

Specification for

Metal channel cable support systems for electrical installations

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- ASTA Certification Services
- Association of Manufacturers Allied to the Electrical and Electronic Industry (BEAMA Ltd.)
- Association of Supervisory and Executive Engineers
- British Electrical Systems Association (BEAMA Ltd.)
- Chartered Institution of Building Services Engineers
- Confederation of British Industry
- Electrical Installation Equipment Manufacturers' Association (BEAMA Ltd.)
- Electricity Supply Industry in England and Wales
- Gland Manufacturers Technical Committee
- Light Metal Founders' Association
- National Inspection Council for Electrical Installation Contracting
- Rotating Electrical Machines Association (BEAMA Ltd.)
- Zinc Development Association

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Foreword

This British Standard has been prepared under the direction of the Power Electrical Engineering Standards Committee. It is based on a proposal by the British Electrical Systems Association.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 8, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

0 Introduction

The metal channels, brackets and other metal components of the system covered by this standard are used to make load-bearing frameworks. The assessment of load-bearing capabilities involves principles of analysis covered by BS 5950-5, as well as certain other considerations outlined in this standard.

The designer of an installation needs to know the properties of sections and strength of materials of the components used in manufacture. He also needs data on the performance characteristics of some components. All these data should be readily available from the supplier.

1 Scope

This British Standard specifies requirements and type tests for channels, brackets and other metal components used in metal channel systems intended for the mechanical support of cables, cable tray, cable ladder and other equipment in an electrical installation.

NOTE The titles of the publications referred to in this standard are listed on the inside back cover.

2 Definitions

For the purposes of this British Standard the following definitions apply.

2.1 channel

a formed component of regular cross section, the longitudinal edges of which are turned inwards through 180° to form a “U” shape (see standard sheet 1)

2.2 brackets

devices designed to provide mechanical strength to the joints when used to connect channel together to form framework

2.3 channel nut

an internally threaded device designed to fit inside the channel at any point along its length, providing a means of attachment

2.4 channel tee bolt

an externally threaded device designed to fit inside the channel at any point along its length, providing a means of attachment

2.5 axis X-X

the axis that passes through the centroid of the section and is parallel to the open face of the channel (see standard sheet 1)

2.6 axis Y-Y

the axis that passes through the centroid of the section and is perpendicular to the axis X-X (see standard sheet 1)

2.7 multiple configuration

an arrangement of single channels which are joined down their length (see Figure 1)

2.8 stainless steel

a steel having increased and inbuilt corrosion resistance in the uncoated state due to the properties imparted to the steel during manufacture by the addition of between 10 % and 35 % chromium

2.9 plain steel

a steel of the non-stainless type which has not been given a separately applied protective coating against corrosion

2.10 special finish

any finish except hot-dip or other zinc coating

3 Design data and calculation of safe working loads

3.1 General

The component data listed in 3.2 to 3.6 shall be provided by the manufacturer.

3.2 Channel

NOTE 1 The values will be either the nominal manufacturing dimensions or calculated from them.

NOTE 2 Where the section has holes along its length this should be taken into account.

- a) Mass per unit length of section (in kg/m).
- b) Overall height and width of section (in mm).
- c) Thickness of material (in mm).
- d) Area of section (in mm²).
- e) Size and location of any holes (in mm).
- f) Position of centroid of section (in mm).
- g) Second moment of area of section about X-X and Y-Y axes (in mm⁴).
- h) Minimum yield stress of the material (in N/mm²) (see BS 18).
- i) Minimum ultimate tensile strength (in N/mm²).