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BRITISH STANDARD CODE OF PRACTICE

CP 3 : Chapter V : Part 1 : 1967

**CODE OF BASIC DATA FOR THE
DESIGN OF BUILDINGS**

CHAPTER V

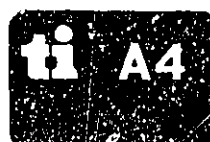
LOADING

Part 1. Dead and imposed loads

Incorporating amendments issued November 1968 (AMD 141),
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**THE COUNCIL FOR CODES OF PRACTICE
BRITISH STANDARDS INSTITUTION**

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CHAPTER V LOADING

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This Part of the Code makes reference to the following British Standards:

BS 153 Steel girder bridges.

BS 330 Conversion factors and tables.

BS 648 Schedule of weights of building materials.

BS 2655 Electric lifts.

British Standard Codes of Practice are revised, when necessary, by the issue either of amendment slips or of revised editions. It is important that users ascertain that they are in possession of the latest amendments or editions.

The following BSI references relate to the work on this Code of Practice:

Committee reference BLC/23

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BRITISH STANDARD CODE OF PRACTICE CP 3

Chapter V. LOADING

Part 1. Dead and imposed loads

FOREWORD

This edition of the Code has been prepared as a revision of the 1952 edition. In order to make available as soon as possible the revised data on dead and imposed loads, it was decided to issue this as a separate part. The data on wind loads will be issued later as Part 2.

In this Code, numerical values have been given in terms of SI units, details of which are to be found in BS 3763*. For the convenience of those who wish to use them, approximate equivalents are also given in metric technical units and in British units; more accurate conversions can be obtained from BS 350†. For the purposes of this Code, the principal difference between SI units and metric technical units lies in the measurement of force, load and load intensity. The SI unit of force and load is the newton (abbreviation: N); it is that force which, when acting on a mass of 1 kg, imparts to it an acceleration of 1 m/s². Thus, under conditions of standard gravity, the following relationships apply:

$$1 \text{ kgf} \equiv 9.806 65 \text{ N (exact value)}$$

$$1 \text{ lbf} \equiv 4.448 \text{ N (approximately)}$$

1. SCOPE

1.1 This part of the Code gives dead and imposed loads which shall be taken into account in designing buildings and certain other structures. It applies to:

- (1) new buildings and new structures;
- (2) alterations and additions to existing buildings and existing structures; and
- (3) existing construction on change of use.

It does not apply to the maintenance of, or the replacement of parts of, existing buildings and structures where there is no change of use.

* BS 3763, 'International System (SI) units'.

† BS 350, 'Conversion factors and tables'.

1.2 This Part of the Code does not cover:

- (1) loads on road and rail bridges, as these are dealt with in other specifications and Codes of Practice, e.g. BS 153*;
- (2) any wind loads (see Part 2);
- (3) loads on structures subject to internal pressure from their contents (e.g. bunkers, silos and water tanks), which should be calculated individually;
- (4) loads due to machinery vibration, except those due to some gantry cranes (see 7.1);
- (5) loads due to lifts (see BS 2655†);
- (6) loads incidental to construction; and
- (7) test loads.

2. DEFINITIONS

2.1 For the purposes of this Part of the Code, the following definitions apply:

Dead load. The force due to the static weight of all walls, partitions, floors, roofs and finishes, including all other permanent construction.

Imposed load. The load assumed to be produced by the intended occupancy or use, including distributed, concentrated, impact, inertia and snow loads, but excluding wind loads.

Wind load. All loads due to the effect of wind pressure or suction.

3. DEAD LOADS

3.1 Dead loads shall be calculated from the unit weight given in BS 648‡ or from the actual known weights of the materials used.

Where partitions are shown in the plans, their actual weights shall be included in the dead load. To provide for partitions where their positions are not shown on the plans, the beams, and the floor slabs where these are capable of effective lateral distribution of the load, shall be designed to carry, in addition to other loads, a uniformly distributed load per square metre of not less than one third of the weight per metre run of the finished partitions, but not less than 1 kN/m² (102 kgf/m²) if the floor is used for office purposes. In British units the uniformly distributed load per square foot shall be not less than one tenth of the weight per foot run, and for offices not less than 20.5 lbf/ft².

The weight of tanks and other receptacles, and of their contents, shall be considered as dead load; account shall be taken of the load conditions when a tank or receptacle is full and when it is empty.

* BS 153, 'Steel girder bridges'.

† BS 2655, 'Electric lifts'.

‡ BS 648, 'Schedule of weights of building materials'.



4. IMPOSED FLOOR AND CEILING LOADS

4.1 Floors. The loads appropriate to the different uses to which the parts of a building or structure may be put are given in Table 1. The distributed loads are the equivalent uniformly distributed static loads per square metre (or per square foot) of plan area and provide for the normal effects of impact and acceleration, but not for any special concentrated loads.

All floor slabs shall be designed to carry the appropriate distributed or concentrated imposed load, as given in Table 1, whichever produces the greater stresses in the part of the floor slab under consideration. In the design of floor slabs, concentrated loads shall be considered to be applied in the positions which produce the maximum stresses and, where deflection is the design criterion, in the positions which produce maximum deflections. The concentrated imposed load need not be considered where the floor slabs are capable of effective lateral distribution of this load.

All beams shall be designed to carry the distributed load appropriate to the uses to which they are to be put, as given in Table 1.

Beams, ribs and joists spaced at not more than 1-m (40-in) centres may be designed as floor slabs.

Where, in Table 1, no values are given for concentrated load, it may be assumed that the tabulated distributed load is adequate for design purposes.

4.2 Ceiling supports, skylights and similar structures. The supports of ceilings (other than false ceilings), ribs of skylights, frames and coverings (other than glazing) of access hatches and similar structures shall be designed for the following loads:

*As altered
Sept. 1972*

(1) 0.25 kN/m^2 (25 kgf/m^2 ; 5.2 lbf/ft^2) distributed uniformly over the whole area or area supported; and

(2) 0.9 kN (91.8 kgf ; 202 lbf) concentrated over a length of 125 mm (5 in) or, in the case of coverings, over a square of 125 mm (5 in) side so placed as to produce maximum stresses in the affected members.

Where any member will in no circumstances need to support the weight of a man, the concentrated load provided in (2) may be neglected. The concentrated load should be considered to act at the same time as the distributed load and may be treated as a short term load.

False ceiling means a ceiling which is built with a space between it and the structure above and which satisfies at least one of the following conditions relating to access to that space:

- (1) The space is inaccessible, or
- (2) The ceiling is demountable for access, or
- (3) The space is provided with catwalks supported independently.