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INVITED SESSION

ETFE FILMS AND LAMINATES – NEW DEVELOPMENTS AND FINDINGS

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ABSTRACT

Global warming, increasing energy consumption and resource consumption worldwide, as well as the likewise increasing amounts of waste and emissions are central issues of the 21st century.

In this context, the construction industry, building sciences and society are called upon to develop and communicate innovative solutions. The energetic aspects of the building envelope are of particular importance here. This is because the enclosure of buildings in particular represents a large and mostly unused area that lasts for a long time.

Lightweight surface structures made of membranes, such as ETFE foils, are ideal as roofing or façade cladding in order to save enormous amounts of resources and emissions during production, transport, building and operation and also in the reuse of the separable raw materials. Translucent or translucent fabrics and films enable the generation of renewable energies in the form of solar heat or solar electricity, but also the purification of drinking water, the cooling of indoor spaces or the cultivation of natural products (e.g. in form of algae reactors). Such additional functions can already be performed by multifunctional membrane systems in addition to their actual task in the building envelope to create a space with suitable living conditions for people, animals and plants.

This invited session offers important contributions from scientists, planners and builders working on the development and use of new technologies in the field of translucent and transparent building envelopes made of ETFE films and the combination of films and fabrics (laminates). They report on innovative solutions and interesting experiences from science and practice.

REFERENCES

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