



BS 7263: Part 1 : 1990

UDC 625.888 : 666.97 : 620.1 : 006.3/8

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British Standard

Precast concrete flags, kerbs, channels edgings and quadrants

Part 1. Specification

Bordures, caniveaux, bords et quadrants en béton préfabriqué
Partie 1. Spécifications

Bordsteine, Rinnsteine, Randsteine und Quadranten aus
Fertigteilbeton
Teil 1. Anforderungen

British Standards Institution

Foreword

This Part of BS 7263 has been prepared under the direction of the Road Engineering Standards Policy Committee and supersedes BS 340 and BS 368 which are withdrawn.

There is no requirement in this standard for conditioning units, i.e. adjusting the moisture content, before carrying out the transverse strength test. This is because preliminary work has not indicated a regime which gives consistent results. However, investigations are continuing and it is anticipated that requirements for conditioning will be added in due course.

A spalling problem with kerbs has occurred in some parts of Scotland but at present there is insufficient data to be able to define the type and magnitude of the defects which could cause failure. Trials are being carried out using a test that reveals internal fissures which can occur during kerb manufacture. Many of the kerbs recognized as having this problem are of sections not included in this British Standard or BS 340.

Due to difficulties in establishing an effective air entrainment level for wet cast flags (see appendix E) these products have been omitted for the time being.

Requirements for the dimensions of surface features on tactile flags have been included. These flags are intended for use at pedestrian crossings, where they may be located by the sense of touch as well as sight.

Specifiers should be aware that pavements used for both vehicular and pedestrian traffic may polish in a similar manner to carriageways, although experience over the last 20 years with flags complying with BS 368 has shown this to be a rare occurrence.

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

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Specification

1 Scope

This Part of BS 7263 specifies requirements for the following precast concrete products:

- (a) wet pressed and semi-dry flags (see appendix E);
- (b) kerbs;
- (c) channels;
- (d) edgings;
- (e) quadrants.

These precast concrete products, referred to as a product or products in this Part of BS 7263, are intended for use in the construction of carriageways and footways laid in accordance with BS 7263 : Part 2.

NOTE 1. Appendix D gives recommendations on information to be given to a manufacturer in an enquiry or order.

NOTE 2. Appendix F gives guidance on suitability of paving flags for various uses.

NOTE 3. Precast concrete paving blocks are covered by BS 6717.

NOTE 4. The titles of the publications referred to in this Part of BS 7263 are listed on the inside back cover.

2 Definitions

For the purposes of this Part of BS 7263 the definitions in BS 6100 : Subsection 1.5.1, from which the following definitions are taken, apply.

- 2.1 nominal size. The size which identifies a component.
- 2.2 work size. The target size of a building component specified for its manufacture.

3 Binders

Products shall be made using one or more of the binders complying with the appropriate British Standards as given in table 1.

4 Aggregates

Products shall be made using one or more of the aggregates complying with the appropriate standards as given in table 2.

5 Water

The water shall be either of drinking quality or shall comply with BS 3148.

6 Admixtures

Admixtures shall comply with the uniformity requirements of BS 5075 and if appropriate, with the acceptance tests of that standard.

Type of binder	Standard to be complied with
Portland cement	BS 12
Portland blastfurnace cement	BS 146 : Part 2
Sulphate-resisting Portland cement	BS 4027
Portland pulverized-fuel ash cement	BS 6588
Pulverized-fuel ash*	BS 3892 : Part 1
Ground granulated blastfurnace slag	BS 6699
Lime	BS 890
Low heat Portland blastfurnace cement	BS 4246 : Part 2
Pozzolanic cement with pulverized-fuel ash as pozzolana	BS 6610

*Where pulverized-fuel ash is used the proportions and properties of the combination with Portland cement shall comply with BS 6588 or BS 6610.

†Where ground granulated blastfurnace slag is used the proportions and properties of the combination with Portland cement shall comply with BS 146 : Part 2 or BS 4246.

Type of aggregate	Standard to be complied with
Natural aggregates	BS 882 : 1983 (except grading requirements in clause 5)
Air-cooled blastfurnace slag	BS 1047 : 1983 (except grading requirements in 4.8)
Pulverized-fuel ash	BS 3892 : Part 2
Ground granulated blastfurnace slag	BS 6699

7 Pigments

Pigments shall comply with BS 1014.

8 Air content

The concrete used in kerbs, channels, quadrants and edgings produced by the wet cast process (see appendix E) shall have the following entrained air contents, measured in accordance with BS 1881 : Part 106:

- (a) products with 14 mm nominal maximum aggregate size: $6\% \pm 1.5\%$;
- (b) products with 20 mm nominal maximum aggregate size: $5\% \pm 1.5\%$.

9 Finish

Products described as 'natural' shall contain no pigment (see D.1(a)). Where products are made with two-part mixes the surface layer shall be not less than 12 mm thick for flags or not less than 25 mm thick for all other products. The surface layer shall be produced as an integral part of the product.

All arrises that will be visible after laying shall be without nibs and fins.

10 Dimensions and tolerances

10.1 Dimensions

10.1.1 *Flags*. Sizes of flags shall be as given in table 3.

Flag type	Nominal size	Work size	Thickness
	mm	mm	mm
A	600 x 450	598 x 448	50 or 63
B	600 x 600	598 x 598	50 or 63
C	600 x 750	598 x 748	50 or 63
D	600 x 900	598 x 898	50 or 63
E	450 x 450	448 x 448	50 or 70
F	400 x 400	398 x 398	50 or 65
G	300 x 300	298 x 298	50 or 60

NOTE. Tactile flags type TA are normally available in sizes of flag types E, F and G with an average thickness of 50 mm. Tactile flags are thus designated type TA/E, TA/F or TA/G depending on their size.

Tactile flags shall be provided with domes on the wearing surfaces which shall have the dimensions and spacings shown in figure 1(t).

A wearing surface edge chamfer with dimensions 5 ± 1 mm vertically and 5 ± 1 mm horizontally, measured at right angles, shall be provided on flags type E, F and G (see D.2(c)), unless otherwise specified.

10.1.2 *Kerbs, channels and edgings*. Kerbs, channels and edgings shall have the sizes shown in figure 1 and shall have a length in the range 450 mm to 915 mm. The length shall be measured along the vertical contact face between the kerb and channel. The radius of the vertical contact face of a kerb or channel shall be as given in table 4.

All angles except those resulting from splayed, radiused or chamfered faces meeting as shown in figure 1 shall be square.

External only		Internal and external			
m		m			
1.0	2.0	3.0	4.5	6.0	7.5
		9.0	10.5	12.0	

10.1.3 *Quadrants*. Quadrants shall have the sizes shown in figure 1(q), with faces to match the profiles shown in figure 1(a), (b), (d) or (e), for kerbs type BN, SP, HB2 or HB3 respectively.

10.1.4 *Dropper kerbs*. Dropper kerbs shall have the sizes shown in figure 1(k) or (l), dropper kerb type 1 or type 2 respectively.

10.2 Tolerances

10.2.1 *Flags*. The maximum dimensional deviations of any flag, measured in accordance with appendix A, shall be as follows:

- (a) thickness: ± 3 mm;
- (b) dome height (tactile flags): ± 1 mm;
- (c) length and width: ± 2 mm;
- (d) squareness of plan (difference between diagonals):
 - (1) flag types A, B, C, D: 6 mm;
 - (2) flag types E, F, G: 3 mm;
- (e) flatness, winding and bowing:
 - (1) measured over 550 to 850 mm: ± 2 mm;
 - (2) measured over 250 to 400 mm: ± 1 mm.

10.2.2 *Kerbs, channels and edging*. The maximum dimensional deviations of any kerb, channel and edging, measured as described in appendix A, shall be as follows:

- (a) length, width or height: ± 3 mm;
- (b) straightness and winding:
 - (1) measured over 550 to 850 mm: ± 2 mm;
 - (2) measured over 250 to 400 mm: ± 1 mm;
- (c) squareness: 2 mm clearance.

11 Transverse strength

11.1 Flags

When sampled and tested as described in appendix B, the failing loads shall be not less than the appropriate value given in table 5.

Flag type	Minimum failing load for thickness				
	50 mm	60 mm	63 mm	65 mm	70 mm
A	8.3		12.7		
B, C, D	11.1		16.9		
E	9.6				18.8
F	9.1			15.4	
G	9.6	13.8			

11.2 Kerbs, channels and edgings

When sampled and tested as described in appendix B, the failing loads shall be not less than the appropriate value given in table 6.

Depth as tested (see note 1)	Width as tested	Failing load (see note 2)
mm	mm	kN
150	305	22.2
125	150	8.0
125	255	13.3
50	255	3.1
50	205	2.7
50	150	2.0
Dropper kerbs 125	255 to 150	10.3

NOTE 1. Units are placed in the testing machine with the depth as tested being the smallest dimension.

NOTE 2. The failing load for kerbs of various lengths may be obtained by extrapolation, e.g. if the failing load for a 125 mm x 255 mm x 915 mm kerb tested on a span of 750 mm is 13.3 kN, the failing load for a 550 mm kerb of the same cross section tested on a span of x mm will be $13.3 \times (750/x)$ kN.

NOTE 3. Outlet kerbs, quadrants and angle kerbs are not tested for transverse strength.

12 Water absorption

12.1 Kerbs, channels, edgings and flags

When tested as described in appendix C, the water absorption shall not exceed the appropriate value given in table 7.

Kerbs, channels and quadrants shown in figure 1	Edgings shown in figure 1	Flags
% by mass	% by mass	% by mass
3.0	3.6	4.0

13 Sampling for independent testing

Samples shall be taken before the products are laid and, wherever practicable, whilst they are being moved, e.g. during loading or unloading. A sample of three products shall be taken from a consignment of not more than 1000 products. Each of the three products in the sample shall be taken from one of three approximately equal sections of the consignment to be tested.

Each product of a sample shall be uniquely marked and accompanied by a certificate from the person responsible for taking the samples, stating that sampling was carried out in accordance with BS 7263 : Part 1.

The sample shall be dispatched to the test laboratory, taking precautions to avoid damage to the products in transit.

NOTE. Products used for dimensional checks may subsequently be used for transverse strength or water absorption tests.

14 Marking

14.1 The following particulars relating to products made in accordance with this British Standard shall be clearly marked on the delivery note, invoice, manufacturer's or supplier's certificate, or brochure relating to a consignment of products:

- the name, trademark or other means of identification of the manufacturing plant;
- the number and date of this British Standard, i.e. BS 7263 : Part 1 : 1990*;
- type of binder constituent(s) used (see clause 3);
- type of admixture(s) used (see clause 6);
- for flags, the type and thickness in millimetres, e.g. A50.

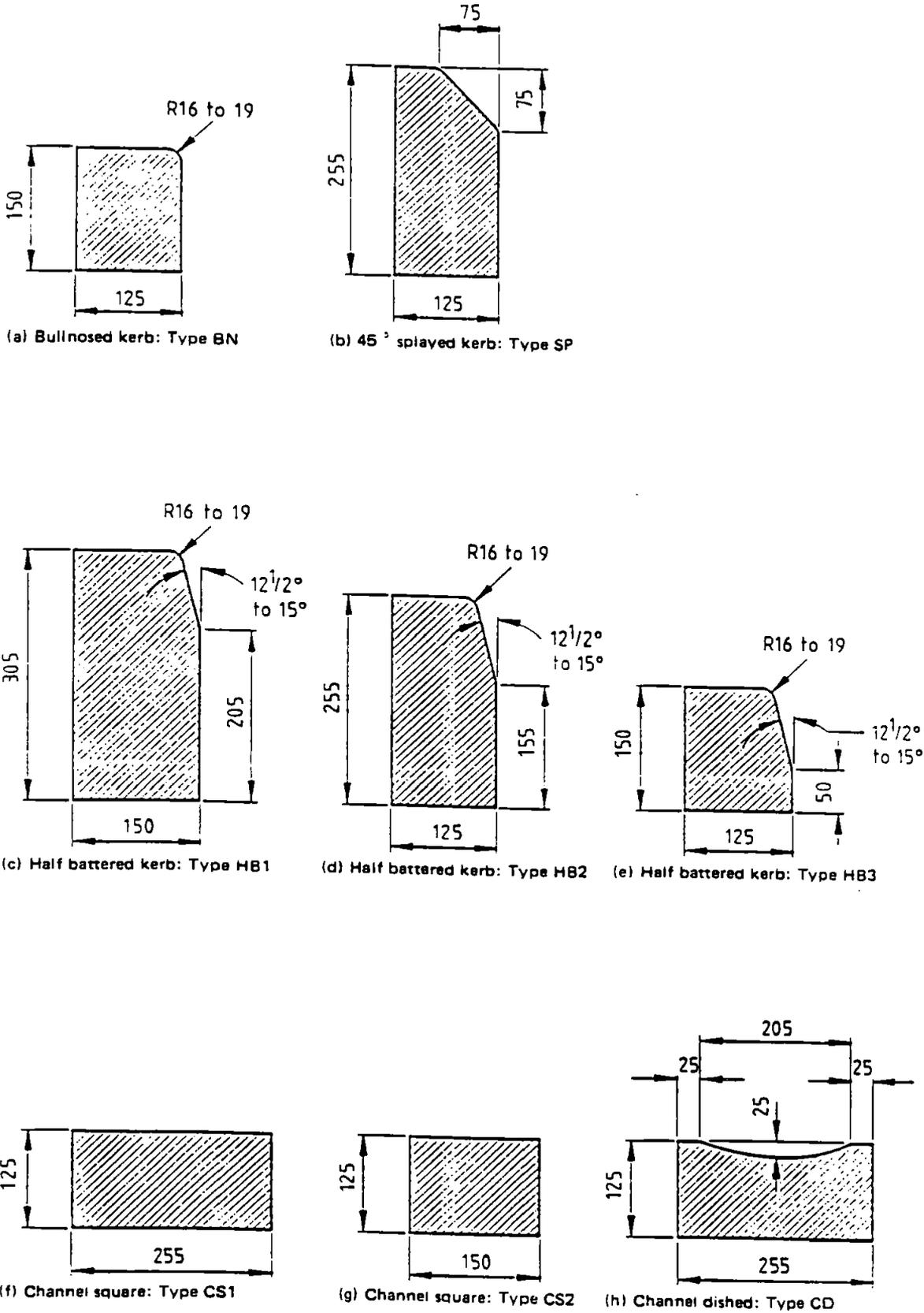
* Marking BS 7263 : Part 1 on or in relation to a product represents a manufacturer's declaration of conformity, i.e. a claim by or on behalf of the manufacturer that the product meets the requirements of the standard. The accuracy of the claim is therefore solely the responsibility of the person making the claim. Such a declaration is not to be confused with third party certification of conformity, which may also be desirable.

14.2 For radiused kerbs, the radius, in m, shall be marked on the kerb in a position which will not be seen when the kerb is laid as described in BS 7263 : Part 2.

15 Types of product

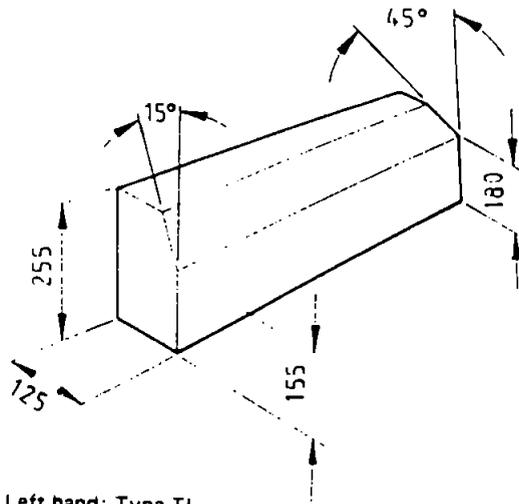
The types of precast concrete flags, kerbs, channels, edgings and quadrants supplied in compliance with this Part of BS 7263 shall be designated in accordance with table 8.

Table 8. Types of product		
Type	Designations	Reference
Flags	A, B, C, D, E, F, G	Table 3 Table 3 Table 3
Tactile flags	TA	Figure 1(t)
Kerbs: Bullnosed kerb 45° splayed kerb Half battered kerb Transition kerb — left hand Transition kerb — right hand Dropper kerb — left hand Dropper kerb — right hand	BN SP HB TL TR DL DR	Figure 1(a) Figure 1(b) Figure 1(c), (d), (e) Figure 1(j) Figure 1(j) Figure 1(k), (l) Figure 1(k), (l)
Channels: Channel square Channel dished	CS CD	Figure 1(f), (g) Figure 1(h)
Edgings: Round top edging Flat top edging Bullnosed edging	ER EF EBN	Figure 1(m) Figure 1(n) Figure 1(p)
Quadrants: Bullnosed quadrant 45° splayed quadrant Half battered quadrant	QBN QSP QHB	Figure 1(q) Figure 1(q) Figure 1(q)
Angles: Internal angle External angle	IA XA	Figure 1(r) Figure 1(s)



All dimensions are in millimetres.

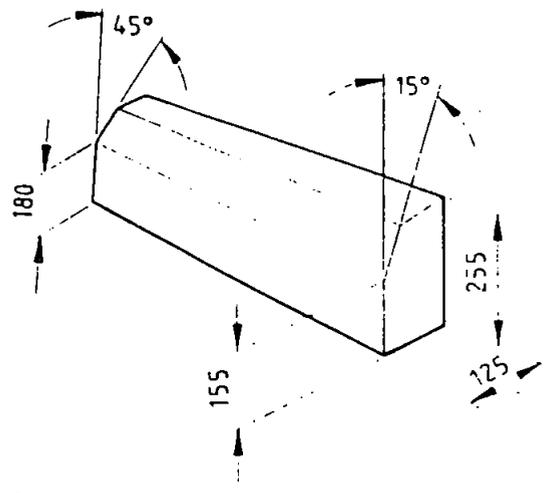
Figure 1. Types of product



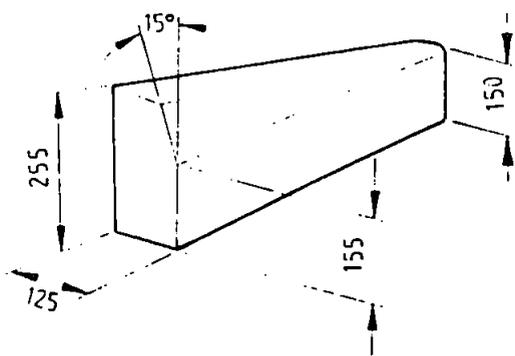
Left hand: Type TL

NOTE. For use with kerb types SP and HB.

(j) Transition kerb: half battered to 45° splay



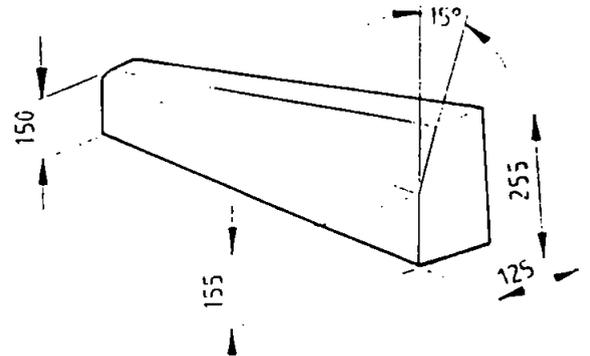
Right hand: Type TR



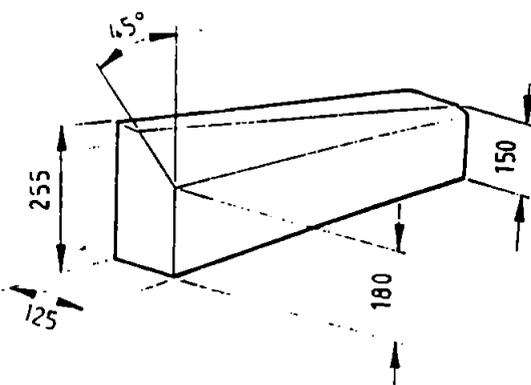
Left hand: Type DL1

NOTE. For use with kerb types BN and HB.

(k) Dropper kerb type 1: half battered to bullnosed



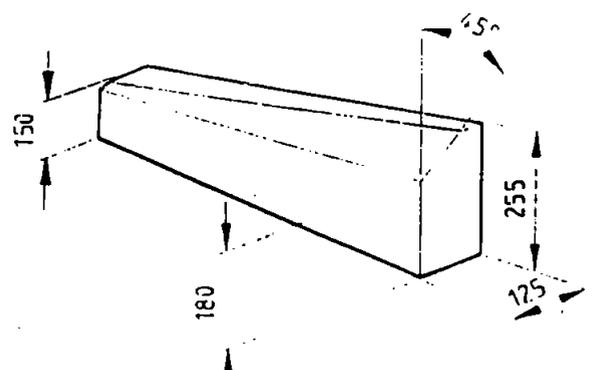
Right hand: Type DR1



Left hand: Type DL2

NOTE. For use with kerb types BN and SP.

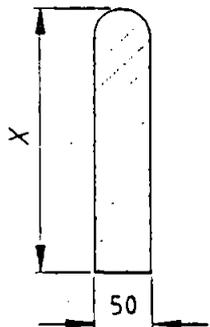
(l) Dropper kerb type 2: 45° splay to bullnosed



Right hand: Type DR2

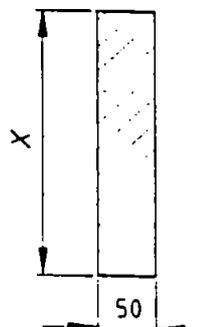
All dimensions are in millimetres.

Figure 1 (continued)

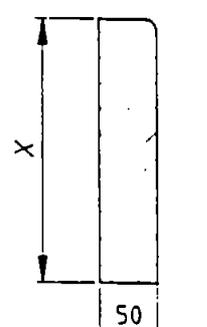


NOTE. x = 150, 200 or 250 mm.

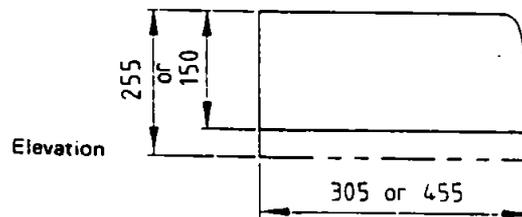
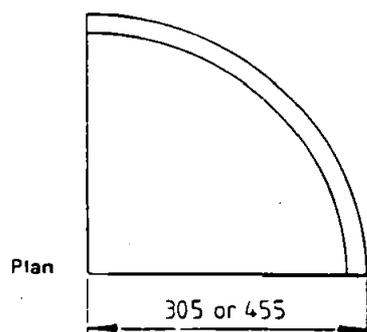
(m) Round top edging: Type ER



(n) Flat top edging: Type EF



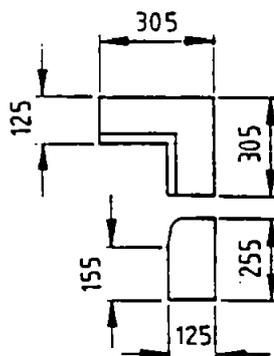
(p) Bullnosed edging: Type EBN



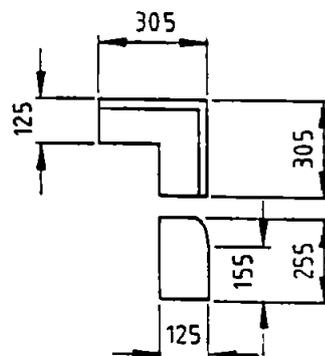
NOTE. Quadrants in these sizes may have the following profile:

- (1) bullnosed type QBN, to match corresponding kerb type BN; or
- (2) half battered type QHB to match corresponding kerb types HB2, HB3; or
- (3) 45° splayed type QSP to match corresponding kerb type SP.

(q) Quadrants (sizes 305 x 150 or 305 x 225 or 455 x 150 or 455 x 255)



(r) Internal angle kerb: Type IA

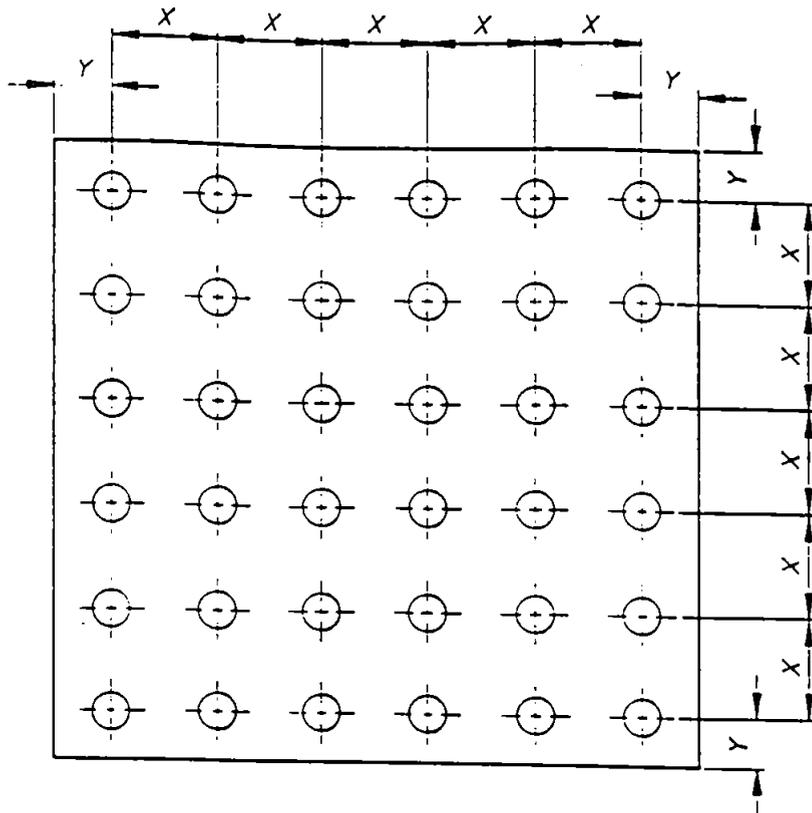


(s) External angle kerb: Type XA

NOTE. Angle kerbs in the above sizes may also have profiles to match bullnose type kerb BN or 45° splayed type SP.

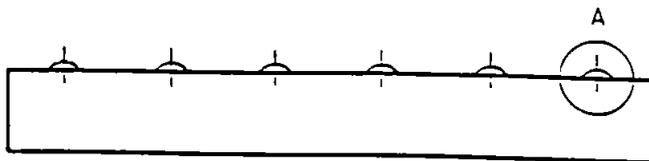
All dimensions are in millimetres.

Figure 1 (continued)

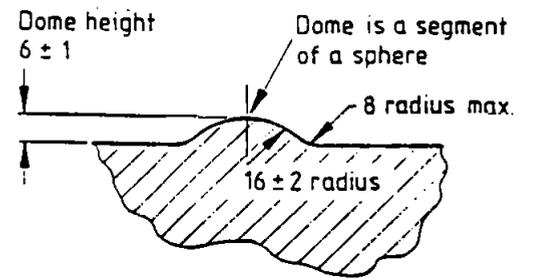


Tactile flag type	Dimension	
	X	Y
TA/E	64	33
TA/F	66.8	33
TA/G	75	37.5
Tolerance: ± 2		

(1) Plan



(2) Elevation



Detail A

NOTE. Tactile flags to be red in colour.
All dimensions are in millimetres.

(t) Tactile flag

Figure 1 (concluded)

Appendices

Appendix A. Measurement of dimensions

A.1 General

Remove any fins or local protrusions.

It is recommended that all measurements be made using a suitable steel rule complying with BS 4372 or BS 4484.

A.2 Flags

A.2.1 Thickness. Measure the thickness of each flag to the nearest mm, using a caliper gauge having suitable jaws, 30 mm in from the edge of the flag at a distance not more than 100 mm from each corner. From the four measurements obtained, calculate the average thickness of each flag to the nearest 1 mm.

A.2.2 Dome height (tactile flags). Measure the thickness of each flag at a point where a dome occurs and at another point where there is no dome. Subtract one thickness from another to obtain the dome height.

A.2.3 Length and width. Measure the size of each flag to the nearest 1 mm.

A.2.4 Squareness on plan. Measure the two diagonals of each flag to the nearest 1 mm.

A.3 Kerbs, channels and edging

A.3.1 Length. Measure the length of each product to the nearest 1 mm on the face, within 25 mm of the four extreme corners of the profile. Calculate the average length to the nearest 1 mm.

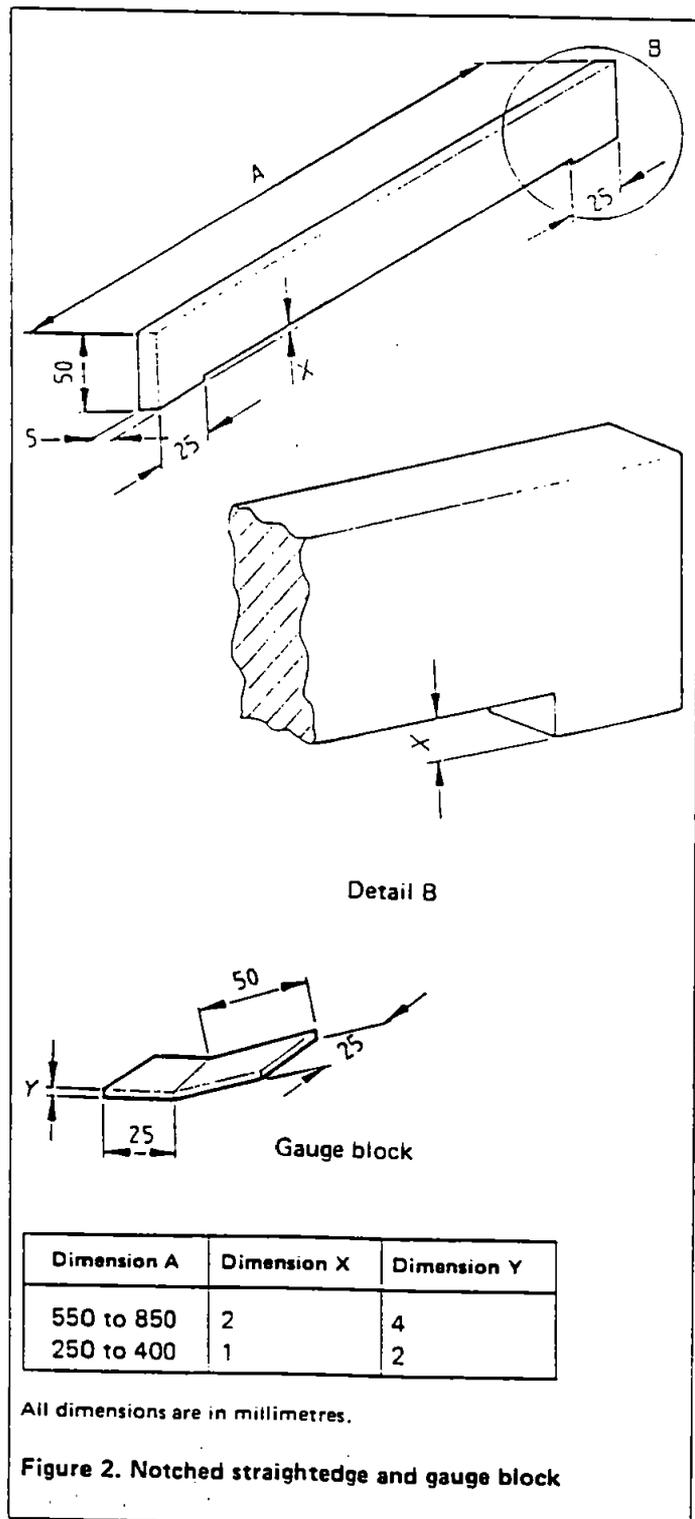
A.3.2 Width and height. Measure the width and height of each product to the nearest 1 mm at both ends. Measure the width at the top and bottom of parallel faces and the overall height at the face and back of the product. Calculate the average height and width to the nearest 1 mm.

A.4 Flatness, straightness, bowing and winding for kerbs and flags

Use the appropriate notched straightedge and gauge block, both made of steel, as shown in figure 2. Place the notched straightedge in any position on the wearing faces of each product. Check if the surface of the product touches the notched section of the straightedge when both the support ends of the notched straightedge are in contact with the product. Check that the gauge block does not pass between the notched straightedge and the surface of the product when placed in any position on the wearing faces of each sample product.

A.5 Determination of squareness

Place the stock of an engineer's square in contact with the moulded faces of the product. Bring the blade into contact with the side of the product. Using a feeler gauge complying with BS 957, check that the clearance between the square and the side of the product at points not less than 30 mm from the top and the bottom does not exceed the appropriate tolerance.



Appendix B. Determination of transverse strength

B.1 Testing machine

The transverse testing machine shall comply with a grade A or grade B machine when verified in accordance with BS 1610 : Part 1, and be of sufficient capacity to apply loads up to 33 kN. It shall be provided with two steel supporting rollers each 38 ± 3 mm in diameter or two steel bearers, each 6 mm minimum width on the supporting surfaces (see figure 3). The spacing of the rollers or bearers shall be as given in table 9.

Table 9. Spacing of rollers or bearers for transverse strength test	
Product	Minimum spacing centre to centre of rollers or minimum clear distance between bearers
	mm
Flag types A, B, C and D	450
Flag type E	375
Flag type F	350
Flag type G	250
Kerbs	750
Edgings	250

NOTE. For kerbs from 450 mm to 800 mm in length, the minimum spans given in the table will have to be adjusted to give a minimum overhang of 50 mm.

In either case, one support shall be horizontal and the other so mounted as to enable loads to be applied without inducing any torsional restraint in the specimen, e.g. by pivoting about an axis parallel to the length of the specimens. The upper member of the loading frame shall be provided with a spherical seating to ensure that the load is applied axially without inducing any torsion in the specimen, and a steel platen at least 50 mm wide and of length not less than the width of the widest specimen to be tested.

B.2 Procedure

B.2.1 Flags. Place the specimen symmetrically on the bearers of the testing machine and with its shorter sides parallel to the supporting rollers or bearers. For tactile flags, the specimen shall be tested wearing surface downwards. Position a hardwood fillet 50 mm wide on the upper surface of the specimen at the midpoint of the span extending the whole width of the specimen parallel to the supporting rollers or bearers.

Apply the load without shock and increase it at a rate not exceeding 16.5 N/s for each 100 mm of width as tested, until the specimen fails or the capacity of the machine is reached. Record the individual failing loads in the report, except when a specimen does not fail under the upper limit of the testing machine, in which case record the failing load as 'greater than . . . kN'.

B.2.2 Other products. Place the specimen symmetrically on the bearers of the testing machine with its greater cross-sectional dimension horizontal and bed a 50 mm wide hardwood fillet on the upper surface at midpoint of the span, using a thin layer of plaster. Allow the plaster to set before the test is carried out. When products having profiles such as those shown in figures 1(b) and 1(c) are to be tested, insert a suitable hardwood wedge between the kerb and the fillet.

Apply the load without shock and increase it at a rate not exceeding 16.5 N/s for each 100 mm of width as tested, until the specimen fails or the capacity of the machine is reached. Record the individual failing loads in the report, except when a specimen does not fail under the upper limit of the testing machine, in which case record the failing load as 'greater than . . . kN'.

NOTE. The failing load for kerbs for various lengths may be obtained by extrapolation, e.g. if the failing load for a 125 mm X 255 mm X 915 mm kerb tested on a span of 750 mm is 13.3 kN, the failing load for a 550 mm kerb of the same cross section tested on a span of x mm will be $13.3 \times (750/x)$ kN.

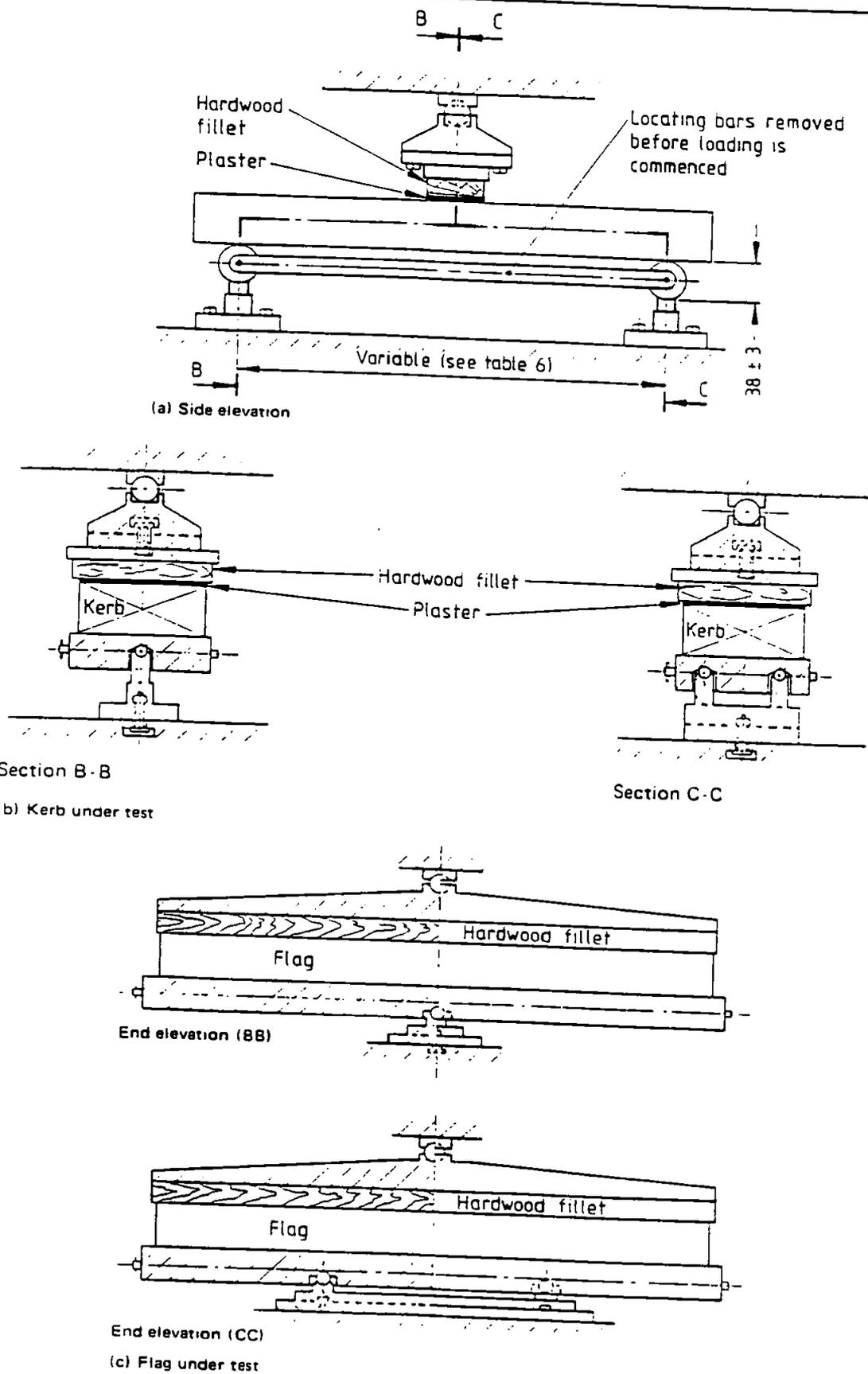


Figure 3. Arrangement of loading for transverse strength test

Appendix C. Determination of water absorption

C.1 Apparatus

C.1.1 *Balance*, capable of weighing the specimens up to 5 kg with an accuracy of 0.1 %.

C.1.2 *Suitable concrete sawing machine*.

C.1.3 *Ventilated drying oven*, complying with BS 2648, except that the internal space may exceed 0.085 m³, in which the temperature is controlled at 105 ± 5 °C, and such that the specimens can be placed in the oven as described in C.3.1.

C.1.4 *Tank*, deep enough to immerse specimens, containing clean water maintained at a temperature of 20 ± 1 °C.

C.1.5 *Dry airtight vessel*, e.g. dessicator, of sufficient size to contain the specimens to be tested.

C.2 Preparation of specimens

C.2.1 Flags

Saw two square test pieces from diagonally opposite corners of each of the flags, approximately 100 mm x 100 mm, sawn from the full thickness of the flag and having two sawn and two moulded edges.

C.2.2 Kerbs, channels and edgings

Saw two test specimens from each of the three sample products. Cut each specimen from either end of the product. For kerbs and channels take the sample from the part of the product to be exposed, which may include the profile face. The size of each specimen shall be as given in table 10.

C.3 Procedure

C.3.1 Place the six specimens in the drying oven (C.1.3) so that each one is not less than 25 mm from any heating surface and from each other. Dry the six specimens in the oven for 72 ± 2 h. Do not place further specimens in the same oven during the drying process. Allow free access of air to all surfaces of the specimens.

Table 10. Size of specimens of kerbs, channels and edgings for water absorption test

Product shown in figure 1	Size of specimen
Kerbs type SP, HB1, HB2 and transition kerbs	100 mm long x 100 mm deep x full width of kerb
Kerbs type BN and HB3, channel square type CS2 and edgings of all types	100 mm long x cross section of product
Channel square type CS1 and channel dished type DC	100 mm long x full depth of product x 100 mm wide

C.3.2 On removal from the oven, cool each specimen for 24 ± 0.5 h in the dry airtight vessel (C.1.5). Weigh each specimen and immediately completely immerse in the tank (C.1.4) with its longitudinal axis horizontal and at a depth such that there is 25 ± 5 mm of water over the top of the specimen.

C.3.3 Leave the specimens immersed in the water for 30 ± 0.5 min. Remove each specimen, shake it to remove the bulk of the water and dry it with a cloth as rapidly as possible until all free water is removed from the surface. Weigh each specimen.

C.4 Calculation and expression of results

C.4.1 Calculate the water absorption of each specimen as the increase in mass resulting from immersion expressed as a percentage of the mass of the dry specimen.

C.4.2 Calculate the mean absorption of the two specimens from each of the three products and report the values of the three means to the nearest 0.1 % as the water absorptions of the products.

Appendix D. Information to be given to the manufacturer in an enquiry or order

The following particulars cover the essential details to be given to the manufacturer for an enquiry and order to be fully understood.

D.1 General

Any special requirements, e.g.:

- (a) surface finish;
- (b) colour;
- (c) aggregate type;
- (d) binder type;
- (e) admixtures.

D.2 Flags

- (a) Number of units.
- (b) Size, i.e. type followed by the thickness, e.g. D 63.
- (c) Whether chamfer is not required (types E, F and G only).

D.3 Kerbs and channels

- (a) Kerb profile (Type BN, SP, HB1, HB2 or HB3 of figure 1) and/or channel profile (type CS1, CS2 or CD of figure 1) and overall dimensions.
- (b) Any sawn units or special instructions.

D.4 Radius kerbs and channels

(See figure 4.)

- (a) Number of units or number of quadrants of a circle.
- (b) Profile type (kerb type BN, SP, HB1, HB2 or HB3, channel type CS1, CS2 or CD of figure 1).
- (c) External or internal radius of units (see figure 4).
- (d) Radius in metres (see 10.1.2).

D.5 Dropper kerbs

- (a) Number of pairs of units.
- (b) Cross section profiles to be connected over 915 mm length, e.g. profile type, left or right hand (dropper kerb types 1 and 2 of figure 1).

D.6 Edgings

- (a) Number of units.
- (b) Profile (edgings type ER, EF or EBN of figure 1).

D.7 Quadrants

- (a) Number of units.
- (b) Profile (quadrant type QBN, QHB or QSP of figure 1).
- (c) Bed dimensions (305 mm or 455 mm).
- (d) Height dimension (150 or 255 mm).

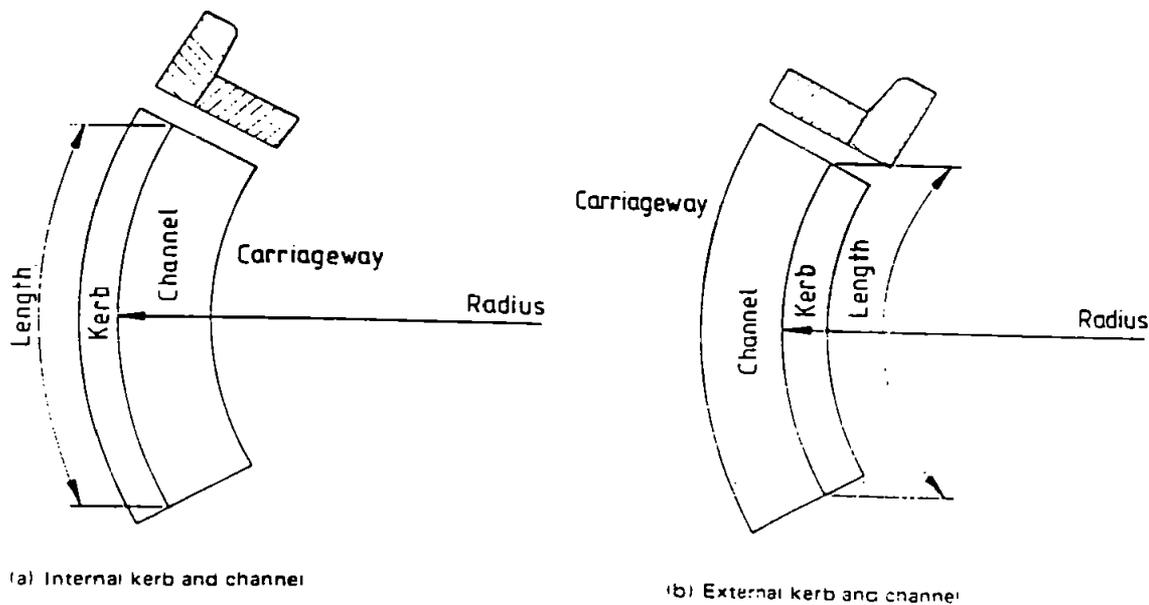


Figure 4. Kerbs and channels

Appendix E. Methods of manufacture

There are many different methods for manufacturing the type of products covered by this standard. The most common methods are as follows.

(a) *Semi-dry process.* A moist mix is compacted by pressure or by simultaneous vibration and pressure or by tamping. The resulting products are demoulded immediately.

(b) *Wet press process.* Starting with a very wet mix, excess water is removed under a pressure of at least 7 MPa over the entire surface. The products are demoulded immediately.

(c) *Wet cast process.* A mix with a water:cement ratio in the range 0.40 to 0.55 is placed into moulds and compacted. The products are normally demoulded on the following day. This wet cast process is not used for flags covered by this Part of BS 7263.

Appendix F. Suitability of flags for various locations

The type and thickness of flag recommended for use in various locations is given in table 11.

Location and use	Flag type and thickness (in mm)			
	A50 B50 C50 C63 D50 D63 E50 F50 G50	A63 B63	E70 F65 G60	Tactile flags (see note 2)
No vehicle use of any kind, e.g. pedestrian precincts and footways protected by street furniture	*	*	*	*
Very occasional use by cars and light mechanical sweepers, e.g. unprotected footways in 'no parking areas' or other footways where over-run is not a problem	*	*	*	*
Vehicle crossing of footways to house driveways		*	*	
Footways subject to frequent car and occasional commercial vehicle over-run; unprotected pedestrian precincts with about 25 commercial vehicles/day each way, giving service access, or for fire access			*	
<p>* Indicates that this flag type and thickness is suitable for the location. NOTE 1. Flags will only perform satisfactorily if the foundation and bedding conditions are adequate. NOTE 2. For guidance on use of tactile flags see DU 1/86.</p>				