Draft Project plan for the CEN Workshop on "Soil-sediment-water system - Solutions to deal with PMT/vPvM substances"

Requests to participate in the Workshop and/or comments on the project plan are to be submitted by
31st January 2024 to
madlen.schmudde@din.de[1]

Recipients of this project plan are kindly requested to name all patent rights known to them to be relevant to the Workshop and to make available all supporting documents.

Berlin, 8th December 2023 (Version 1.0)

[1] Applications for participating in the Workshop and comments on the project plan that are not received by the deadline do not need to be taken into consideration. Once constituted, the Workshop will decide whether or not to consider the comments received in good time.

Contents

Summary

This CEN Workshop Agreement (CWA) is initiated to tackle the growing concerns surrounding (very) persistent, (very) mobile, and toxic (PMT/vPvM) substances, particularly focusing on per- and polyfluoroalkyl substances (PFAS), which pose significant environmental and health risks. The need for this workshop arises from the pressing challenges related to the detection, risk assessment, remediation, and prevention of PMT/vPvM substances in the soil-sediment water system. The workshop aims to consolidate solutions from three research projects funded by the European Union under the Horizon 2020 Framework Programme – PROMISCES (Preventing Recalcitrant Organic Mobile Industrial chemicalS for Circular Economy in the Soil-sediment-water system), ZeroPM (Zero Pollution of Persistent, Mobile Substances), and SCENARIOS (Strategies for health protection, pollution Control and Elimination of Next generAtion RefractIve Organic chemicals from the Soil, vadose zone and water) benefitting a wide range of stakeholders, including researchers, public authorities, water utilities, and diverse industry sectors. The workshop focuses on circular economy strategies and aims to provide best practices and guidelines while not explicitly addressing the implementation or enforcement of standards.

1 Status of the project plan

Draft project plan for public commenting (Version 1.0)

This draft project plan is intended to inform the public of a new Workshop. Any interested party can take part in this Workshop and/or comment on this draft project plan. Please send any requests to participate or comments by e-mail to **madlen.schmudde@din.de**.

All those who have applied for participation or have commented on the project plan by the deadline will be invited to the kick-off meeting of the Workshop on **2024-02-15**.

2 Workshop proposer and Workshop participants

2.1 Workshop proposer

Person or organisation	Short description and interest in the subject
Name: Thomas Track Organization: DECHEMA Gesellschaft für Chemische Technik und Biotechnologie e.V. Postal address: Theodor-Heuss-Allee 25, 60486 Frankfurt am Main, Germany Email: thomas.track@dechema.de Phone: +49 69 7564-427 Webpage: www.dechema.de	Freshwater and wastewater expert with a focus on zero pollution, circularity approaches and soil-sediment-water resources management. He is strongly working on the interface of transferring new developments into application.

2.2 Other potential participants

This CWA will be developed in a Workshop (temporary body) that is open to any interested party. The participation of other experts would be helpful and is desired. It is recommended that:

- Academic and Research Institutions
- Standards Application Experts
- Non-Governmental Organizations (NGOs)
- Manufacturers of PMT/vPvM-related products
- Test Institutes for PMT/vPvM substances

- Representatives of the Public Sector
- Research Institutes specializing in environmental issues
- System/Solution Providers in the field of PMT/vPvM management
- Downstream users of PMT/vPvM substances
- Water utilities

take part in the development of this CWA.

2.3 Participants at the kick-off meeting

The following persons or organisations already signed up to the kick-off meeting prior to the publication of the draft project plan.

Person	Organisation
Workshop proposer: Thomas Track	DECHEMA Gesellschaft für chemische Technik und Biotechnologie e.V.
Julie Lions	BRGM, Bureau de recherches geologiques et minieres
Veronika Zhitneva	KWB, Kompetenzzentrum Wasser Berlin gemeinnutzige gmbh
Valeria Dulio	INERIS - Institut national de l'environnement et des risques
Anita Sosnowska	QSAR LAB – QSAR LAB spolka z ograniczona odpowiedzialnoscia
Jochen Kuckelkorn	UBA – Umweltbundesamt
Peter Behnisch	BDS - BioDetection Systems B.V.
Laura del Val	EURECAT - Fundacio Eurecat
Martine Bakker	RIVM - Rijksinstituut voor volksgezondheid en milieu
Miren López de Alda	CSIC - Agencia estatal consejo superior de investigaciones cientificas
Thomas James Oudega	TU WIEN - Technische Universitaet Wien
Francesco Fatone	UNIVPM - Universita politecnica delle marche
María José Muñoz Muñoz	CBT - Consorci besos tordera
Ricard Mora	ESOLVE - Esolve consultoria e ingenieria medioambiental sl
Joana Baeta	ESOLVE - Esolve consultoria e ingenieria medioambiental sl
Evgenia Benova	UNISOFIA - Sofia University St Kliment Ohridski
Benjamin Laulier	SINAPTEC Ultrasonic technology
Zsuzsanna Nagy-Kovács	BUWW - fovarosi vizmuvek zartkoruen mukodoreszvenytarsasag
Frugis Alessandro	ACEA - ACEA engineering laboratories research innovation societa per azioni
Asci Maria Grazia	SIMAM - Simam spa simam s.p.a. Italy
Sarah Hale	TZW – Technologiezentrum Wasser
Mihaela Mirea	LOMARTOV
Workshop secretariat: Madlen Schmudde	DIN e.V.

3 Workshop objectives and scope

3.1 Background

Over the past decades, concerns have been growing about chemicals which do not degrade ((very) persistent substances; (v)P), can easily spread throughout the aqueous environment ((very) mobile substances; (v)M) and are suspected to harm organisms (toxic substances; T). However, various challenges concerning the detection, risk assessment, remediation, and prevention of these PMT/vPvM substances from entering the soil-sediment-water system still exist and need to be addressed.

The Horizon 2020 research projects PROMISCES, ZeroPM and SCENARIOS all aim at developing solutions to meet these challenges. The planned CEN Workshop Agreement (CWA) is intended to present a collection of these solutions and is targeted at all stakeholders active in the field of PMT/vPvM management, whether they are researchers, public authorities, problem owners, NGOs, water utilities, soil/brownfield actors or companies developing market-ready solutions. One particular group of substances, per- and polyfluoroalkyl substances (PFAS), is especially relevant in the context of PMT/vPvM substances as expected future EU legislations may demand that affected stakeholders address these substances, and these stakeholders need the appropriate solutions to do this.

The **prevention of PFAS** from entering the soil-sediment-water system relies on a reduction in manufacture, use and release. Tools such as policy development, a stimulation towards safe and sustainable chemicals as well as the identification and use of alternatives are needed. Within ZeroPM, tools will be developed to allow companies to identify if and where they have PFAS in their supply chains and databases will be produced for alternatives to these uses. Within PROMISCES, tools will be developed to analyse the impact of not yet regulated PFAS and transformation products thereof to the sum of PFAS. Opportunities and constrains in current PFAS policy will be identified and exploited.

The **analysis of PFAS** is complicated due to their adsorption tendencies and high blank values. Currently there are few standardised methods for many PFAS substances and other emerging PMT/vPvM substances, and often these substances are not integrated into routine analysis due to specific methods required for detection. Within PROMISCES, methods will be developed for wastewaters, surface, ground- and drinking waters, and for complex solid matrices (such as sewage sludge, sediment, fertilizers, or stack emission). The methods and workflows will ensure maximum interlaboratory comparability. Within PROMISCES, (bio)analytical tools will be developed to analyse the sum of PFAS as well as PFOA-toxic equivalents based on in vitro/in silico based toxic relevant mode of actions. Within ZeroPM, analytical methods with be developed for certain PFAS parameters and testing methods will be verified for soil, water, and sludge. Within the SCENARIOS project, detection techniques for PFAS in water or soil will be developed.

Concerning **hazard and risk assessment**, crucial toxicological, persistence, and mobility data gaps exist. In vitro bioassay test batteries and in silico models are developed by PROMISCES to assess not only single substances but also to evaluate whole substance classes and complex (water) samples to fill these gaps for PMT/vPvM substances and thus, will also be addressed in the inventory.. ZeroPM will further contribute by considering both internal and external, human, and environmental exposure in advanced risk assessment models. The developed solutions to improve risk assessment and facilitate optimal risk management and preventive solutions will be part of this CWA. SCENARIOS project will develop a PFAS modelling software consisting in a sequence of procedures for developing predictive models. On the one hand, the numerical tools will enable the mapping of the spatial-temporal evolution of the PFAS pollution in vadose zone and underlying aquifers; on the other hand, the numerical tools will allow the design and assessment of the efficiency for in-situ/ex-situ remediation technologies. Moreover, a risk assessment toolbox will be produced in form of an improved and optimised toxicological model platform for creating a risk assessment framework for PFAS.

Concerning **PFAS remediation**, the interest in new insights and technologies is high. Industrial sites contaminated by PFAS have been identified as primary sources responsible for soil and (ground)water contamination. PROMISCES results on a novel treatment train for contaminated soils and groundwater will also form part of the solutions inventory. ZeroPM and PROMISCES will develop innovative solutions for water and sludge, looking at both removal efficiency but also sustainability metrics for the solutions. Wastewater can contain various PFAS at different concentrations. However, many PMT/vPvM substances including PFAS are poorly removed in conventional wastewater treatment plants which limits circularity in the water cycle, for instance by complicating nutrients recovery from sewage sludge for fertiliser use. Up to date recommendations on choosing sludge treatment technologies to deliver ‘PFAS free’ fertilisers are missing. There is also currently no mass flow analysis of PFAS fate and degradation during sediment treatment for material recovery from dredged sediments. Insights on PFAS removal from these matrices (i.e. wastewater, sediments, sludge) will be addressed in the CWA. PFAS removal from drinking water is also important to consider since urban areas with semi-closed water cycles face challenges posed by legacy pollutants and high chemical concentrations when providing sustainable drinking

water. The results on combined drinking water treatment, as well as on advanced wastewater treatment and landfill leachate treatment can be addressed in the CWA. Remediation efficiency will be monitored by a combination of single compounds chemical testing and sum of compounds by effect-based bioanalysis tools. In SCENARIOS project several technologies for PFAS removal and one for PFAS destruction will be validated.

3.2 Scope

The planned Workshop defines best practices, solutions, and guidelines concerning the handling of PMT/vPvM substances, not only assessing their behaviour in the soil-sediment-water system but also their possible prevention at source as well as end-of-pipe solutions. These solutions are clustered into categories (e.g. prevention, detection, hazard and risk assessment, measures) in order to reach various stakeholders within the system. As part of the categorized solutions, a special focus is placed on the following five circular economy routes:

1. Semi-closed water cycle for drinking water supply

2. Wastewater reuse for agricultural irrigation

3. Nutrient and energy recovery from treated sludge for fertilisers

4. Material recovery from dredged sediment for eco-materials

5. Groundwater and soil remediation to protect water cycle

The planned Workshop is applicable to researchers, public authorities, problem owners, NGOs, water utilities, soil/brownfield actors or companies developing market-ready solutions.

3.3 Related activities

The subject of the planned CWA is not at present the subject of a standard. However, there are committees, standards and/or other technical specifications that deal with related subjects and thus need to be taken into account - and involved, where necessary - during this Workshop:

- ISO/TC 147 – Water Quality
    - ISO 21675: Water quality - Determination of perfluoroalkyl and polyfluoroalkyl substances (PFAS) in water - Method using solid phase extraction and liquid chromatography-tandem mass spectrometry (LC-MS/MS)
- ISO/TC 190 - Soil quality
- ISO/TC 224 - Drinking water, wastewater and stormwater systems and services
- ISO/TC 275 - Sludge recovery, recycling, treatment and disposal
- ISO/TC 282 – Water reuse
- CEN/TC 230 - Water analysis
    - prEN 17892: Water quality - Determination of the sum of perfluorinated substances (Sum of PFAS) in drinking water - Method using liquid chromatography/mass spectrometry (LC/MS)
- CEN/TC 308 - Characterization and management of sludge
- CEN/TC 444 - Environmental characterization of solid matrices

4 Workshop programme

4.1 General

The kick-off meeting is planned to take place on 2024-02-15 virtually. A draft for public commenting will not be published.

A total of 6 Workshop meetings (kick-off meeting and Workshop meetings) and web conferences will be held, during which the content of the CWA will be presented, discussed and approved.

The CWA will be drawn up in **English** (language of meetings, minutes, etc.). The CWA will be written in **English**.

4.2 Workshop schedule

Table 1: Workshop schedule (preliminary)

CEN/CENELEC Workshop	Oct 2023	Nov 2023	Dec 2023	Jan 2024	Feb 2024	Mar 2024	Apr 2024	May 2024	Jun 2024	Jul 2024	Aug 2024	Sep 2024	Oct 2024	Nov 2024
Initiation														
1. Proposal form submission and TC response														
2. Project plan development														
3. Open commenting period on draft project plan														
Operation														
4. Kick-off meeting														
5. CWA(s) development														
6. CWA(s) finalised and approved by Workshop participants														
Publication														
7. CWA(s) publication														
Dissemination														
Milestones					K	V		V		V		V	V + A	P + D

K Kick-off
V Virtual Workshop meeting
A Adoption of CWA
P Publication of CWA
D Online distribution of CWA

4.3 Work already delivered

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5 Resource planning

The administrative costs of the CEN Workshop will be covered by the PROMISCES (Preventing Recalcitrant Organic Mobile Industrial chemicals for Circular Economy in the Soil-sediment-water system) project, which received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101036449.

All costs related to the participation of interested parties in the Workshop's activities have to be borne by themselves. The PROMISCES project aims to reach an agreement with CEN CENELEC Management Centre to make the CWA freely downloadable from the CEN Website. The copyright of the final CEN Workshop Agreement will be at CEN. The final document will include the following paragraph: "Results incorporated in this CEN Workshop Agreement received funding from the European Union's HORIZON 2020 research and innovation programme under grant agreement numbers 101036449 (PROMISCES), 101036756 (ZeroPM), 101037509 (SCENARIOS)".

6 Workshop structure and rules of cooperation

6.1 Participation in the Workshop

The Workshop will be constituted during the course of the kick-off meeting. By approving this project plan, the interested parties declare their willingness to participate in the Workshop and will be formally named as Workshop participants, with the associated rights and duties. Participants at the kick-off meeting who do not approve the project plan are not given the status of a Workshop participant and are thus excluded from further decisions made during the kick-off meeting and from any other decisions regarding the Workshop.

As a rule, the request to participate in the Workshop is closed once it is constituted. The current Workshop participants shall decide whether any additional members will be accepted or not.

Any new participant in the Workshop at a later date is decided on by the participants making up the Workshop at that time. It is particularly important to consider these aspects:

a. expansion would be conducive to shortening the duration of the Workshop or to avoiding or averting an impending delay in the planned duration of the Workshop;
b. the expansion would not result in the Workshop taking longer to complete;
c. the new Workshop participant would not address any new or complementary issues beyond the scope defined and approved in the project plan;
d. the new Workshop participant would bring complementary expertise into the Workshop in order to incorporate the latest scientific findings and state-of-the-art knowledge;
e. the new Workshop participant would actively participate in the drafting of the manuscript by submitting concrete, not abstract, proposals and contributions;
f. the new Workshop participant would ensure wider application of the CWA.

All Workshop participants who voted for the publication of the CWA or its draft will be named as authors in the European Foreword, including the organisations which they represent. All Workshop participants who voted against the publication of the CWA, or who have abstained, will not be named in the European Foreword.

6.2 Workshop responsibilities

The Workshop Chair is responsible for content management and any decision-making and voting procedures. The Workshop Chair is supported by the Workshop Vice-Chair and the responsible Workshop secretariat, whereby the Workshop secretariat will always remain neutral regarding the content of the CWA(s). Furthermore, the Workshop secretariat shall ensure that CEN-CENELEC's rules of procedure, rules of presentation, and the principles governing the publication of CWA(s) have been observed. Should a Workshop Chair no longer be able to carry out her/his duties, the Workshop secretariat shall initiate the election of a new Workshop Chair. The list below covers the main tasks of the Workshop Chair. It is not intended to be exhaustive.

- Content related contact point for the Workshop
- Presides at Workshop meetings
- Ensures that the development of the CWA respects the principles and content of the adopted project plan
- Manages the consensus building process, decides when the Workshop participants have reached agreement on the final CWA, on the basis of the comments received
- Ensures due information exchange with the Workshop secretariat
- Represents the Workshop and its results to exterior

The Workshop secretariat, provided by a CEN/CENELEC national member, is responsible for organising and leading the kick-off meeting, in consultation with the Workshop proposer. Further Workshop meetings and/or web conferences shall be organised by the Workshop secretariat in consultation with the Workshop Chair. The list below covers the main tasks of the Workshop secretariat. It is not intended to be exhaustive.

- Administrative and organisational contact point for the Workshop
- Ensures that the development of the CWA respects the principles and content of the adopted project plan and of the requirements of the CEN-CENELEC Guide 29
- Formally registers Workshop participants and maintains record of participating organisations and individuals
- Offers infrastructure and manage documents and their distribution through an electronic platform
- Prepares agenda and distribute information on meetings and meeting minutes as well as follow-up actions of the Workshop
- Initiates and manage CWA approval process upon decision by the Workshop Chair
- Interface with CEN-CENELEC Management Centre (CCMC) and Workshop Chair regarding strategic directions, problems arising, and external relationships
- Advises on CEN-CENELEC rules and bring any major problems encountered (if any) in the development of the CWA to the attention of CEN-CENELEC Management Centre (CCMC)
- Administrates the connection with relevant CEN or CENELEC/TCs
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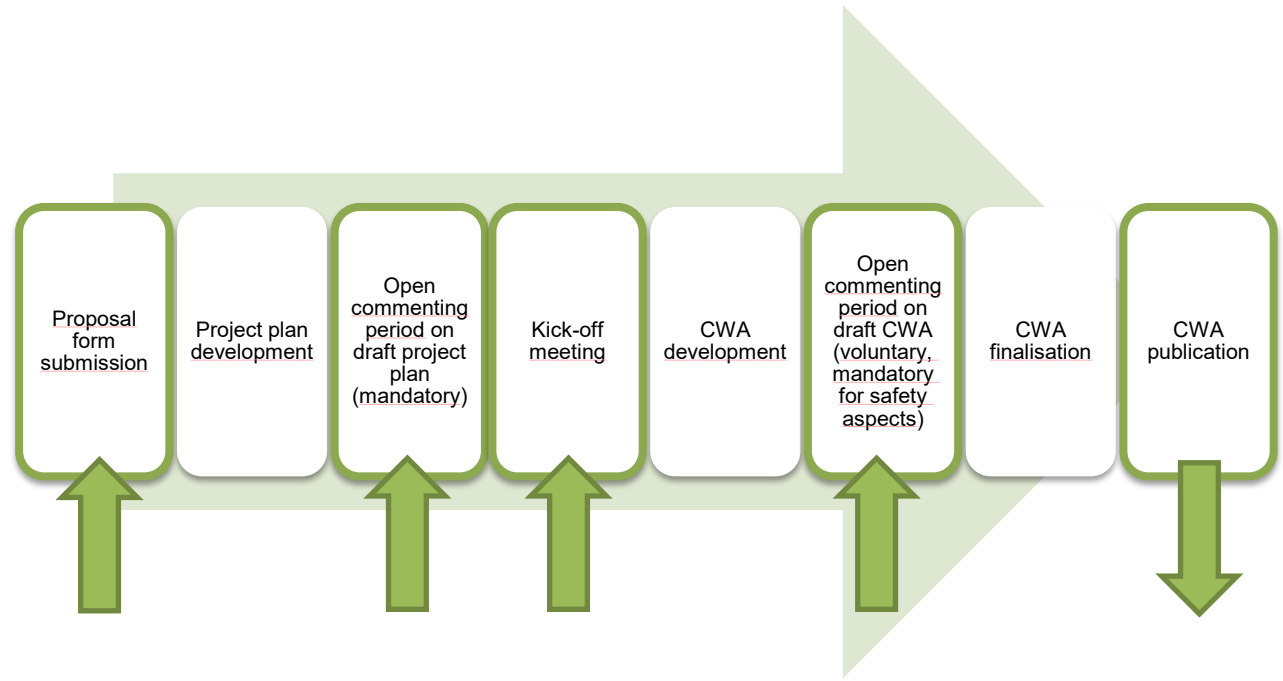
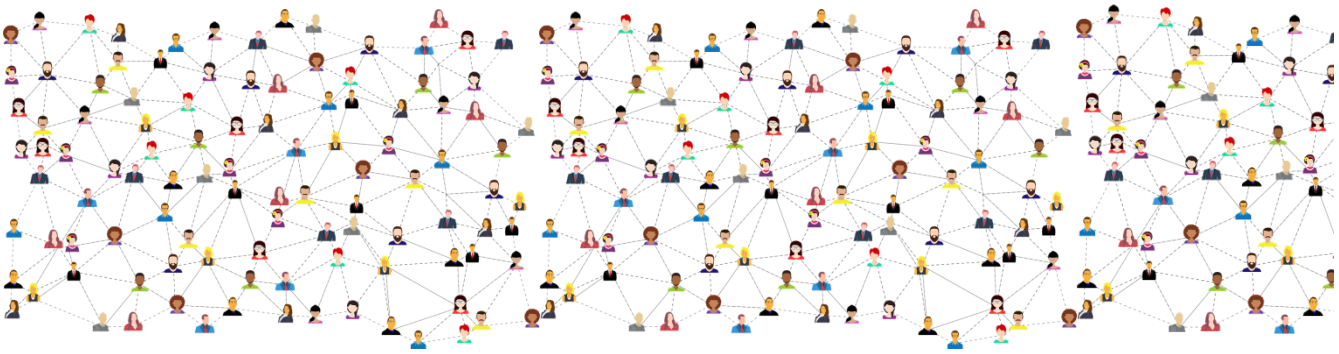
6.3 Decision making process

Each Workshop participant is entitled to vote and has one vote. If an organisation sends several experts to the Workshop, that organisation has only one vote, regardless of how many Workshop participants it sends. Transferring voting rights to other Workshop participants is not permitted. During voting procedures, decisions are passed by simple majority; abstentions do not count.

If Workshop participants cannot be present in the meetings when the CWA or its draft is adopted, an alternative means of including them in the voting procedure shall be used.

7 Dissemination and participation strategy





Proposal form submission

The Workshop proposal will be disseminated to the following relevant stakeholders and bodies for consultation:

- ISO/TC 147 – Water Quality
- ISO/TC 190 - Soil quality
- ISO/TC 224 - Drinking water, wastewater and stormwater systems and services
- ISO/TC 275 - Sludge recovery, recycling, treatment and disposal
- ISO/TC 282 – Water reuse
- CEN/TC 230 - Water analysis
- CEN/TC 308 - Characterization and management of sludge
- CEN/TC 444 - Environmental characterization of solid matrices
- CEN/TC 165 - Waste water engineering
- CEN/TC 260 - Fertilizers and liming materials
- CEN/TC 248 - Textiles and textile products

Open commenting period on draft project plan

In addition to the CCMC website, the project plan and the date of the kick-off meeting will be advertised on the website and on social media of the R&I projects PROMISCES, ZeroPM and SCENARIOS as well as by the partners to raise awareness. Interested parties are requested to contribute either through commenting of the project plan (short term) or through Workshop participation (long term). The draft project plan will be disseminated to the following relevant stakeholders and bodies for consultation:

- ISO/TC 147 – Water Quality
- ISO/TC 190 - Soil quality

- ISO/TC 224 - Drinking water, wastewater and stormwater systems and services
- ISO/TC 275 - Sludge recovery, recycling, treatment and disposal
- ISO/TC 282 – Water reuse
- CEN/TC 230 - Water analysis
- CEN/TC 308 - Characterization and management of sludge
- CEN/TC 444 - Environmental characterization of solid matrices
- CEN/TC 165 - Waste water engineering
- CEN/TC 260 - Fertilizers and liming materials
- CEN/TC 248 - Textiles and textile products

CWA publication

The published CWA will be advertised on the website and on social media of the R&I projects PROMISCES, ZeroPM and SCENARIOS as well as by the partners to raise awareness. The published CWA will be advertised to the following relevant stakeholders and bodies for consultation:

- ISO/TC 147 – Water Quality
- ISO/TC 190 - Soil quality
- ISO/TC 224 - Drinking water, wastewater and stormwater systems and services
- ISO/TC 275 - Sludge recovery, recycling, treatment and disposal
- ISO/TC 282 – Water reuse
- CEN/TC 230 - Water analysis
- CEN/TC 308 - Characterization and management of sludge
- CEN/TC 444 - Environmental characterization of solid matrices
- CEN/TC 165 - Waste water engineering
- CEN/TC 260 - Fertilizers and liming materials
- CEN/TC 248 - Textiles and textile products

8 Contacts

- Workshop Secretariat:

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- Workshop proposer

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