Determination of snow loads applied to structures should be carried out in accordance with EN 1991-1-3:2003 [1, 2] with consideration to the National Annex applicable to the country in which the structure is being constructed.

This document is not intended to provide comprehensive guidance, only a brief understanding of the elements that will influence snow loads. EN 1991-1-3:2003 should be followed when assessing characteristic snow loadings on a structure.

When determining snow loadings, there are several key aspects; including climatic region, surrounding topography and roof slope.

CLIMATIC REGION

The basic snow load applied at 100 m above mean sea level, for the UK, is provided in the National Annex document to EN 1991-1-3. This provides snow loads based on location, ranging from 0.30 kN/m^2 in along some areas of the south coats and coast of Wales, to 0.85 kN/m^2 in outlying island regions. Figure NA.1 within the National Annex should be considered when carrying out the assessment.

TOPOGRAPHY

The standard also considers the surround topography, which will influence the potential for the removal of snow from roofs;

Table 1 - Topography Descriptions

Topography	Description
Windswept	Unobstructed areas without significant shelter from the wind
Normal	No significant removal of snow from the wind due to shelter from terrain or other buildings
Sheltered	Where the building is below surrounding terrain or building height, there will be negligible removal of snow from wind actions

ROOF SHAPE AND SNOW DRIFT

The distribution of a snow loading on a roof will be influenced by the shape. The amount of snow will be influenced by drift of additional snow from any surrounding structures, or roof elements on the same building.

The distribution of loadings for monopitch, duopuitch, multi-span and curved roofs will differ, and be dependent on the angles of the roof or roof elements. Where applicable, load arrangements are given for both undrafted and drift scenarios, as illustrated below.

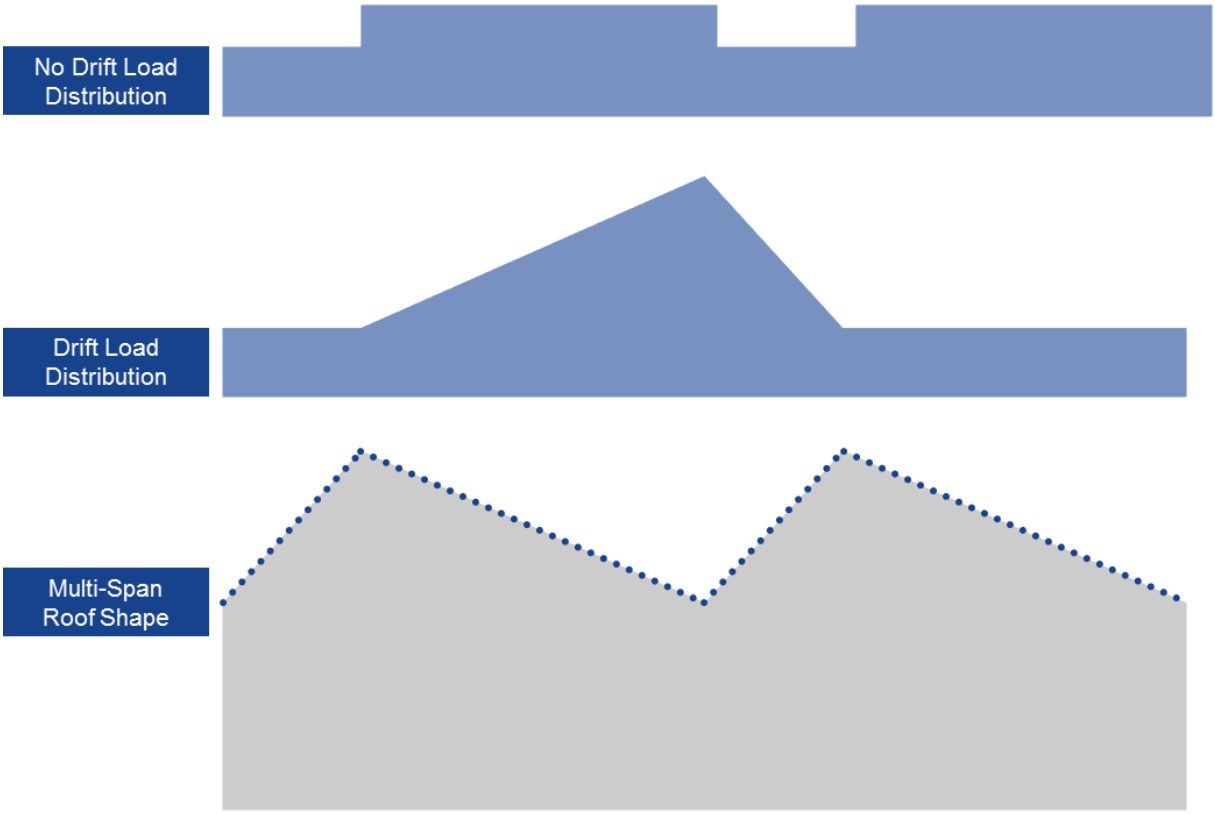

Figure 1 - Roof Shape Load Distributions (Illustrative)

A roof at angle of ≥ 60º from horizontal, snow would typically be expected to drift from a roof, and would be factored to zero.

REQUIREMENTS FOR ASSESSMENT

In order to fully assess glazing under snow loading, the characteristic relevant snow loads must be obtained for the roof areas under consideration. Once these loadings have been obtained, they can then be used as part of a combined load scenario, as per EN 1990:2002 [3, 4].

ALTERNATIVE STANDARDS

Within the UK, BS 5516-2:2004 [5] remains a current British Standard, and contains a highly simplified method for determining snow loadings, and can be used where accepted by relevant certifying authorities. This standard also contains load combination factors and design charts for the assessment of combined wind and snow loads.

BS 6399-3:1988 [6] is also commonly referenced, including by BS 5516-2. This standard contains a calculation method similar to EN 1991-1-3, however, it should be noted that this standard is withdrawn, and has been replaced by EN 1991-1-3 and the UK National Annex.

REFERENCES

[1] European Committee for Standardization, EN 1991-1-3:2003+A1:2015 - Eurocode 1. Actions on structures. General actions. Snow loads, CEN, 2003/2015.

[2] European Committee for Standardization, *NA to BS EN 1991-1-3:2003 - UK National Annex to Eurocode 1. Actions on structures. General actions. Snow loads,* CEN, 2003.

[3] European Committee for Standardization, *EN 1990:2002 - Basis of structural design,* CEN, 2002.

[4] European Committee for Standardization, *NA to BS EN 1990:2002+A1:2005 - UK National Annex for Eurocode - Basis of structural design,* BSI, 2002.

[5] British Standards Institute, *BS 5516-2:2004 - Patent glazing and sloping glazing for buildings. Code of practice for sloping glazing,* BSI, 2004.

[6] British Standards Institute, *BS 6399-3:1988 - Loading for buildings. Code of practice for imposed roof loads,* BSI, 1988.