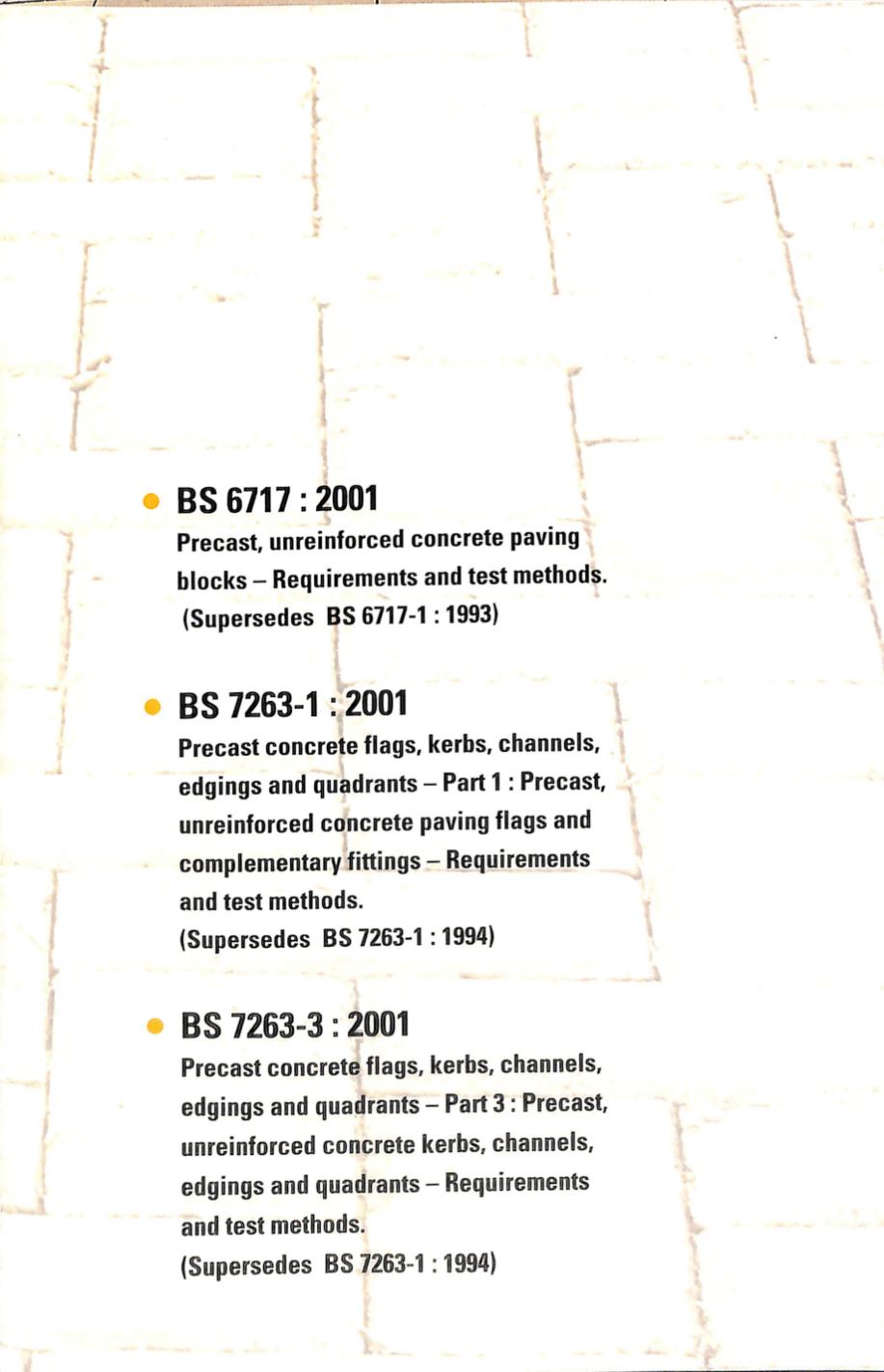




Revised British Standards for concrete paving blocks, paving flags and kerbs

SEPTEMBER 2001



- **BS 6717 : 2001**

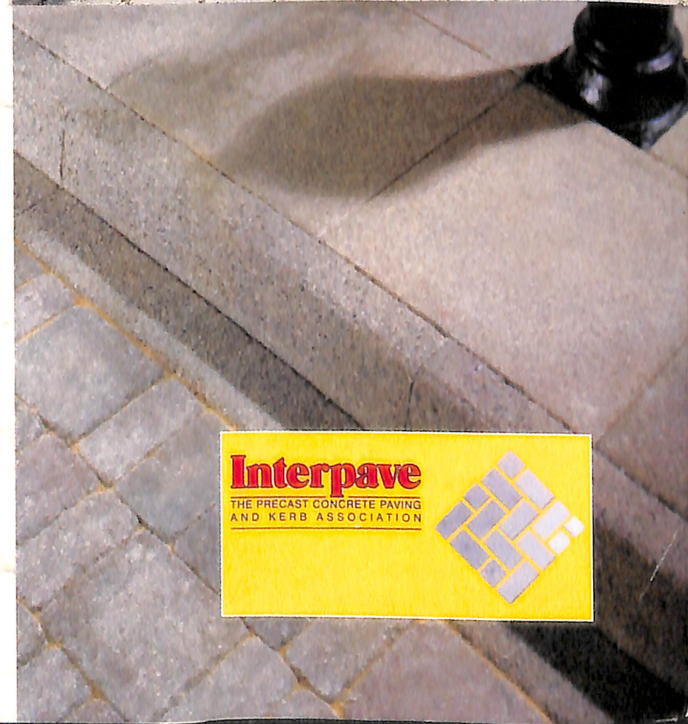
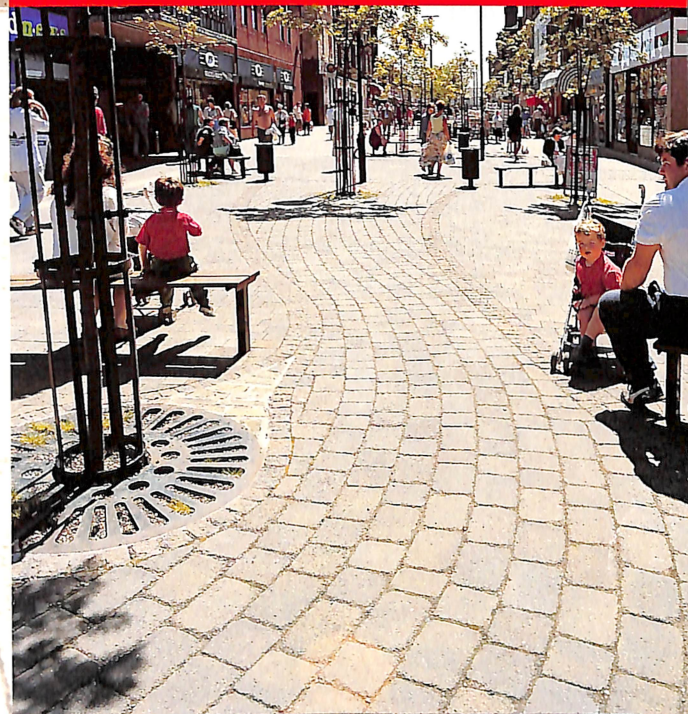
Precast, unreinforced concrete paving blocks – Requirements and test methods.
(Supersedes BS 6717-1 : 1993)

- **BS 7263-1 : 2001**

Precast concrete flags, kerbs, channels, edgings and quadrants – Part 1 : Precast, unreinforced concrete paving flags and complementary fittings – Requirements and test methods.
(Supersedes BS 7263-1 : 1994)

- **BS 7263-3 : 2001**

Precast concrete flags, kerbs, channels, edgings and quadrants – Part 3 : Precast, unreinforced concrete kerbs, channels, edgings and quadrants – Requirements and test methods.
(Supersedes BS 7263-1 : 1994)



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The revised British Standards BS 6717 and BS 7263 are based on the European draft standards as they existed in 1999. The major difference between the previous British Standards and the new ones is that the former have a prescriptive recipe basis whereas the new ones (and the proposed European Standards) are performance based. In the new standards there are no prescribed dimensions of products but existing flag and kerb sizes are given as designated units. Familiar products will therefore continue to be available.

The way in which performance is measured, however may not be familiar to all users. The tests now included are for strength, but no longer the familiar compressive strength for paving blocks, together with slip/skid resistance, abrasion resistance and freeze/thaw durability. There are performance classes with different requirements for each property to reflect the different uses to which the products are put. A "no performance determined" option is available for slip/skid, abrasion and freeze-thaw, which reflects the harmonised European standards upon which these new standards are based.

The individual tests are as follows:

- **Strength** – A test which determines the splitting strength (Fig 1) is to be adopted for block pavers and replaces the existing compressive strength test. Flag and kerb will continue to use the bending strength, albeit with a modified test. The tests all derive material strengths rather than unit strengths. A minimum strength requirement is specified for block and kerb, whereas flag has two strength classes to cover the different types of end use.

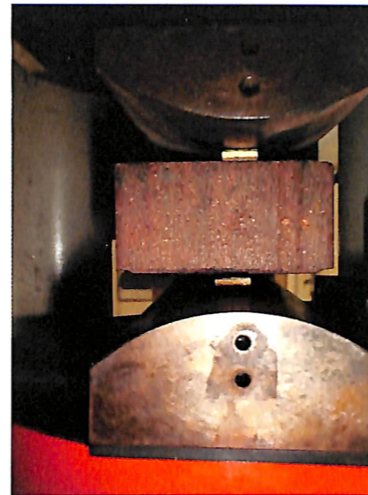


Figure 1: Splitting test rig

- **Slip/Skid Resistance** – It is well known that the polishing action of vehicle wheels reduces the skid resistance of roads constructed using aggregates. Since tyres and feet have a similar polishing action on paving products a method of assessing the slip/skid resistance of these products has been included in the standards.

The pendulum test (Fig 2) is used in conjunction with a polishing regime specified in BS 7932: 1998 Method for Determination of Polished Paver Value to give unpolished and polished test values. The lower of these provides the slip/skid resistance value for the products and the standards allow for different performance classes dependent upon the designed usage.



Figure 2: Pendulum apparatus

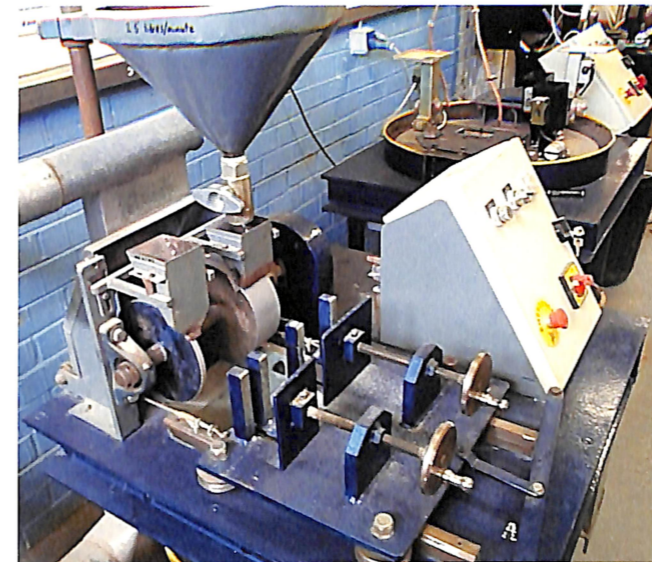


Figure 3: Wide-wheel abrasion apparatus

- **Abrasion Resistance** – In order to establish the abrasion resistance of paving products, the wide-wheel (70mm) abrasion test is adopted (Fig 3). In this, the specimen is held against the rotating wheel for one minute while abrasive material is fed into the interface.

The resulting abraded area is shown in Figure 4. Performance of the product is defined by the chord length of the groove and the three different product groups – block, kerb and flag – have different performance requirements.



Figure 4 : Abraded area

- **Freeze-Thaw Durability** – The existing standard for paving blocks specifies a minimum cementitious content to ensure durability. The existing flag and kerb standards put limits on the water absorption for the same reason. In the new standards there are freeze/thaw test performance requirements designed to more accurately reflect the potential for failure in use. The product specimens are subjected to freeze/thaw cycling under very controlled conditions in the presence of a saline solution.

Another change in the revised Standards is the introduction of a requirement for **type testing**. This applies to new products, to the first products manufactured on a new facility and to any change in the raw materials in existing products. It is important to note that type testing is intended to give the manufacturer and any attestation body confidence that the new or modified product will meet performance requirements which apply during production. Type testing compliance requirements are quite separate from, and generally higher than, those for normal production control. For abrasion resistance, freeze-thaw durability and slip/skid resistance, type testing should be repeated annually for each "surface family" i.e. products with the same surface mix and surface finish.

The separate requirement for a **factory production control system** must include a sampling and testing plan, procedures for the marking, storage and delivery of products and methods for dealing with non-conforming products. An example of a production control system is included in an annex to each of the Standards.

In addition to these new Standards there have been a number of other changes to Standards referred to in "Precast Concrete Paving – A Design Handbook". A list of the references under BS7533, available at the time of going to print, is shown overleaf:

- **BS7533:**
Pavements constructed with clay natural stone or concrete pavers.
- **Part 1 : 2001**
Guide for the structural design of heavy duty pavements constructed of clay pavers or precast concrete paving blocks.
- **Part 2 : 2001**
Guide for the structural design of lightly trafficked pavements constructed of clay pavers or precast concrete paving blocks.
- **Part 3 : 1997**
Code of Practice for laying precast concrete paving blocks and clay pavers for flexible pavements.
(Due to be revised in 2002)
- **Part 4 : 1998**
Code of Practice for the construction of pavements of precast concrete flags or natural stone slabs.
- **Part 6 : 1999**
Code of Practice for laying natural stone, precast concrete and clay kerb units.

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