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W/d + s/s by 497: P 1: Oct 1966 1881  
+ 2 amendments

**BRITISH STANDARD 497: 1967**

UDC 69.027.83:696.13

SPECIFICATION FOR

**CAST MANHOLE COVERS, ROAD  
GULLY GRATINGS AND FRAMES  
FOR DRAINAGE PURPOSES**



**BRITISH STANDARD INSTITUTION**

SPECIFICATION FOR  
CAST MANHOLE COVERS, ROAD  
GULLY GRATINGS AND FRAMES

FOR DRAINAGE PURPOSES

BS 497 : 1967

Price 20/- net

BRITISH STANDARDS INSTITUTION  
INCORPORATED BY ROYAL CHARTER  
BRITISH STANDARDS HOUSE, 2 PARK ST., LONDON, W.1  
TELEGRAMS: STANDARDS LONDON W1      TELEPHONE: MAYFAIR 9000

## CONTENTS

## Page

Co-operating organizations	5
Foreword	6

## SPECIFICATION

## 1. GENERAL

1.1 Scope	7
1.2 Materials	7
1.3 Manufacture and workmanship	7
1.4 Dimensions	8
1.5 Weights of units	8
1.6 Protective coating	8
1.7 Sampling for loading test compliance and cost of tests	8
1.8 Loading test	9
1.9 Inspection	9
1.10 Certificate	9
1.11 Marking	9

## 2. MANHOLE COVERS AND FRAMES

2.1 Grades	10
2.2 Types	10
2.3 Test loads	10

## 3. ROAD GULLY GRATINGS, COVERS AND FRAMES

3.1 Grades	11
3.2 Types	11
3.3 Test loads	11

## 4. FIGURES AND TABLES OF DIMENSIONS\*

Fig. and Table 1. Grade A (heavy duty) double triangular cover and frame	12-13
Fig. and Table 2. Grade A (heavy duty) single triangular cover and frame	14-15
Fig. and Table 3. Grade A (heavy duty) double triangular ventilating cover and frame	16-17
Fig. and Table 4. Grade B (medium duty) circular cover and frame	18-19
Fig. and Table 5. Grade B (medium duty) rectangular cover and frame	20-21

## 4. FIGURES AND TABLES OF DIMENSIONS\* (contd.)

## Page

Fig. and Table 6. Grade C (light duty) single seal flat type inspection cover and frame	22-23
Fig. and Table 7. Grade C (light duty) double seal flat type inspection cover and frame	24-25
Fig. and Table 8. Grade C (light duty) single seal recessed type inspection cover and frame	26-27
Fig. and Table 9. Grade C (light duty) double seal recessed type inspection cover and frame	28-29
Fig. and Table 10. Grade D (heavy duty) straight bar double triangular gully grating and frame in cast iron	30-31
Fig. and Table 11. Grade D (heavy duty) straight bar double triangular gully grating in cast steel with cast iron frame	32-33
Fig. and Table 12. Grade E (medium duty) straight bar gully grating and frame for gradients under 1 in 50	34-35
Fig. and Table 13. Grade E (medium duty) storm bar gully grating and frame for gradients of 1 in 50 and steeper	36-37
Fig. and Table 14. Grade E kerb type gully cover and frame	38-39
Fig. 15. Detail of keyholes and keys for Grades A, B, C and E covers	40
Fig. 16. Method of using measuring bridge	41
Fig. 17. Typical diagram of measuring bridge	42

## APPENDICES

A. Loading test	43
B. Weights of units	45

\* Tables of approximate metric equivalents are also provided.

THIS BRITISH STANDARD, having been approved by the Hardware and Ironmongery Industry Standards Committee and endorsed by the Chairman of the Building Divisional Council, was published under the authority of the General Council on 31st May, 1967.

First published, July, 1933.

First revision, December, 1945.

Second revision, July, 1952.

Third revision, May, 1967.

The Institution desires to call attention to the fact that this British Standard does not purport to include all the necessary provisions of a contract.

In order to keep abreast of progress in the industries concerned, British Standards are subject to periodical review. Suggestions for improvements will be recorded and in due course brought to the notice of the committees charged with the revision of the standards to which they refer.

A complete list of British Standards, numbering over 4000, fully indexed and with a note of the contents of each, will be found in the British Standards Yearbook, price 15s. The BS Yearbook may be consulted in many public libraries and similar institutions.

This standard makes reference to the following British Standards:

BS 592. Carbon steel castings for general engineering purposes.

BS 907. Dial gauges for linear measurement.

BS 915. Black bolts, screws and nuts.

BS 1452. Grey iron castings.

BS 1610. Methods for the load verification of testing machines.

BS 3100. Steel castings for general engineering purposes.

*British Standards are revised, when necessary, by the issue either of amendment slips or of revised editions. It is important that users of British Standards should ascertain that they are in possession of the latest amendments or edition.*

The following BSI references relate to the work on this standard:  
Committee reference H1B/16      Draft for comment D65/7940

## CO-OPERATING ORGANIZATIONS

The Hardware and Ironmongery Industry Standard Committee, under whose supervision this British Standard was prepared, consists of representatives of the following Government departments and scientific and industrial organizations:

- Aluminium Federation
- \*British Ironfounders' Association
- British Lock and Latch Manufacturers' Association
- British Plastics Federation
- \*British Waterworks Association
- Copper Development Association
- \*Greater London Council
- Guild of Architectural Ironmongers
- \*Institution of Municipal Engineers
- Metal Window Association
- Metropolitan Police
- \*Ministry of Public Building and Works
- \*Ministry of Technology—Building Research Station
- National Brassfoundry Association
- \*National Federation of Builders' and Plumbers' Merchants
- National Federation of Building Trades Employers
- National Federation of Ironmongers
- \*Royal Institute of British Architects
- The Royal Institution of Chartered Surveyors
- Zinc Development Association

The Government departments and scientific and industrial organizations marked with an asterisk in the above list, together with the following, were directly represented on the committee entrusted with the preparation of this British Standard:

- Association of London Borough Engineers and Surveyors
- Association of Public Health Inspectors
- British Mechanical Engineering Association
- British Steel Founders' Association
- British Valve Manufacturers' Association
- County Surveyors Society
- Electricity Council, the Generating Board and the Area Boards in England and Wales
- Gas Council
- Institute of Works and Highways Superintendents
- Institution of Civil Engineers
- Institution of Gas Engineers
- Ministry of Transport
- Ministry of Transport—Road Research Laboratory
- National and Midland Ironfounders' Association
- Post Office
- Water Companies' Association
- Individual manufacturers

BRITISH STANDARD SPECIFICATION FOR  
CAST MANHOLE COVERS,  
ROAD GULLY GRATINGS AND FRAMES,  
FOR DRAINAGE PURPOSES

FOREWORD

This British Standard for cast manhole covers, road gully gratings and frames was first issued in 1933 and revised in 1945 and 1952. As a result of experience gained through the application of the standard over a further period of years certain modifications have been incorporated in the present revised issue.

In this revision the loading test requirements have been amended. The Committee responsible for the preparation of the standard accepted the fact that manufacturers only tested representative samples of the manhole covers and gratings produced and have introduced a clause for sampling a consignment for testing purposes. A new clause to cover testing procedure has also been inserted and an appendix, giving details of the testing procedure to be adopted, has been added. The clause covering grading has also been amended to provide classes related to 'approximate wheel loads' and the method of listing 'types' has been simplified. To avoid ambiguity, gully gratings Grades A and B have been reclassified as Grades D and E. The old Grade C kerb type gully cover and frame design has been modified and strengthened to withstand a standard duty (Grade E) loading.

Other changes have also been introduced, e.g.

- (1) The deletion of the lamphole cover and frame.
- (2) A new Grade 'A' 27 in (686 mm) ventilating double triangular manhole cover.
- (3) The re-introduction of the heavy duty cast steel gully grating.
- (4) Improved designs of the gully gratings, gully covers and frames in Grade E (see above).
- (5) A new design for light duty recessed covers and frames.
- (6) The introduction of a system of identification numbers.
- (7) A number of dimensional revisions.

NOTE 1. In place of the customary but incorrect use of the pound as a unit for force, the unit called the pound-force (abbreviation lbf) has been used in this standard. It is the force which, when acting on a body of mass one pound, gives it an acceleration equal to that of standard gravity.

NOTE 2. The figures in British units are to be regarded as the standard. The metric conversions are approximate. More accurate conversions should be based on the tables in BS 350, 'Conversion factors and tables'.

SPECIFICATION

1. GENERAL

1.1 Scope

This British Standard specifies requirements for:

- (1) Cast iron manhole covers, inspection covers and frames.
- (2) Cast iron and cast steel road gully gratings, and cast iron gully covers and frames.

The standard is divided into four sections, as follows:

Section 1 specifies general requirements applicable to the articles covered in Sections 2 and 3.

Section 2 deals with cast iron manhole covers, inspection covers and frames.

Section 3 deals with road gully gratings, covers and frames.

Section 4 contains figures and tables of dimensions and includes details of keyholes and keys.

1.2 Materials

1.2.1 *Cast iron units.* The metal used for the manufacture of castings included in this specification shall be suitable for the method of manufacture and shall be of a quality not less suitable than that specified in BS 1452, Grade 10\*.

1.2.2 *Cast steel (heavy duty) gully grating units* shall be manufactured in Grade A quality as specified in BS 592†.

1.2.3 *Bolts for Grade A double triangular covers and Grade D grating* shall be mild steel, suitably protected against corrosion‡. Bolts shall be hexagon headed, complying with BS 916§, ¾ inch in diameter, of suitable length, each complete with a hexagon nut. They shall be threaded only part way to prevent undue tightening of the components.

1.3 Manufacture and workmanship

All covers, gratings and frames shall be cleanly cast and shall be free from airholes, sand holes, cold shuts and chill. They shall be neatly dressed and carefully fettled. All castings shall be free from voids, whether due to shrinkage, gas inclusions or other causes.

\* BS 1452, 'Grey iron castings'.

† BS 592, 'Carbon steel castings for general engineering purposes'. (Included in BS 3100,

'Steel castings for general engineering purposes'.)

‡ If specified by the purchaser, non-ferrous bolts shall be supplied.

§ BS 916, 'Black bolts, screws and nuts'.