

Designing building facades to manage the risk of surface condensation and mould growth

This Technical Note is one of six on the thermal performance of building envelopes. The series comprises:

- 106: Fundamentals of heat transfer,
- 107: Thermal transmittance (U-values) for built-up walls,
- 108: Thermal bridges, Psi and Chi values,
- 109: Thermal bridges within SAP and NCM,
- 110: Designing building facades to manage the risk of surface condensation and mould growth,
- 111: Designing building facades to manage the risk of interstitial condensation.

Introduction

- 1 This Technical Note provides updated guidance to specifiers and designers of the suitable performance levels to manage the risk of condensation and mould growth on the inside face of a façade for buildings in the UK or similar climates.
- 2 The guidance in this Note has been written with new construction in mind. However, much of this guidance is applicable to refurbishments, particularly the calculation of the internal environment. Designers would need to consider which elements of this guidance are directly applicable, applicable with some modification and which elements are not applicable for each refurbishment project.
- 3 The performance requirements for limiting the risk of condensation and mould growth have become more onerous to reflect ever-tightening requirements for limiting air leakage through building envelopes and the consequential loss of unintended background ventilation that resulted.
- 4 In a move away from previous guidance, CWCT now recommends that temperature factors be used for the assessment for internal surface condensation resistance. This move also brings the CWCT guidance in line with the guidance provided by BRE report BR497 and paper IP 1/06.
- 5 Designers should be aware that the avoidance of condensation and mould growth extends beyond the design of the building envelope. It also requires that the design team make adequate provision for ventilation, and that the building occupier both uses the available ventilation in an appropriate manner and takes steps to limit the generation of airborne moisture. It is not possible to specify any standard of performance that will guarantee freedom from condensation and mould if there is inadequate ventilation and poor moisture management procedures.