2.3 Selection of panels for specific end use: general requirements

In the selection of panels for specific end uses, a number of criteria must be considered and satisfied (*Figure 2.1*) including:

- Is the panel to be permanently incorporated into a construction and hence subject to the Construction Products Regulation (CPR)? For products outside of the scope of CPR, for example furniture, the product must meet the specification agreed between supplier and customer and must be fit for the intended purpose, but compliance with *BS EN 13986* is not required unless this forms part of the agreed specification.
- Since July 2013, when the CPR came into force, wood-based panels for use in construction must meet the requirements of the harmonised European standard *BS EN 13986* for wood-based panels. An alternative, voluntary route to gaining a CE mark, for wood-based panels that are outside the scope of *BS EN 13986*, is through issuing a European Technical Assessment (ETA) by a suitable Technical Assessment Body (TAB). In support of the CE mark, the manufacturer must prepare a Declaration of Performance (DoP) listing the properties of the panel and must have a Factory Production Control (FPC) system in place to ensure that the properties in the DoP are maintained.
- The CE mark will make it clear whether the product is intended for structural or non-structural use and whether it is suitable for specific applications, such as flooring, roofing or wall sheathing.
- Structural panels must be capable of carrying the imposed loads as set out in *Eurocode 1* and *Eurocode 0* if design is by limit state according to *Eurocode 5*, or to meet specific loads where known. (Where design is being carried out to *BS 5268-2* the imposed loads should be taken from *BS 6399*.) Demonstration of the panel's ability to carry the loads may be calculation based on material characteristic properties or by performance testing for specific end uses.
- The panels must be appropriate for the ambient environmental conditions of the projected end use. Panels in the following tables are listed according to use in one of three service classes. The Service Class system is mainly aimed at assigning strength values and for calculating deformations under defined environmental conditions. The appropriate service class will be designated in the CE mark.
  - **Service Class 1:** is characterised by a moisture content in the materials corresponding to a temperature of 20°C and the relative humidity of the surrounding air only exceeding 65% for a few weeks per year. (Note: in Service Class 1 the average moisture content in most panels will not exceed 11%.)
  - **Service Class 2:** is characterised by a moisture content in the materials corresponding to a temperature of 20°C and the relative humidity of the surrounding air only exceeding 85% for a few weeks per year. (Note: in Service Class 2 the average moisture content in most panels will not exceed 15%.)
  - **Service Class 3:** climatic conditions leading to higher moisture contents than in Service Class 2.

Further criteria relating to other properties, for example thermal conductivity, vapour permeability, durability, dimensional stability and sound absorption, may also have to be taken into account in the selection of panels for particular applications.

Tables in the following sections set out the types and grades of panels that are available for specific end uses within construction, given a particular load level and a particular environmental condition.

It should be appreciated that:

- These tables give the minimum grade of panel that will satisfy a particular set of requirements. Panels of higher quality than the minimum may be substituted, and in certain circumstances their selection may result in a reduced thickness of panel being used.
- Although all the panels meeting the grade specifications in a particular table satisfy the particular requirements, the level of performance of different brands of these panels may vary considerably. Moreover some may be endowed with high levels of properties not included in the tables, such as thermal conductivity, or sound absorption; these properties may be listed in the DoP.
- The design of structures using any one of these panels is dependent on the availability of the relevant design stresses and their subsequent modification to account for environmental factors and duration of load. These factors in design should be included in the DoP and are discussed further in *Section 2.2*.

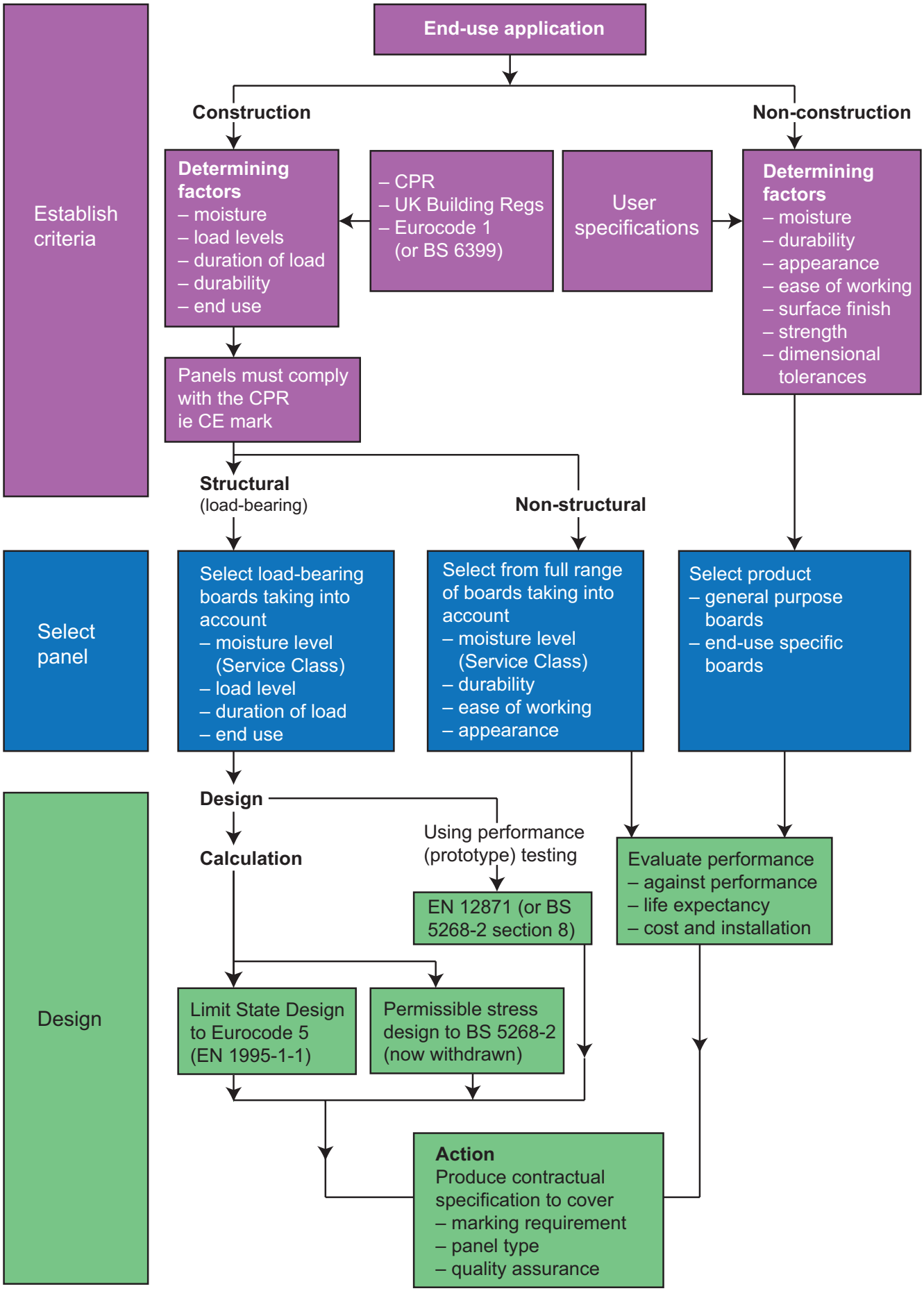

Figure 2.1: Panel selection and use

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Contact details for the PanelGuide project partners are:

Wood Panel Industries Federation
Autumn Business Park
Dysart Road
Grantham
Lincs
NG31 7EU
Tel: 01476 512 381
Email: enquiries@wpif.org.uk
Website: www.wpif.org.uk

Timber Research and Development Association
Chiltern House
Stocking Lane
Hughenden Valley
High Wycombe
Bucks
HP14 4ND
Tel: 01494 569 603
Email: information@trada.co.uk
Website: www.trada.co.uk

National Panel Products Division
Timber Trades Federation
The Building Centre
26 Store Street
London
WC1E 7BT
Tel: 020 3205 0067
Email: ttf@ttf.co.uk
Website: www.ttf.co.uk

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