The England, Wales, Scotland, Northern Ireland and Éire all have their own building regulations with regards to guards and barriers, as per the below;

Table 1 - UK & Ireland building regulations related to guarding

Country	Building Regulations	Section
England & Wales	Approved Document K [1]	K2 – Protection from Falling
Scotland	Domestic Handbook [2] Non-Domestic Handbook [3]	Section 4.4 – Pedestrian Protective Barriers
Northern Ireland	Technical Booklet H [4]	Section 5 – Guarding
Éire	Technical Guidance Document K [5]	Section 2 – Pedestrian and Vehicle Barriers

These documents are freely available from the respective government websites, and the documents appropriate to the location of the building under consideration should be consulted to ensure that local requirements are met.

BASIC REQUIREMENTS

The requirements are similar between the countries, with the below extracts taken from each countries individual regulations as to where guarding is required;

England & Wales, Approved Document K

In *dwellings*: Provide guarding that is capable of preventing people from being injured by falling from a height of more than 600 mm
In *buildings other than dwellings*: Provide guarding that is capable of preventing people from being injured by falling from a height of two risers (or 380 mm, if not part of a stair).

Scotland, Domestic & Non-Domestic Handbook

Every Building must be designed and constructed in such a way that every sudden change in level that is accessible in, or around, the building is guarded by the provision of pedestrian protective barriers.

It is not practical to provide a barrier at every change in level, but a protective barrier for pedestrians should be provided at the edge of:

- every floor, stair, ramp, landing, raised floor or other raised area to which people have access, where there is a difference in level of 600mm or more, and
- any change in direction on an access or circulation route which is raised above the level of the surrounding surfaces.

Northern Ireland, Technical Booklet H

Regulation 57 (Guarding)

A stair, ladder, ramp, floor, balcony, landing, platform and any roof or other place to which people normally have access (including access for the purpose of maintenance) and a sunken area next to a building, shall, where it is necessary to protect people approaching, accessing, moving between levels within or exiting that building from the risk of falling, be adequately guarded with a barrier which does not present a hazard.
Any part of a building which is a vehicle ramp, floor or roof to which vehicles have access shall, where it is necessary to protect people, be adequately guarded with a barrier which does not present a hazard.

Note, paragraph (3) of Regulation 54 (Application and Interpretation) provides additional guidance where the regulation above does not apply, including "*in relation to a flight within a stair with a total rise of less than 600 mm*" and "*in relation to a sunken area less than 600 mm in depth*".

Éire, Technical Guidance Document K

In a building the sides of every floor, balcony and every part of a roof to which people normally have access, and sunken areas connected to a building, shall be guarded to protect users from the risk of falling.

Guarding should be provided to the sides of any part of a raised floor, gallery, balcony, roof or any other place to which people have access (unless access is only for the purpose of maintenance or repair). Guarding should also be provided to the sides of raised floors of vehicle parks in buildings, ramps used for vehicle access, sunken areas connected to buildings and any similar area where it is necessary for the safety of persons in or about a building.
Guarding may not be essential where the total difference in levels is 600 mm or less.

Guarding need not be provided to places such as a loading bay or a stage where it would be incompatible with normal use.

These requirements typically do not provide guidance on requirements on glass types, but other sections of the building regulations for each country, and through the following codes of practice, do provide this.

GLASS TYPES AND ADDITIONAL GUIDANCE

Whilst Building Regulation documents provide the requirements for glazing and barriers, they do not provide specific details or guidance on design and applicable glass types. For glass types, requirements and guidance is provided by other sections of local Building Regulations, where human safety from impact is considered, as below:

Table 2 - UK & Ireland building regulations related to safety glass

Country	Building Regulations	Section
England & Wales	Approved Document K [1]	K4 – Protection Against Impact With Glazing
Scotland	Domestic Handbook [2] Non-Domestic Handbook [3]	Section 4.8 – Danger from Accidents
Northern Ireland	Technical Booklet V [6]	Section 2 – Limiting the Risk of Impact with Glazing
Éire	Technical Guidance Document D [7]	Section 1 - Materials

For barrier design requirements, the various Building Regulations make reference to National and International Codes of Practice and Standards, as follows:

Table 3 - UK & Ireland Codes of Practice related to guarding and safety glass

Codes of Practice	Test Standards
EN 1990:2002 [8] EN 1991-1-1:2002 [9, 10, 11] PD 6688-1-1:2011 [12] BS 6180:2011 [13] BS 6262-4:2005 [14]	EN 12600:2002 [15] BS 6206:1981 [16]

COMPLIANCE

When determining the load requirements for a building, local Building Control (or the equivalent certifying authority) should be consulted to ensure that the requirements for the specification will meet the requirements that will be placed upon the building when undergoing final approval.

Full consideration should be given to the requirements of Building Regulations as well as Eurocodes and any associated applicable documents.

REFERENCES

[1] HM Government, *The Building Regulations 2010 - Approved Document K - Protection from falling, collision and impact,* 2013.

[2] Riaghaltas na h-Alba, *Technical Handbook 2015 - Domestic,* Riaghaltas na h-Alba, 2015.

[3] Riaghaltas na h-Alba, *Technical Handbook 2015 - Non-Domestic,* Riaghaltas na h-Alba, 2015.

[4] Department of Finance and Personnel, *Building Regulations (Northern Ireland) 2012 Guidance - Technical Booklet H - Stairs, ramps, guarding and protection from impact,* DFPNI, 2012.

[5] Environment, Community and Local Government (Éire), *Building Regulations 2014 - Technical Guidance Document K - Stairways, Ladders, Ramps and Guards,* Government Publications (Éire), 2014.

[6] Department of Finance and Personnel, Building Regulations (Northern Ireland) 2012 Guidance - Technical Booklet V - Glazing, DFPNI, 2012.

[7] Environment, Community and Local Government (Éire), Building Regulations 2013 - Technical Guidance Document D - Materials and Workmanship, Government Publications (Éire), 2013.

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

[9] European Committee for Standardization, *EN 1991-1-1:2002 - Eurocode 1. Actions on structures. General actions. Densities, self-weight, imposed loads for buildings,* CEN, 2002.

[10] European Committee for Standardization, *NA to BS EN 1991-1-1:2002 - UK National Annex to Eurocode 1. Actions on structures. General actions. Densities, self-weight, imposed loads for buildings,* CEN, 2002.

[11] European Committee for Standardization, *NA to IS EN 1991-1-1:2002 - Irish Annex to Eurcode 1 - Actions on structures - Part 1-1: General actions - Densities, self-weight, imposed loads for buildings,* CEN, 2002.

[12] British Standards Institute, *PD 6688-1-1:2011 - Recommendations for the design of structures to BS EN 1991-1-1,* 2011: BSI.

[13] British Standards Institute, *BS 6180:2011 - Barriers in and about buildings. Code of practice,* BSI, 2011.

[14] British Standards Institute, *BS 6262-4:2005 - Glazing for buildings - Code of practice for safety related to human impact,* BSI, 2005.

[15] European Committee for Standardization, *EN 12600:2002 - Glass in building - Pendulum test - Impact test method and classification for flat glass,* CEN, 2002.

[16] British Standards Institute, BS 6206:1981 - Specification for impact performance requirements for flat safety glass and safety plastics for use in buildings, BSI, 1981.