Promoting safe and extended use of wood products in health buildings through development of antimicrobial surfaces, hygiene concepts, and guidelines – WOOD for HEALTH

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Background

Wood has been experiencing a recent renaissance as construction material mainly due to its environmental assets. However, wood has the reputation of being prone to contamination and difficult to clean, which has limited its use in hospitals, healthcare units and other facilities with high demands towards surface hygiene. This is unfortunate as studies have shown that wood greatly aids the indoor environment quality (IEQ) and can be utilized to reduce energy use for heating and/or ventilation. This paper introduces new ERA-Net project WOOD for HEALTH aiming to solve this challenge.

Keywords: wood construction, health care buildings, hygiene.

Experimental

WOOD for HEALTH is a project of ERA-Net ForestValue program. The project commenced in February 1st, 2022, and will continue 36 months for each partner that started their work in slightly different times. It has seven partners from Finland, Germany, Latvia, Norway, and Sweden. It brings together expertise in wood chemistry & technology, polymer chemistry, microbiology, measurement technology and coating development. The project is coordinated by the University of Oulu, Finland. To support the project operators, both national expert groups and an international expert group will be set up. Representatives of wood construction industry, social welfare and health care services will take part.
WOOD for HEALTH will promote safe and increased use of wood products through the development of antimicrobial surfaces, hygiene concepts and by providing the first extensive guideline for use of wood in healthcare buildings. This will be in response to demands from both the construction industry, investors and owners of healthcare buildings.
The research team will explore the limits and potentials for wood products in healthcare buildings with an emphasis on surface aspects and use this exercise to develop a guideline. The aim of WOOD for HEALTH is to meet requirements set for health care buildings with wood products whose uncoated and coated surfaces are holistically characterized for their technical, environmental, and economic performance. Three coating approaches are employed at different TRL levels to balance risk and close-to-market aspects: the development of non-film-forming and film-forming coating systems by formulation as well as new binders by synthesis of non-leaching functional groups to the polymer. Natural polymers with antimicrobial effect will replace conventional toxic biocides.
To address challenges of wooden surfaces, the characterization includes all properties of importance in health facilities with respect to hygiene, mechanical and chemical resistance, photo-stability, flammability and water vapor damp diffusability.
A wide range of dissemination activities will communicate the project results to stakeholders and the scientific community throughout Europe.

Expected results

Several coatings improving cleanability and hygiene of wooden surfaces and decreasing microbial growth on wooden surfaces.
The first guideline for use of wood in health care buildings and their various spaces.

References

Webpages of WOOD for HEALTH project: https://www.woodforhealth.eu/

LinkedIn: https://www.linkedin.com/company/wood-for-health-project/