

SAFETY AND FRAGILITY OF GLAZED ROOFING: testing and assessment

Technical Note 66 describes a system for the classification of fragility of glass roofs. This Technical Note describes the testing and assessment of glass roofs to establish compliance with this classification system.

This Technical Note is one of eight describing the performance of glass. They are:

- TN61 Glass types*
- TN62 Specification of insulating glass units*
- TN63 Glass breakage*
- TN65 Thermal fracture of glass*
- TN66 Safety and fragility of glazed roofing: guidance on specification*
- TN67 Safety and fragility of glazed roofing: testing and assessment*
- TN68 Overhead glazing*
- TN69 Selection of glass to prevent falls from height*

Introduction

Technical Note 66 describes a system for the classification of fragility of glass roofs. The classification requires the glass roof to be tested to demonstrate acceptable performance. This Technical Note describes how these tests should be carried out.

This test sequence has been developed by the CWCT in collaboration with roof glazing designers, contractors and test houses, in response to concerns that existing standard tests for the fragility of roofing (e.g. ACR [M]001 Test for non-fragility of profiled sheeted roofing assemblies) were not readily applicable to glazed roofing.

It is intended that the CWCT test sequence will be adopted as a standard method of test for the fragility testing of glazed roofs. The test sequence is applied to the whole assembly, consisting of the glass, supporting structure, manner of fixing, glazing materials, and all other components rather than any single component.

The test sequence uses a combination of hard and soft body impacts and a static load test on the glazing system after fracture of the glass. The soft body impact tests are based on the ACR fragility test and the hard body impacts are based on BS EN 356.

A competent person should review the test procedures to ensure that the test sequence is applicable to the proposed building. This will include establishing test details, such as temperatures and any modifications to accommodate particular requirements of the building.

Competent person

A competent person is someone who can demonstrate that they have sufficient professional or technical training, knowledge, actual experience and authority to enable them to:

- a) Carry out their assigned duties at the level of responsibility allocated to them
- b) Understand any potential hazards related to the work (or equipment) under consideration
- c) Detect any technical defects or omissions in that work (or equipment)
- d) Recognise any implications for health and safety caused by those defects or omissions
- e) Be able to specify a remedial action to mitigate those implications.

In this context, a competent person is someone who can demonstrate a:

- a) Thorough knowledge of glazed roofing and of the mechanical and physical properties and behaviour of the glazed assemblies when subjected to this test; and
- b) Extensive knowledge and experience of installation of glass, its usage limitations, behaviour and mode of failure in service.

For these tests, the responsibilities of the competent person include ensuring that the worst-case scenario has been covered when:

- a) Defining the roof assembly to be tested
- b) Defining the impact position(s)
- c) Determining any conditioning of the samples and test temperatures
- d) Determining how glass is to be broken