorm B 3508
Modified/unmodified	Document	Units	N	M	N	M	N	M	N	M	M (latex), pouze EMK	N/M	N	M (C71BP3)
Evaporated binder	EN 13074-1													
Penetration 25 °C	EN 1426	0,1mm	≤ 220 (class 5)				≤ 150 (class 4)	≤ 100 (class 3)	To declare	≤ 150 (class 4)				
Ring and Ball	EN 1427	°C	≥ 35 (class 8)				≥ 43 (class 6)		To declare	≥ 55 (class 3)		Fluxed emulsion	≥ 35 (class 8)	≥ 55 (class 3)
Fraass breaking p.	EN 12593	°C					≤ -10 (class 5)							
Impact cohesion	EN 13588	J/cm2						≥ 07 (tř.5)						≥ 07 (tř.5)
Elastic recovery	EN 13398							≥ 50 (tř.5)/ DV (tř. 1)		≥ 50 (class 5)				≥ 40 DV (tř. 1)
Stabilized binder	EN 13074- 1,2													
Penetration 25 °C	EN 1426	0,1mm	≤ 220 (class 5)		≤ 150 (class 4)		≤ 150 (tř.4)/ ≤ 100 (tř.3)	≤ 100 (class 3)				tab 4 EN 13808		
Ring and Ball	EN 1427	°C	≥ 35 (class 8)		≥ 39 (class 7)	≥ 43 (class 6)	≥ 46 (class 5)					tab 4 EN 13808	To declare	To declare
Fraass breaking p.	EN 12593	°C	≤ -10 (class 5)				≤ -10 (class 5)							
Impact cohesion	EN 13588	J/cm2		≥ 07 (class 5)		DV		≥ 07 (class 5)				tab 4 EN 13808		To declare
Elastic recovery	EN 13398	%				≥ 50 (class 5)		≥ 50 (c.5)/ DV (c. 1)						

Surface dressing emulsions in Europe

Country			CZ	CZ	PL	PL	SK	SK	B	B	B	F	A	A
Document			ČSN 73 6132	ČSN 73 6132	10/AP1:2014 -07	10/AP1:2014 -07	KLEaZ 1/2021	KLEaZ 1/2021	PTV 856:2021	PTV 856:2021	PTV 856:2021	Annex EN 13808	Onorm B 3508	Onorm B 3508
Modified/unmodified	Document	Units	N	M	N	M	N	M	N	M	M (latex), pouze EMK	N/M	N	M (C71BP3)
PAV binder	EN 13074- 1,2,EN 14769													
Penetration 25 °C	EN 1426	0,1mm	DV (class 1)				≤ 150 (c.4)/ ≤ 100 (c.3)	≤ 100 (class 3)						
Ring and Ball	EN 1427	°C	DV (class 1)				≥ 50 (class 4)	≥ 46 (class 5)					≤ 65 (class 1)	≤ 70/ To declare
Fraass breaking p.	EN 12593	°C					DV	≤ -10 (class 5)						
Impact cohesion	EN 13588	J/cm2						≥ 07 (class 5)						≥ 07 (class 5)
Elastic recovery	EN 13398	%						≥ 50 (class 5)						

Conclusion/Proposal?

Are we at all able to define intended use parameters which satisfies everybody?

A questionnaire can be prepared.

Back to a general table?

Essential characteristics applicable to recovered binders	Potential test method	Name of the application
Residual binders after destillation	EN 1431	
Consistency at intermediate service temperatures	EN 1426	
Consistency at elevated service temperatures	EN 1427	
Impact cohesion	EN 13588	
Tensile cohesion	EN 13589	
Resistance to flow and deformation	EN 13398	
Recovered binders	EN 13074-1	
Consistency at intermediate service temperatures	EN 1426	
Consistency at elevated service temperatures	EN 1427	
Impact cohesion	EN 13588	
Tensile cohesion	EN 13589	
Resistance to flow and deformation	EN 13398	
Stabilized binders	EN 13074-1,2	
Consistency at intermediate service temperatures	EN 1426	
Consistency at elevated service temperatures	EN 1427	
Impact cohesion	EN 13588	
Tensile cohesion	EN 13589	
Resistance to flow and deformation	EN 13398	
PAV binders	EN 13074-1,2 + EN 14769	
Consistency at intermediate service temperatures	EN 1426	
Consistency at elevated service temperatures	EN 1427	
Impact cohesion	EN 13588	
Tensile cohesion	EN 13589	
Resistance to flow and deformation	EN 13398	

Essential characteristics applicable to recovered binders	Potential test method	Name of the application
Emulsions		
Residual binder and oil destilate content	EN 1431	
Binder content	EN 1428	
Water content	EN 16849	
Breaking value	EN 13075-1	
Fines mixing time	EN 13075-2	
Mixing stability	EN 12848	

Applications

- Emulsion for spreading
 - Tack coat
 - Fog seal, regenerating emulsions
 - Prime coat
 - Surface dressing
 - Patchmatic, spray patching
- Emulsion for mixtures
 - Micro and slurry surfacing
 - Asphalt concrete
 - Grave emulsion
 - Cold mixtures for patching
 - Emulsions for recycling

What else?