TG5:18

Timber scaffold boards – BS2482:2009

NASC
National Access & Scaffolding Confederation

INTRODUCTION

This guidance note has been prepared to give an overview of requirements of the British Standard – BS 2482:2009.

BSI (British Standard) boards, MSG 1.5, MSG 1.2 or VG – Which boards should be used? The choice has considerable health and design implications.

Scaffolding board manufacturers and the HSE have jointly funded research into the visual characteristics and mechanical settings required for timber scaffold boards. Typical real life loading scenarios were looked at and appropriate loads were established. This work culminated in the revised document BS2482:2009 'Specification for timber scaffold boards'.

Scaffold board failures of any grade, although rare, can have serious consequences. A BS2482:2009 board is an engineered product of known quality and performance, which gives a commercial yield from the appropriate raw material. Therefore, there should be no reason to consider using non-BS2482:2009 boards.

New British Standard

BS2482:2009 defines both visual and machine strength grading standards for 38mm x 225mm boards supported at 1.2m spans and 63mm x 225mm boards supported at 2.5m spans; and machine strength grading standards only for 38mm x 225mm boards supported at 1.5m spans.

KEY CHANGES

1. There are two strength grades for 38mm x 225mm scaffold boards. A 1.2m support span board and a 1.5m support span board.

2. 1.2m support span boards can be either visually or machine graded.

3. 1.5m support span can only be machine graded to the new settings set in the standard. (The pass rate to derive visual rules would be too low).

4. There is a maximum tolerance when setting out transom positions, of the board span plus100mm.

5. 63mm x 225mm boards will have a maximum support span of 2.5m (which is down from 3.26m in the earlier standard). This should not present any issues when used as battens on proprietary system scaffolds where the lengths are generally shorter.

6. End bands must be fixed using nails or staples along the side or edge of the board and teeth, staples or nails may be used to secure the ends.

7. Only european whitewood and european red wood are the permitted species when machine grading scaffold boards. (Other species may be approved if the test data can be verified). The list for visual grading is unchanged.

8. The strength properties are:

Annex A – Table A.1 Strength Properties

Board Thickness	Target Span	Moment of resistance of a single board where:	
mm	m	An applied load acts only on an individual board kNm	An applied load spread uniformly* across a minimum of 4 boards kNm
38	1.2	0.50	0.61
38	1.5	0.65	0.81
63	2.5	1.25	1.48
* i.e. via a rigid building pack			

9. If greater loads are required, i.e. for loading bays, these should be calculated and the support spans reduced accordingly.

1. Dimension

38mm thick boards: +/-2mm in thickness and/or +/-5mm in width.

Length +/- 25mm.

63mm thick boards: +/-3mm in thickness and/or +/-5mm in width.

Boards for use in system scaffolds should conform with the manufacturer's instructions.

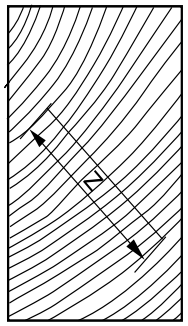
All dimensions are made at a 20% moisture content.

NOTE: Crosscutting does not affect the structural integrity of the board and the board will still comply with BS 2482.

- Visually graded boards – all defects will have already been visually assessed.
- Machine graded boards – the board will have been mechanically assessed along its length.

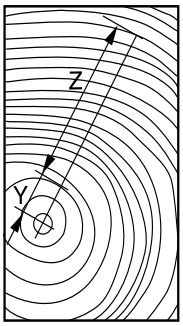
2. Growth rings

Timber with less than five growth rings per 25mm shall not be used.



a) Measured through centre

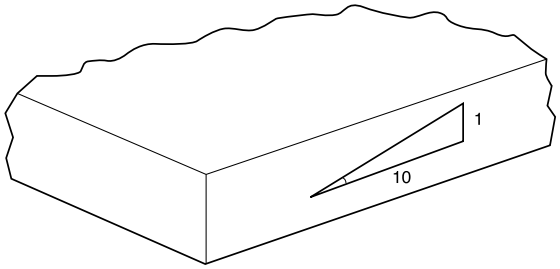
Y = 25 mm
Z = 75 mm



a) Measured 25mm from pith

3. Slope of Grain

The slope of grain on both the edge and the face of the board shall not exceed 1 in 10. A scribe should be used when visually assessing slope of grain. The grain should run parallel to the face of the board.

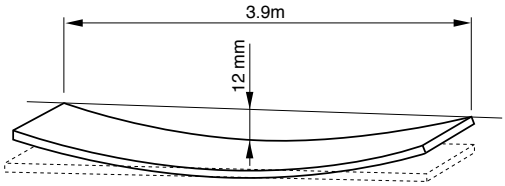


4. Twist, bow & spring

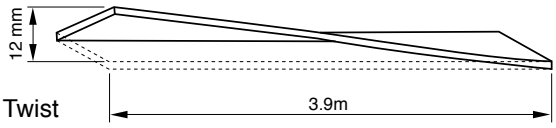
No 3.9m board shall be:

- Twisted more than 12mm over the full width of the board.
- Have bow that exceeds 12mm.
- Have spring that exceeds 10mm.
- Have cup that exceeds 5mm.
- For shorter boards these shall be pro-rata.

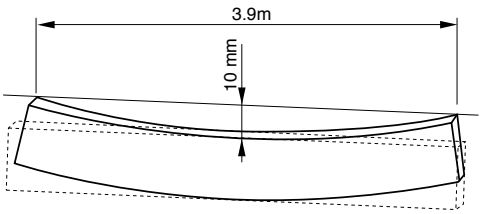
a) Bow



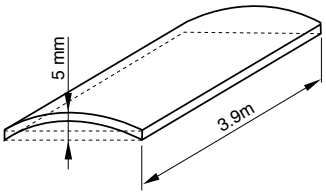
c) Twist



b) Spring



d) Cup



5. Knots

Knots or knot clusters on the face of the board shall not exceed 1/3rd the board width at any cross section.

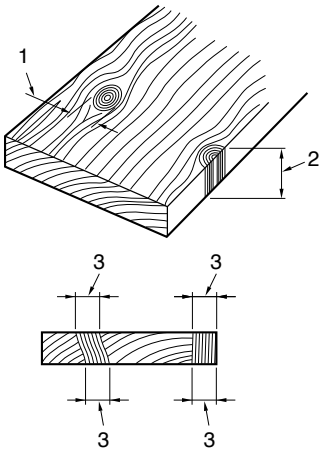
Knots on both edges of the board shall not exceed:

- 28mm for 38mm boards.
- 35mm for 63mm boards.

There shall be at least 150mm of clear timber along the board length between knots of the maximum permitted size.

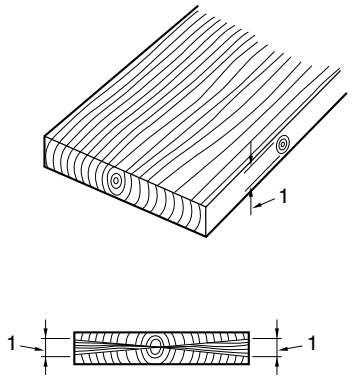
Splay knots should only be measured at the edge (the face shall be ignored).

Where more than one knot appears within any 100mm they shall be summed and considered as a group.



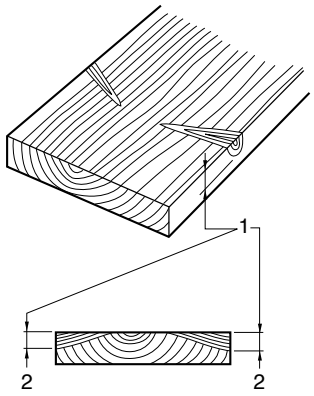
Face knots

Key
1 Measure at right angles to length
2 Ignore part visible on edge
3 Sum all measurements shown



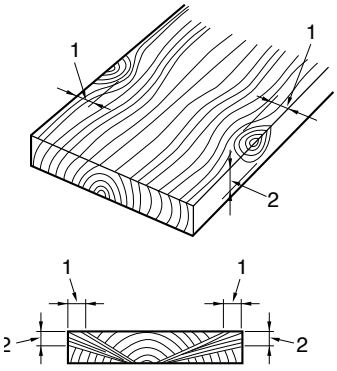
Edge knots (visible on edges only)

Key
1 Sum all measurements shown



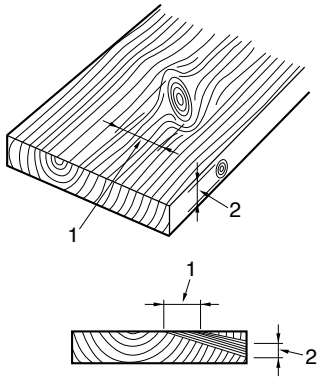
Splay knots

Key
1 Only parts visible on edge measured
2 Sum both measurements



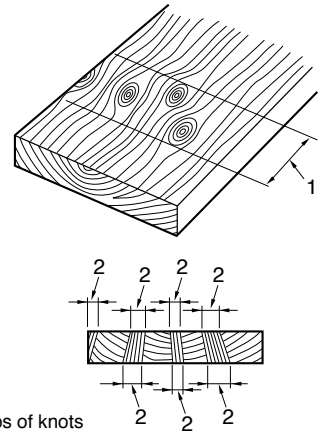
Arris knots

Key
1 Sum all face measurements
2 Sum all edge measurements



Edge knots emerging onto face

Key
1 Measure on face separately
2 Measure on edge



Groups of knots

Key
1 More than one knot within a 130mm length – consider as a group
2 Sum all measurements

6. Wane

Wane shall not extend more than 25mm across the face and shall not reduce the edge dimension by more than 12mm.

The end band shall be fully supported.

7. Checks or splits

Unlimited minor surface checks are permitted.

A split that is more than 12mm deep shall not be more than 225mm long.

8. Decay

Blue sapwood stain is permitted. Otherwise boards shall be free of fungal decay.

9. Insect holes

Wormholes and wood wasp holes are not permitted. Active infestation is not permitted.

10. Abnormal features and damage

Reaction wood (typically known as compression wood in European Whitewood) and other abnormal features are not permitted. The board shall be rejected if affected by damage that is likely to cause a greater reduction in strength than other admissible characteristics or that would prejudice a safe footing or cause injury whilst handling.

11. End Protection

The ends of the board shall be protected by one or both of the following methods:

(a) End Hoops:

38mm thick boards

Ends may be bound with 25mm wide x 0.6mm thick hoops. They shall extend a minimum of 150mm along each edge of the board. They shall be secured by rust proofed clout nails 30mm x 3.0mm or rust proofed staples 1.8mm wide x 11.3mm crown x 30mm long; two on each edge and three at the end.

(Tooth type bands, that use teeth on the end and nails or staples down the sides, may also be used; as described in BS 2482:2009).

63mm thick boards

Ends may be bound with 47mm wide x 0.6mm thick hoops. They shall extend a minimum of 100mm along each edge of the board. They shall be secured by rust proofed clout nails 30mm x 3.0mm, or rust proofed staples 1.8mm wide x 11.3mm crown x 30mm long two on each edge and three at the end.

(Tooth type bands, that use teeth on the end and nails or staples down the sides, may also be used; as described in BS 2482:2009).

When re-banding scaffold boards also refer to NASC guidance TG6-10.

(b) Nail Plates:

Rust proofed nail plates with a minimum size 190mm long x 27mm wide x 0.7mm thick. They should have a minimum of 42 teeth pressed at right angles. At least two plates shall be attached within 230mm of the board end. The plates shall be flush with the timber.

12. Marking

The boards shall either in accordance with TG6-10 or BS2482:2009. As a minimum they shall be marked with:

- Manufacturer's or supplier's identification.
- Support span
  – 1.2m max (for visually or machine graded boards 38 x 225).
  – 2.5m max (for visually or machine graded boards 63 x 225).

Other markings that can be useful include: Personalisation on either the end band or board for security and identification, date of manufacture and 3rd party assessment scheme with licence number.

When a board is re-graded refer to requirements set out in TG6-10.

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