

FP7-ENERGY-2013-1

Research and development of innovative solar thermal facades

FLUIDGLASS

Solar Thermal Glass Facades with Adjustable Transparency

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Building simulation

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PU	Public	
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	X

FLUIDGLASS

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Executive Summary

The results of Task 4.3 are documented by the present deliverable. The aim of Task 4.3 was to set up a building simulation model that integrates the previously developed Fluidglass model (see D2.4) and thus facilitates the simulation of the thermal interactions between Fluidglass and the space to which it belongs. Thus, the existing Fluidglass model has been transferred into C++ code and integrated into the thermal simulation package TRNSYS. TRNSYS has then been used to model the specifics of the planned testing container (WP5) and to run a number of different simulations in order to predict the thermal container performance for the locations Vaduz and Cyprus. The results are currently used in WP5 for the layout of the HVAC system. During and after the operation of the container, the simulation model will be validated based on the results of the monitoring of the container in its different operational modes.

Additionally, this deliverable includes the remaining test results for the second prototype of the Fluidglass element and the according comparison to the Fluidglass simulation model that was documented in D2.4. The second prototype differs from the first prototype in that it contains two and not only one fluid layer. It is thus a more complex model. The agreement between model and measurement results is satisfactory and will be documented at the beginning of the present deliverable.