Online Workshop

Sustainability in PPE: addressing the challenges through standardization

18th March 2021 - 9:30 to 16:00

Welcome to the Breakout Session
2A: Design of garments facilitating repair, maintenance and recycling!

We will start soon

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Your moderators

Valeria Botta

Programme Manager, European Environmental Citizen's Organisation for Standardisation (ECOS)

Andrea Rechtsteiner

representative SBS

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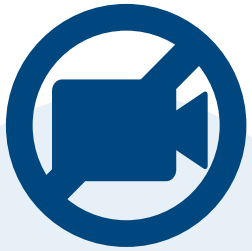
House Rules

Keep
your mic
muted



Switch your
camera off


Main room - plenary
CEN CENELEC
Join at
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2A: Design of garments facilitating repair, maintenance and recycling

Vera DeGlas R&D Engineer, SIOEN Apparel

Philip Tasker UK and Ireland Sales Director, Bristol Uniforms Limited

Till Batt PhD, Scientific Researcher, Empa - Swiss Federal Laboratories for Materials Science and Technology

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Sustainable for PPE

SHOWCASE OF DEVELOPMENTS, EXPERIENCES AND CONCERNS WITH STANDARDS AND TESTING / CONFORMITY ASSES

Creating sustainable PPE

Is it feasible?

- PPE = Requirements by standard(s)
- PPE = Requirements of customers (tenders)
- PPE = **Protecting end-users**
- PPE = Need to be reliable
- PPE = Need to be durable
- PPE = Need to be cleaned, repaired (cleaning, maintenance, inspection and repair)
- ……..and what about future PPE – with integrated devices (electronic part)

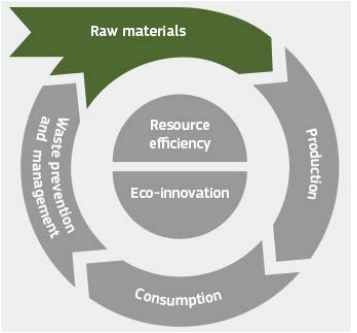
End of Life PPE (discard –recycling)

Need for CHANGE while preserving PROTECTION
"?" = HOW _ "Development"

Selection of textile materials is based on the Requirements of standard(s) and or customers (tenders)

1/. Composition and application of PPE:

PPE based one type of Raw Materials ? What about MULTI RISK PPE?
Construction of textiles (lighter weight?)
Renewable Raw Materials?
Raw materials with an extended lifespan
retain mechanical properties during use, …
increasing number of cleaning processes, …
…., color fastnesses, …, color High Visible colors, ….
…. accessories such as closures, retro stripes, etc.)



2/. Treatment (example: C8 ➔ C6 = ? ➔ C4 ➔ C0

What about oil and chemical (solvent, gasoline , ..) repellency?

3/. Design PPE's: "ECO-DESIGN"

Easy Maintenance
Easy Repair
Easy Disassemble (End of Life)

4/. Packaging

Individual packaging (due to pandemic / retail)
Boxes (renting businesses)

5/. Paper manuals (Multi risk PPE 9 (x24 languages))

Sustainable for PPE is a challenge

- **Safety "first"**
- Implementation of possible actions should be done
- Some requirements (of standards, tenders, …) need to be adjusted

It will be **difficult**; progress will have to be made "**step by step**"

Thank You

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Sustainability for PPE
Thursday 18th March 2021

Philip Tasker
UK and Ireland Sales Director

BRIEF HISTORY OF BRISTOL

- 1801 Founded in the City of Bristol
- 1962 Manufacture of Fire Protective Clothing
- 60+ years supplier to Emergency Services
- Export 110+ countries worldwide
- January 2021 became part of Global Supplier MSA Safety

SUSTAINABILITY

- PPE must be fit for purpose (legal requirement)

- Extend the life of Ensemble so as OEM particularly
  - Fire coats
  - Fire trousers

MANAGED CARE OPTIONS - UK

- In-house Care 7%
- Outsourced Care 93%

MSA BRISTOL - CLEANING SERVICE

1. Standard Wash at 40 degrees Celsius to minimise harm to the garment whilst being washed.
2. Thermal decontamination washed at 65 degrees Celsius, controlled.
3. Asbestos + MMF decontamination
4. Pre-spotting to assist carbonaceous deposit removal
5. Removal of various contaminants in accordance with NHS Foul Linen Guidelines: HSG (95) 18 Hospital laundry arrangements for used and infected linen.

   The detergents used in this process have also been specifically developed in order to maximise cleaning whilst minimising any potential damage that may occur through washing.

MSA BRISTOL - REPAIR SERVICE

- Garments are repaired in accordance with traditional Bristol Uniforms construction methods using the correct and appropriate materials and thread. If doubt exists on the part of the repairer, the supervisor is consulted.
- Repairs are undertaken by experienced MSA-Bristol employees trained in garment construction
- 28 point inspection (Coat) + 18 point inspection (Trouser)
- All repairs (+ costs) are recorded on the system against each individual item of PPE

MSA BRISTOL - MANAGED CARE

Process externally validated:

1. BS EN 150 9001:2015
2. Laundry Technology Centre
3. NFPA1851:2014

MSA BRISTOL - MANAGED SERVICE

- 147,000 garments per annum
- 184,000 items per annum
- 178,000 washes per annum
- 134,000 repairs per annum

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Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

ETH zürich

EPFL

Empa
Materials Science and Technology

‘ReMask’

Strategies for innovations for Swiss masks needed in pandemic situations

https://www.empa.ch/web/remask/overview

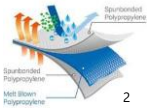
remask@empa.ch

Innosuisse

ReMask – Work Package Overview

Textile Structures (EPFL & Empa)	Mask Ecosystem (Empa & ETH)	Biology (Empa & Spiez)	Optimized Designs (Empa, ETH, Spiez)
Use Prolongation	Washability	Virus Filtr. Model	Anti-viral coating	Alternative designs

1



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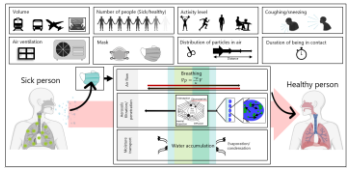

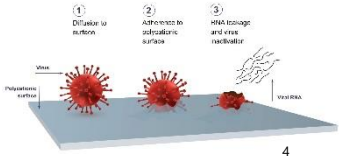

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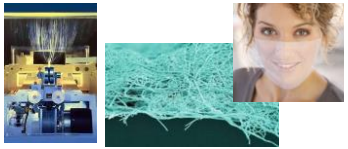
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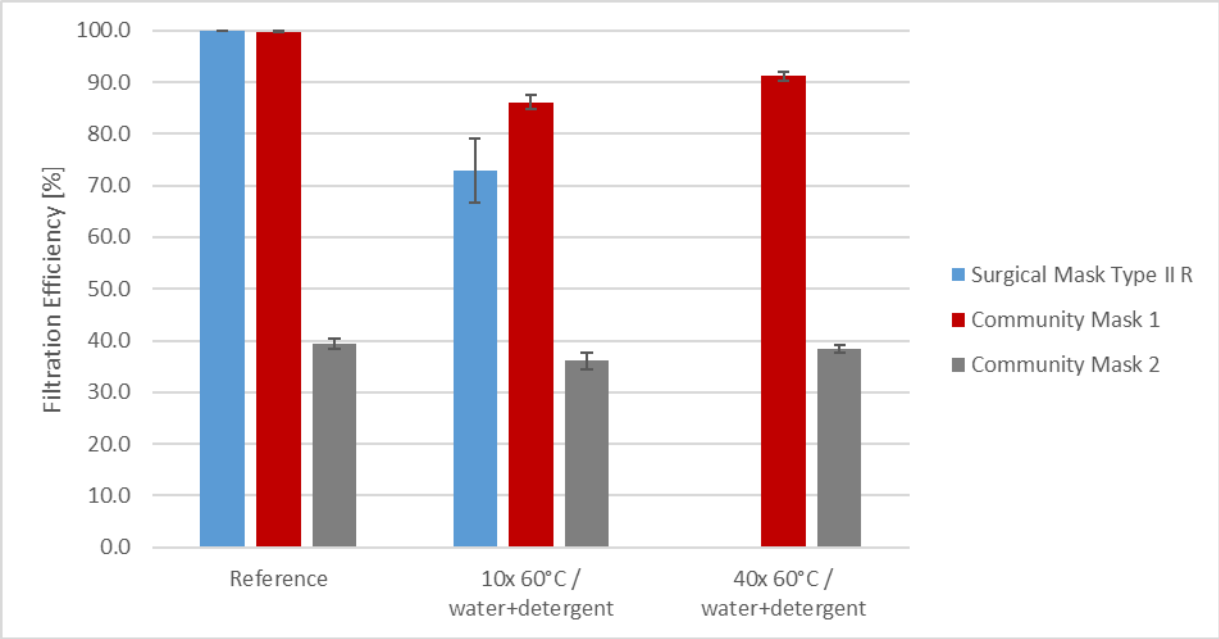
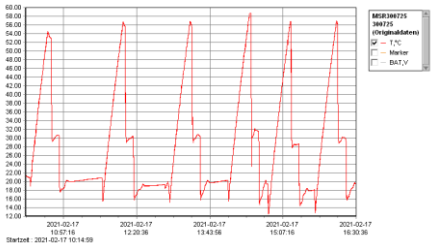
Consortium of 48 Swiss SME Companies (Textiles, Machines, Filters, Packaging, Finishing, Chemistry)

Mask protection after machine washing





Washing in dependence on ISO 6330:2012

Filtration Efficiency according SNR 30000:2021 @1 micron particle size

- The electrostatic charge in the fibers is dissipated by washing
- Textile layers offer protection during washing cycles

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Schweizerische Eidgenossenschaft
Confédération suisse
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ETH zürich

EPFL

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Thank you for your attention!

Questions / comments?

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Discussion

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Rank your favourite question!

What's next?

14:20 - 15:15	2A: Design of garments facilitating repair, maintenance and recycling 2B: Choices and recycling of materials 2C: Experiences with different types of PPE
15:15 - 15:30	*Coffee Break*
15:30 - 15:50	**Update on CEN-CENELEC Strategic Advisory Body on Environment (SABE)** **Circular Economy Topic Group**
15:50 - 16:00	**Concluding remarks**

Link to main room will be published in the chat. Make sure to close this one before moving to the next!

See you there! Thank you!

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