



Sustainability in PPE: addressing the
challenges through standardization

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

Welcome to the Breakout Session 2C: Experiences with different types of PPE!

We will start soon

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Your moderators



Henk Vanhoutte

Chair, CEN-CENELEC PPE Sector Forum; Secretary General, European Safety Federation (ESF)



Dr. Karin Eufinger

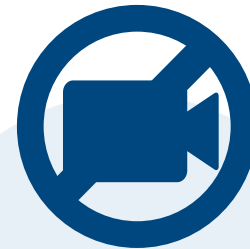
Coordinator NBN Sector Operator
CENTEXBEL, Convenor CEN/TC 248/WG 31



House Rules



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2C: Experiences with different types of PPE

Ellen Waßmann HDS/L – Federal Association of the German Footwear and Leather Goods Industry

Mélanie Schmutz Scientist, Empa - Swiss Federal Laboratories for Materials Science and Technology

Erik De Muynck HearingCoach International BV (Business Development) and member of CEN/TC 159



HDS



L

Federal Association of the
German Footwear and
Leather Goods Industry

Sustainability in PPE

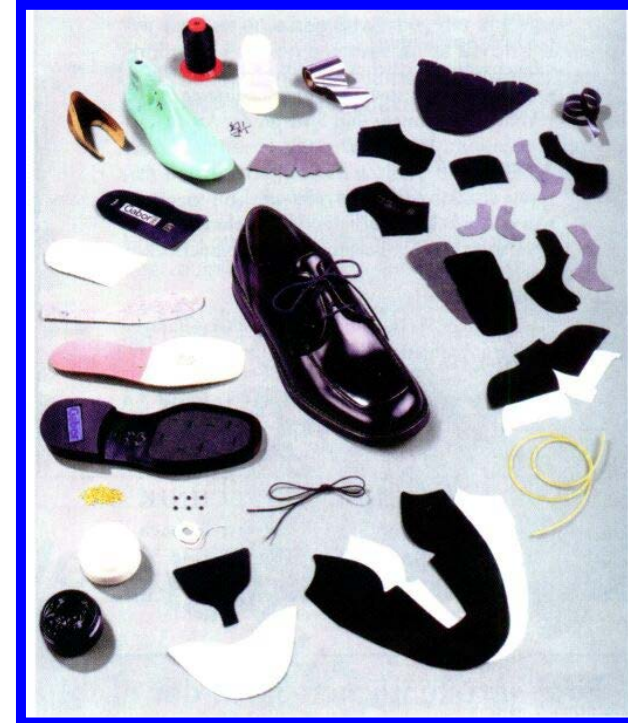
Experiences with different types of PPE: Footwear

Ellen Waßmann, HDS/L

Material composition

- Leather, - fibre
- Textiles
- Synthetics
- Rubber
- Polymerics
- Steel
- Aluminium
- Plastic
- Adhesive
- Wood

→ Up to 40 different materials! In one shoe



e.g. occupational footwear

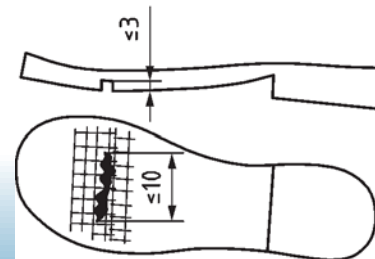
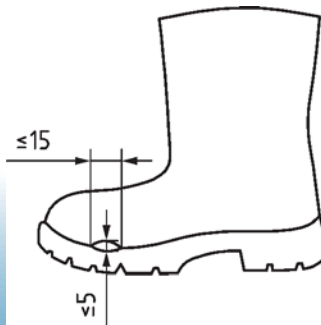
Discussion of Options

- One collected pairs of footwear save the environment up to 8,000 l of water and around 3.6 kg CO₂
- Products should rather – according to the ranking be
 1. Reused: not possible depending on reduced or no longer guaranteed protection for the user
 2. Repaired: partial possible, but needs to be done with the same material as used for EC Type Examination by the Licence holder
 3. Recycled: partial possible, but due to the complex mixture of materials, it is anything but economical, on the other side, recycling of PPE heavily contaminated with dirt and oil is rejected

What can we do?

1.Step:

Raising user awareness of care, maintenance of PPE, e.g. *ISO/TR 18690 „Guidance for the selection, use and maintenance of safety and occupational footwear and other personal protective equipment offering foot and leg protection“* and new informative Annexes „Assessment of the footwear by the wearer“ introduced at current revision of EN ISO 20345-7



Examples, criteria for the assessment of the state of safety footwear

What can we do?

2. Step: Increased offer of repair services by footwear manufacturers
e.g. replacement of
- outsoles: cracks, breaks or severe wear of the tread
 - lacing parts: zipper defective, eyelets torn out, torn laces
 - insoles: deformations, fractures, heavy abrasion



What can we do?

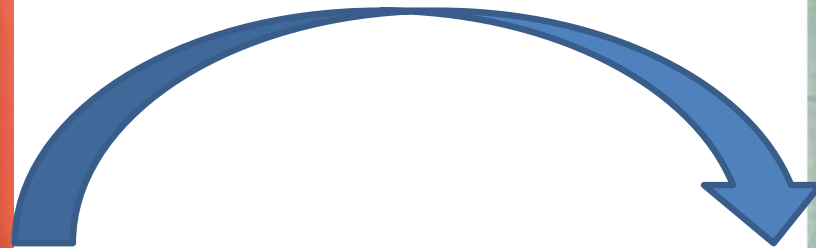
3. Step: Innovation / F & E

- product design
- selection of material, additional mechanism for longer durability, e.g. Scuff Caps (SC): abrasion resistant material or component to protect against scuff of the upper external toe region; current revision EN ISO 20345-7
- production process
- new business models



There are still big steps to be taken before shoes can be returned into new ones again –

We stay on!



Imprint



Contact

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Cotton and Surgical Masks – What Ecological Factors are Relevant for Their Sustainability?

Mélanie Schmutz, Roland Hischer, Till Batt, Peter Wick,
Bernd Nowack, Patrick Wäger and Claudia Sc



Scenario considered

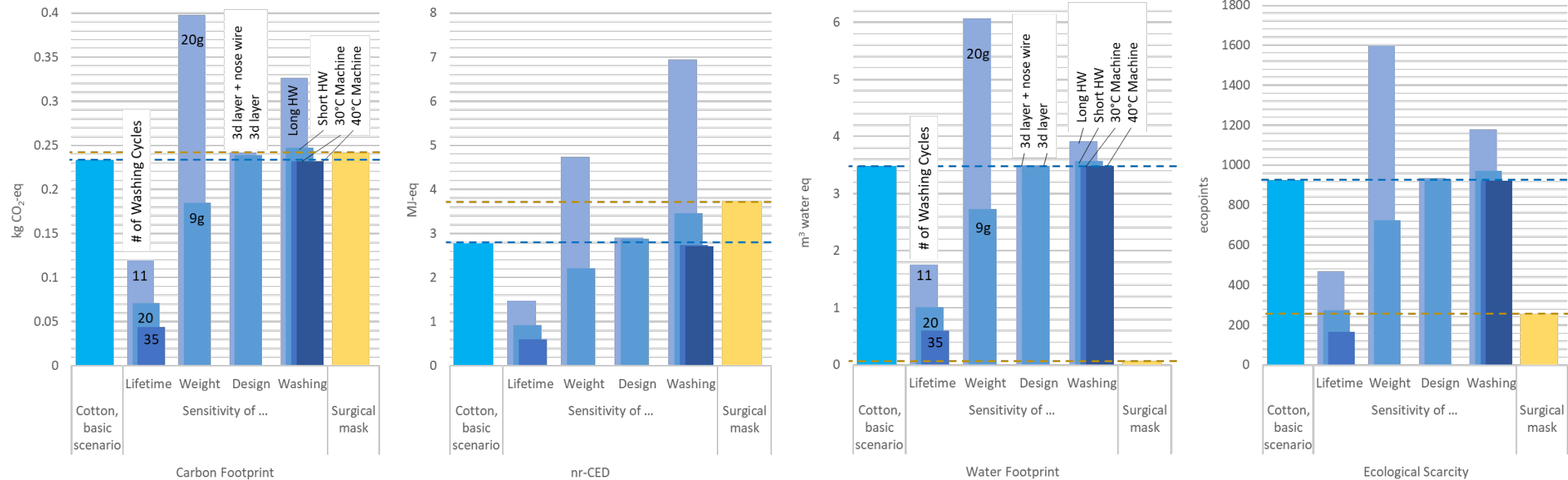
Scenarios	Cotton mask	Surgical mask
Wearing	2 masks for a working week (each one used one day, then washed)	13 masks (5x2 travels to work + 3 times shopping)
Washing	At the end of the day (at 60°C in half-full machine); total of 6 washing	-
Lifespan	5 washing cycles per mask (6 times use)	One-way masks
End-of-Life	Incineration	Incineration

Functional unit: one person in Switzerland wearing facemasks during one working week when traveling to work with public transports and going three times in a shop

Sensitivity analysis:

- lifespan (number of washing cycles)
- weight of the mask
- washing temperature
- design

Sensitivity Analysis




Possibilities to further **decrease impacts** of cotton mask:

- ➔ Increase the lifetime (nb of washing cycles)
- ➔ Decrease weight of the mask

Break-even points & Conclusion

	Carbon Footprint	nr-CED	Water Footprint	Ecological scarcity
Lifetime	/	/	425 washing cycles	22 washing cycles
Weight of cotton mask	12 g	15.7 g	/	/
Design	/	/	/	/
Washing behavior	Long and short hand-washing	Long hand-washing	/	/

➔ There is a **high potential** for increasing the environmental performance of facemasks !



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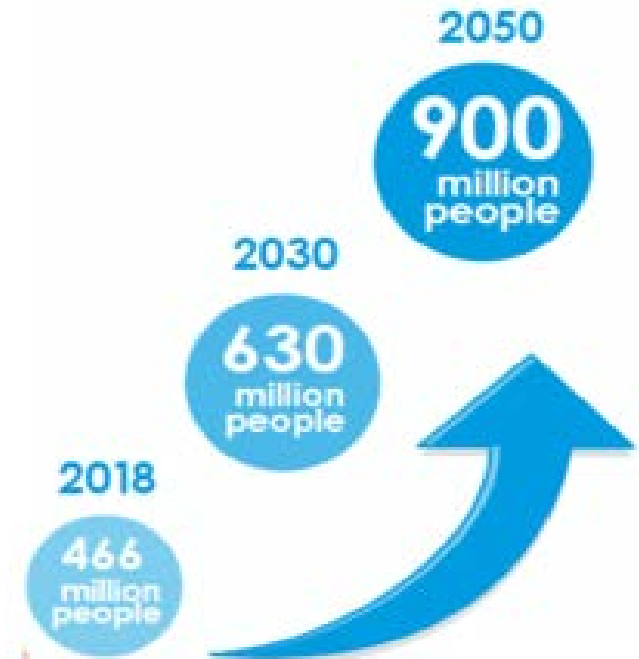
European Standardization Organizations

Sustainability of custom moulded hearing protectors: addressing the challenges through fit-testing

Erik De Muyenck

HearingCoach International BV (Business Development) and member of CEN/TC 159

Prevalence of hearing loss



Use & replacement earplugs

Disposable
earplugs



SINGLE USE

2 pair/day

0,18 Euro/pair
or 130 Euro/year



Custom moulded
earplugs

REUSABLE

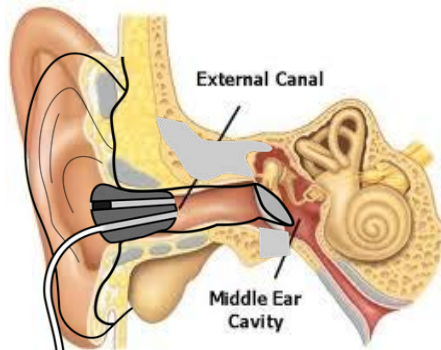
1 pair/# 4 year

100 Euro/set
or 25 Euro/year

Fit testing methods



SEAL



Pneumatically

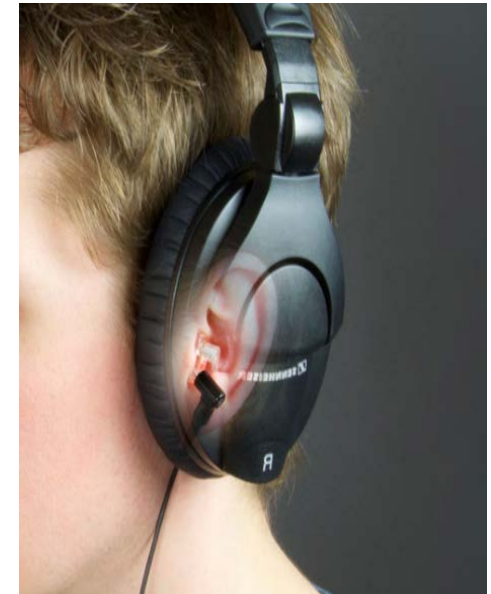


Acoustially

ATTENUATION

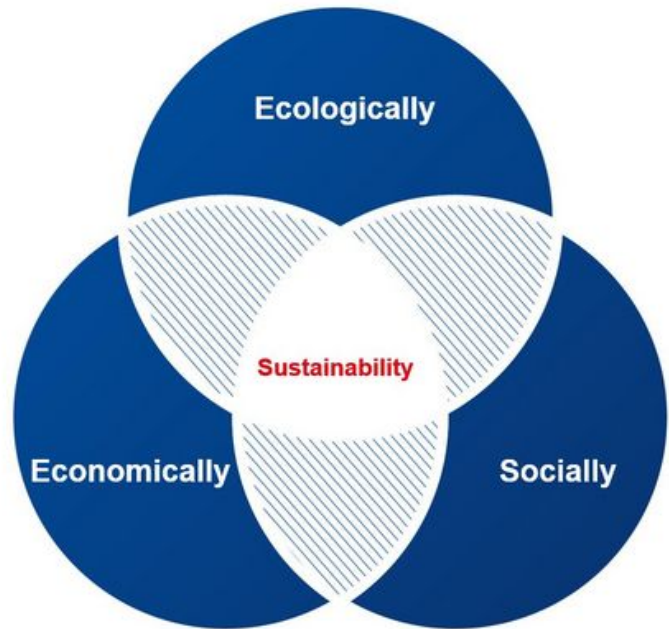


Audiometry



Microphone-in-Real-Ear

Benefits annual fit-testing



Ecologically

- Less hazardous waste (impression material, finished product)

Economically

- Prevents pointless, unnecessary replacements
- Extends the lifespan

Socially

- Guarantees 'proper function'
- Lowers risk associated with taking ear impressions

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!

