A partition is defined by BS 5234-1:1992 [1] as an "*internal dividing non-loadbearing vertical construction*", and can be constructed of numerous materials, including glass. Although non-loadbearing is stated, it should not be assumed that the partition will not be subjected to loading during service, including loads from people.

Where a partition is deemed to be protecting people from a hazard, such as a drop, then it should be considered as a barrier, and the appropriate sections of Building Regulations and Codes of Practice for the UK and Éire would apply.

Where a partition provides a subdivision of internal space, with no other hazards, then both BS 5234-1:1992 [1] and BS 5234-2: 1992 [2] should be considered.

This document will focus on the requirements with regards to personnel (mechanical) loads during service, and associated criteria. Whilst other requirements exist, such as acoustics, fire protection, lighting and privacy, these aspects are outside the scope of this document. When designing partitions, the aforementioned standards should be considered in full.

STRENGTH & ROBUSTNESS

BS 5234-1:1992 categorises the strength and robustness requirements partitions by grades of duty, which are selected based on the use of space adjacent to the partitions and the chance of an accident or misuse occurring:

Table 1 – Partition grade of duty definitions

Grade	Use of Adjacent Space	Accident or Misuse	Examples
Light Duty (LD)	Only accessible to persons with a high incentive to exercise care	Small Chance	Domestic Accommodation
Medium Duty (MD)	Space moderately used, primarily by persons with some incentive to exercise care	Some Chance	Office Accommodation
Heavy Duty (HD)	Frequent use by public and others with little incentive to exercise care	Chance	Public Circulation Areas Industrial Areas
Severe Duty(SD)	Intensive use by public and others with little incentive to exercise care	Prone to vandalism and abnormally rough use	Major Circulation Areas Heavy Industrial Areas

In order for a partition to obtain a specific grade, testing should be carried out in accordance with BS 5234-2:1992, with various requirements for the test methods determining the grade:

Table 2 – Partition requirements based on grade of duty

Requirement		Units	Grade				Requirements
			LD	MD	HD	SD	
Stiffness		Deflection (mm)	25	20	15	10	Maximum Deflection (mm)
			5	3	2	1	Maximum Residual Deformation (mm)
Small Hard Body Impact	Surface Damage	Impact Energy (N.m)	3	3	6	10	Judgment of Indent
	Perforation		---	5	15	30	No Perforation of Facing
Large Soft Body Impact	Damage	Impact Energy (N.m)	20	20	40	100	2 mm Maximum Deformation
	Structural Damage		60	60	120	120	No Collapse or Dislocation
Door Slam		(No.)	20	20	100	100	No Damage and 1 mm Maximum Displacement

TEST METHODS

The primary test methods are detailed in full in BS 5234-2:1992, the scope of these tests is summarised below:

Table 3 – Partition test method overview

Requirement	Test Method	Assessment
Stiffness	Static horizontal load applied to the glass at a set position and for a defined duration	Deformation under testing and residual deformation determined
Small Hard Body Impact	Impact from a 3 kg, 50 mm diameter steel sphere from varying heights depending upon requirement	Damage assessed and any indentations measured. Any perforation of the partition noted.
Large Soft Body Impact	Impact from a 50 kg, glass bead filled punchbag, from varying heights depending upon requirement	Assess for surface damage or deformation of the partition. Any collapse of the partition noted.
Door Slam	Simulated slamming of a door leaf, a number of times dependent upon the partition grade, within the partition construction	Assess damage to the partition and any residual displacement.

Additional tests are also described where crowd pressure or anchorages (objects attached to the partition) are considered. In a similar manner to barrier loading, crowd pressure requires testing with a horizontal uniformly distributed line load applied to the partition.

GLASS TYPES FOR PARTITIONS

Partitions will typically be present in areas defined as critical locations by Building Regulations within UK and Éire. As such, where glass is being used, either as the whole, or part, of a partition, the guidance provided by these sections of building regulations, and associated Codes of Practice, should be followed.

Table 4 – Glass types for partitions

Country	Building Regulations	Section
England & Wales	Approved Document K [3]	K4 – Protection Against Impact With Glazing
Scotland	Domestic Handbook [4] Non-Domestic Handbook [5]	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

REFERENCES

[1] British Standards Institute, *BS 5234-1:1992 - Partitions (including matching linings). Code of practice for design and installation,* BSI, 1992.

[2] British Standards Institute, *BS 5234-2:1992 - artitions (including matching linings). Specification for performance requirements for strength and robustness including methods of test,* BSI, 1992.

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

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

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

[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.