

This Technical Note is one of two describing the procurement design and assessment of externally rendered cladding systems. They are:

TN 59 Introduction to externally rendered cladding systems

TN 60 Performance of externally rendered cladding systems

This Technical Note should also be read in conjunction with:

TN17 Weathertightness and drainage

TN33 Breather membranes and vapour control layers in walls

TN47 Overall building envelope U-values

TN52 Impact performance of cladding

TN55 Movement accommodation in building envelopes

Introduction

This Technical Note describes the performance required of an externally rendered cladding system and ways in which it should be assessed.

CWCT TN59 shows the need for a single designer to assess the overall performance of a wall constructed from many components and several layers, possibly by several specialist contractors.

CWCT TN59 also describes the lessons learnt from building envelope failures in North America.

The scope of the performance is extensive and detailed assessment may be beyond the knowledge of an individual. It is likely therefore that separate individuals will consider different aspects of performance. However each should consider the wall as a whole and there should be a single person who ensures that all aspects of performance have been appropriately considered.

Performance of an externally rendered cladding system should always be assessed against the following aspects of performance:

- Structural behaviour
- Water penetration resistance
- Thermal performance
- Fire performance
- Maintenance
- Durability
- Detailing

The wall may also have to be assessed for other aspects of performance such as acoustics.

Structural performance

Building envelopes are required to carry all anticipated loads and meet serviceability and safety requirements, CWCT Standard for systemised building envelopes. They are also required to accommodate movement of the structure and the cladding. Finally cladding systems have to be robust.

Serviceability

Requirements for structural performance are given in CWCT Standard for systemised building envelopes. Deflections caused by the design wind load should be limited to prevent cracking of either the external render or any internal