

Summary

Test results for the durability of connections of airtightness layers by means of adhesives and tapes

Prof. Dipl.-Ing. Thomas Ackermann, Fachhochschule Bielefeld, Abteilung Minden, Institut für Bauphysik und Baukonstruktion

1. Introduction

So that a building meets its requirements regarding stability, energy conservation and hygiene, it is not only necessary, that the airtightness layer is really airtight in its planary formation, but also that functionality is given within the range of plate or track joints as well as with connections and completions.

With the available contribution new realizations are to be represented regarding the durability of adhesives and tapes to different adjacent construction units and with course transitions of airtightness layers. Since the suitability of these connections should extend on the life span of a construction unit, in addition the adhesive strength of the connecting devices with consideration to different methods of the artificial aging of the used materials was examined. In addition the results of a newly-developed testing method are presented, which is to be geared to reality. The available investigations were accomplished at the scientific institut for thermic protection (Forschungsinstitut für Wärmeschutz, FIW) in Munich.

8. Analysis

An analysis of the inspection results from the peel tests shows that tendencies between aging and the adhesive strength are to be recognized at the binding of airtightness tracks by means of adhesives to adjacent building materials. Also the evaluation of the peel tests with adhesive tapes as connecting devices let such a correlation becomes visible.

Further it is to be stated, that the adhesion of adhesives on different substrates partly leads to a explicitly differing appraisal of the durability under alternative loading - in comparison to the peel test.

Apart from a discussion with the manufacturers of sticking tracks and adhesives as well as the experts concerned about the available results, also further investigations should be accomplished to aging behavior by adhesive bonds and the durability by airtightness tracks to adjacent building materials under alternative loading.