



Guidance Note

Plywood for Overlaying Suspended Floors

Introduction

The CFA is aware of concerns expressed within the industry relating to the quality of the plywood available and supplied as “flooring grade”. Investigations confirmed that the standard that many request as representing a “flooring grade” i.e. WBP (weather and boil proof) **no longer exists**. This was part of a standard (BS6566) which is now obsolete (an official term for a withdrawn standard).

Therefore, it seems reasonable to suggest that any material which is stamped with the acronym “WBP” is either being manufactured to an obsolete standard or is more likely not being tested or manufactured to a standard at all. The other factor to understand about the term WBP is that it only ever related to the glue bond. It in no way reflected an overarching standard that guaranteed other elements of quality. The term WBP has been removed from the **CFA Guide to Contract Flooring** and is also slowly disappearing from general standards and manufacturers’ documentation.

What should I ask for?

There are currently no British, European (EN) or American (ASTM) standard for a “flooring grade” of plywood for use as a flooring overlayment. The CFA has therefore produced the following list of standards / references that can be used to help identify a suitable grade of plywood for this application. It is not designed to be exhaustive or a definitive specification, simply, in the absence of an overarching flooring standard, relevant standards / references that might be used in the process of identifying a suitable product. Always seek guarantees from your supplier that the material being purchased is fit for purpose.

Summary of relevant standards and additional recommendations for identifying flooring grade plywood

- **Glue Bond:** EN 314 -2:1993 Plywood – Bonding Quality Class 3 (Exterior Conditions) - **This is the standard that replaced “WBP”.**
- **Glue Bond and Resistance to Decay:** EN 636 -2:2003 - Plywood specifications.
- **Outer Veneers:** EN 635-2:1995 Plywood – Classification by surface appearance – Part 2: Hardwood refers but is not widely recognised. The outer veneers should be tropical hardwood and a min of 0.75mm thickness. Face grain direction should be parallel to one another. They should not be treated with any chemicals that may impair an adhesive bond.
- **Internal Cores:** Internal cores should be free from defects. EN 635-2:1995 specifies allowable tolerance but is not widely recognised. BS 1088-1:2003 Marine plywood – part 1 is more generally recognised within the plywood industry and *may* provide more useful references.
- **Thickness:** 6mm (5.5mm nominal (+/- 0.2mm) which is 6mm prior to finishing).
- **Panel Size:** 1220mm x 2440mm (4ft x 8ft).
- **Sustainability:** Comply with the EU timber regulation introduced in March 2013.



Further Information

- **Glue Bond:** EN 314 -2:1993 Plywood – Bonding Quality – Part 2: Class 3 (Exterior Conditions). **This is the standard that replaced “WBP”.** Remember, this only defines the glue bond between plies – nothing else.
- **Bond and Resistance to Decay:** EN 636: 2003 - 2 Plywood specifications refers to bonding quality AND biological durability. This standard is harmonised with EN 314 and so in order to achieve EN 636 – 2 the material also has to achieve a minimum of EN314 -2 Class 2.
- **Outer Veneers:** The quality of the outer veneers is naturally important affecting flatness, smoothness, ease of fixing and the ability to accept adhesive. The CFA would recommend tropical hardwood rather than softwood veneers are important and that they should be a minimum of 0.75mm thickness. The veneers should be untreated to avoid issues with priming or adhesive absorption.

EN 635-2:1995 Plywood – Classification by surface appearance – Part 2: Hardwood defines the quality of the plywood used for the outer veneers but this standard is apparently not widely used or quoted within the plywood industry. Other standards may be offered (“BB/BB” “C/CC”) but we are reliably informed that these have been produced by the Far Eastern Plywood trade itself and they are not formally regulated.

- **Internal Core Quality:** The core and internal structure of the plywood is important. There are a number of defects that can occur including overlaps and pleats, core gaps and blisters, all of which can telegraph through to the surface of the plywood.

EN 635-2:1995 also specifies allowable tolerance for internal manufacturing defects. However, as previously stated the standard is not generally recognized by the flooring industry. BS 1088-1:2003 Marine plywood – part 1 is more generally recognised within the plywood industry and also contains definitions for internal structure that *may* provide a more useful reference.

- **Thickness:** There are no current standards that we considered can be quoted that are precise enough to adequately control the thickness of plywood in what is actually quite a demanding application. Even slight variations between panels will telegraph through a high gloss flooring surface, particularly against natural backlighting. Flooring standards generally recommend 6mm plywood. In reality once face veneers are sanded and finished, this will translate to 5.5mm. The CFA would recommend that this dimension should not vary by more than ± 0.2 mm from the target dimension, for any production batch. This is understood to be achievable by manufacturers of plywood.
- **Panel Size:** The flooring industry has traditionally worked with 4ft x 8ft sheets or 1220mm x 2440mm
- **Sustainability:** The EU Timber Regulation (EUTR) came into force in March 2013. It bans illegal timber in the EU and requires anyone handling wood or wood products to assess the risk that those products may have come from an illegal source and acts to mitigate that risk. With this in mind the CFA would recommend that any timber purchased should have a valid and fully documented “Due Diligence” procedure to prove it. A chain of custody (C-o-C) certificate through a recognised body such as PEFC or FSC *may* provide evidence of due diligence.



The above standards and references do not detract from the need to ensure that plywood is transported, stored and conditioned to ensure that when used an overlayment it is in moisture equilibrium with the location in which it is being fitted. Failure to observe the recommendations relating to this essential area of consideration may in the worst case scenario result in, for example, shrinkage and plywood lines showing through to the surface of a decorative vinyl floor covering.

BS8203 – Installation of Resilient Floor coverings, makes the following recommendations;

Timber Bases

3.3.1 General

Timber bases should be sound, rigid, level and dry. The timber should be at equilibrium moisture content, i.e. the state of dryness it will attain in normal service conditions, at the time it is covered.

Fabricated underlays

3.8.1 General

Fabricated underlays should be laid where required over existing timber bases (see **3.3**). Wood-based fabricated underlays should be at the equilibrium moisture content they will have in service at the time they are covered.

Fixing of plywood should also follow best practice guidelines.

The CFA Guide to Contract Flooring makes the following recommendations;

Pg 48 - Overlay with plywood sheets, leaving an expansion gap of 1mm at all edges. Fix using screws* at 100mm spacing around the edge with a fixing line 12mm from the edge and at 150mm intermediate centres throughout the area of each board.

*An appropriate, secure, mechanical fixing method should always be chosen e.g. annular ring shank nails are also regularly used within the industry and generally deemed acceptable.

Having recognised this industry issue and invested in producing this guidance note, the CFA are seeking to develop these recommendations in to a formal standard against which a “flooring grade” of plywood could ultimately be supplied and referenced within standards.