Rendered and ventilated rainscreen cladding

Jörgen Falk, Division of Building Materials, Lund University

During the past few years Sweden, has experienced severe problems due to moisture in rendered exterior walls with wood framing and face-sealed EIFS (Exterior Insulation and Finish Systems). As a result of this there is an ongoing transfer away from EIFS, favouring technical solutions that are utilizing the rainscreen principle. In the latter case render is not applied to thermal insulation but to a carrier board, separated from the underlying structure by battens to create an air cavity. If the cavity is designed with openings at the top and bottom, wind- and buoyancy-induced driving pressures will result in a ventilation airflow that provides potential for ventilation drying. However, in reality there is great uncertainty regarding the air change rate per hour (ACH).

The aim of this project was to examine the relations between cavity design, air change rate and ventilation drying when a ventilated rainscreen cladding is used. Differences depending on the choice of batten system: vertical wooden battens or horizontal, perforated metal battens, were especially examined. The results were published in a research report 2010. The full-text document (in Swedish) can be downloaded from www.byggnadsmaterial.se.

Experimental walls with different batten configurations

Example of measured air velocities

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**Contact information:** Jörgen Falk, tel +46706944398, email jorgen.falk@skanska.se