

To whom it may concern

Confirmation on paper contribution

I.H. Johnsen¹, E. Andenæs¹, L. Gullbrekken² and T. Kvande¹

Vapour resistance of wind barrier tape

To be submitted to Journal of Building Physics

¹Department of Civil and Environmental Engineering,
Norwegian University of Science and Technology (NTNU)

www.ntnu.no

²SINTEF Community

www.sintef.no

ABSTRACT: In the building industry, the interest into adhesive tape to achieve a more tight and robust building envelope has increased rapidly in recent years. With an increasing demand for energy efficiency in buildings, national building authorities are strengthening building requirements in order to mitigate and adapt to future climate impacts. This paper studies the water vapour permeability of adhesive tape for building purposes. A water vapour permeable wind barrier is essential to enable drying of the external side of the building envelope. Laboratory measurements have been conducted in order to evaluate how the drying conditions of the wind barrier layer are affected by the use of wind barrier tape. The results show that all the wind barrier tapes tested can be defined as significantly more vapour tight than the wind barrier itself. The wind barrier used as reference was found to have an s_d -value of 0.03 m while tape ranged between 1.2 and 8.9 m. In order to ensure adequate drying and minimize the risk of moisture damages, the wind barrier layer should be vapour open. In an investigated construction project, the amount of tape constitutes 13 % of the area of the building's wind barrier. Further simulations need to be conducted to accurately determine the drying conditions and the following consequences.

Ida-Helene Johnsen carried out the literature study, was the main responsible for the practical laboratory work, and is the main author of the article. She ensured that the procedure dictated by the standard NS-EN ISO 12572 was followed. She also set up the figures from the results of the research. The article is based on her Master Thesis.

Erlend Andenæs helped design the literature study and has been responsible for an efficient scientific writing process and the analytic cohesion of the analysis. He has been significant in challenging the industrial implications of the work.

Lars Gullbrekken has helped initiate the original research idea from a knowledge gap observed in the industry. He also contributed to the research design and the analysis and interpretation of the results.

Tore Kvande has served as the main supervisor and main contributor to the research design. He outlined the design of the test program, and contributed in the analysis and interpretation of the results.

The co-authors have during the process provided critical comments on the prepared manuscript by Ida-Helene Johnsen and they have all given final approval of the version to be published.



Ida-Helene Johnsen



Erlend Andenæs



Lars Gullbrekken



Tore Kvande