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Australian Standard 1225—1980

BURNT CLAY AND SHALE BUILDING BRICKS

STANDARDS ASSOCIATION OF AUSTRALIA
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THE FOLLOWING SCIENTIFIC, INDUSTRIAL AND GOVERNMENTAL ORGANIZATIONS and departments were officially represented on the committee entrusted with the preparation of these standards:

Brick Development Research Institute

Brick manufacturers associations

CSIRO, Division of Building Research

Department of Housing and Construction

Department of Public Works, N.S.W.

Lending authorities

Local government associations

Master Builders Federation of Australia

Royal Australian Institute of Architects

University of Melbourne

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AUSTRALIAN STANDARD

BURNT CLAY AND SHALE BUILDING BRICKS

AS 1225—1980

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PREFACE

This standard was prepared by the Association's Committee on Burnt Clay and Shale Building Bricks as a metrication and revision of AS A21—1964, which it accordingly supersedes.

Methods of tests are given in a separate standard, viz AS 1226. This allows a range of test methods for the bricks to be standardized without necessarily being part of the standard for bricks. In particular, standard methods are given for transverse strength and for initial rate of absorption, but this standard does not require that these properties be evaluated other than at the request of the purchaser as detailed in Clause 6.5.

The requirements for tolerances, which were based on the measurement of a sample of 24 bricks, were adopted by the British Standards Institution as a result of statistical analysis of several thousand measurements of bricks representing most of the important British varieties. It was concluded from this analysis that from the manufacturer's point of view it was unreasonable to exclude bricks that differed from the standard dimensions by less than 6 mm in length and 4 mm in width and depth, while for user purposes these tolerances were large and should not be exceeded. In considering clauses to embody these conclusions, the BSI committee realized that it would be practicable to measure only a small proportion of the bricks used, so that judgment of the compliance or non-compliance of any batch with the standard must be based on measurement of a sample.

The BSI committee drew up its provisions on the basis that a batch containing not more than 1 percent of bricks outside the limits of ± 6 mm on length and ± 4 mm on width and depth should comply, while a batch containing 12 percent or more should not comply. The tolerances laid down give chances of a bad batch complying of not greater than 1 in 12 and chances of a good batch not complying of not greater than 1 in 75. To achieve this degree of assurance it is necessary to measure a sample of 24 bricks. If a smaller number, e.g. the sample of 8 bricks formerly specified, were measured, the chance that a batch of bricks would be erroneously classified as complying or not complying is very much greater.

The standard makes provision for three grades of brick, based on minimum compressive strengths of 48, 27 and 10 MPa. Permissible working stresses for brickwork given in AS 1640 are directly related to strength grades in combination with various mortar types. The inclusion of these minimum compressive strength requirements has necessitated the introduction of corresponding acceptance criteria. With bricks, as with concrete or any other structural product whose properties are variable, it is virtually impossible to guarantee that the strength of any one test specimen will never fall below the specified minimum compressive strength, and all that can be done is to ensure that only a predetermined small percentage of bricks will do so. More precisely, there must be a reasonably small possibility of accepting a consignment in which a given percentage of bricks have strengths less than the specified minimum compressive strength.

The acceptance criteria requirement for compressive strength set out in Clause 6.4 is based on the following probabilities of accepting bricks with a given percentage defective (i.e. less than the specified minimum compressive strength):

Percentage defective	*Probability of acceptance*
5	90 in 100
10	70 in 100
20	40 in 100
30	20 in 100

This standard requires reference to—

AS 1226 Methods of Sampling and Testing Burnt Clay and Shale Building Bricks