Wood Protection Association

in collaboration with

Timber Trade Federation
growing the use of wood

GUIDANCE NOTE

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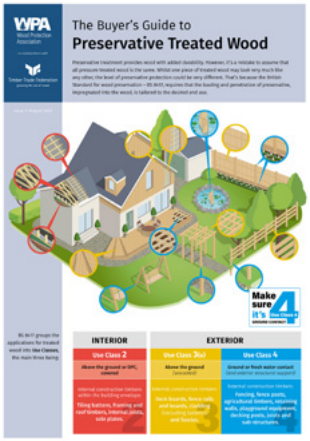
Understanding Use Class 2 (UC2)

Preservative Treated Wood

Overview

Consumer and contract law require that any product offered for sale must be fit for its intended use and a wood product impregnated with preservative is no exception.

The minimum standards for the treatment of wood are set out in British Standard BS8417 (*Preservation of Wood: Code of Practice*). In this standard, the level of treatment is tailored to the application 'Use Class' of a wood product as defined in BS EN 335 (*Durability of wood and wood-based products*).



Use Class 2 is for end uses where wood is used **indoors, above ground** and **within the building envelope**, but with an **occasional risk of wetting** (*from plumbing leaks for example*).

See the **WPA/TTF Buyer's Guide for Preservative Treated Wood** for more details on the correct application of Use Classes.

Specification of correct treatment for Use Class 2

Whilst the risk of failure in service as a result of decay or insect attack in Use Class 2 applications may be relatively low, the cost and difficulty of remedial work on such structural timbers may be significant, so preservative treatment is still recommended. NHBC, for example, specify that all external structural walls in timber frame structures must be treated for this reason.

The table overleaf identifies common Use Class 2 components and specifies the minimum preservative penetration for a 60-year desired service life (DSL) category in wood species that are classed as either permeable or resistant to treatment. Compliance with BS 8417 is achieved by meeting these requirements to an acceptable quality level (AQL).

A written specification should always include:

> **The component type and size** *for example: external wall framing 45mm x 75mm.*
>
> You may also wish to specify the component **species**.
>
> **The treatment Use Class** *eg.* **Use Class 2 (UC2).**
>
> **60 years** *will be taken as the default service life for internal structural timbers unless otherwise specified.*

Preservative retention

Retentions are expressed in terms of the preservative manufacturer's recommendation for the given use class, which for UC2 is R2 for 60 years. R2 is based on laboratory tests, possibly including leaching, as specified in BS 8417 and EN 599-1. These R values are the minimum required retention in the zone requiring analysis.

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BS8417 preservative penetration requirements for common Use Class 2 components for a 60-year desired service life (DSL) [2]

Diagrams showing preservative penetration are for illustrative purposes only – actual penetration will vary by species and heartwood/sapwood ratios within each component treated.

Timber Components	**PERMEABLE timber** [1] All Pine species	**RESISTANT timber** [1] Spruce, Larch, Douglas Fir
Roof timbers (risk of wetting) **Roof timbers in *Hylotrupes* area** [7] (risk of wetting) **Tiling battens** **External walls** (sawn wood) **External walls** (CLT) [4] **Ground floor joists**	**Retention measured across the outer 3 mm.** No minimum penetration requirement (NP1) 	**Retention measured across the outer 3 mm.** No minimum penetration requirement (NP1) 
Sole plates above DPC (sawn wood) [6] **CLT** (above DPC) **used without a sole plate** [5]	Minimum **3mm lateral** (NP2) [3] 	Minimum **3mm lateral** (NP2) [3] 

NOTES:

1. BS EN 350 gives four classes to indicate the treatability of the sapwood and heartwood for a range of wood species. For UK preservative treatment purposes, however, only two classes are used: permeable *(Treatability Class 1)* and resistant *(Treatability Classes 2, 3 and 4)*, in both cases based on the treatability of the sapwood.
2. Sampling requirements under **WPA Benchmark** quality scheme: Check on retention and penetration levels initially once every 6 months by analysis of typically 13 treated samples *(see point 3 below)*. See WPA Benchmark scheme document for further details.
3. Achievement of consistent NP2 and deeper penetration in resistant species is often very difficult and may require extensive sampling and analysis to verify. If it is not possible to distinguish between heartwood and sapwood, the whole sample should be regarded as sapwood.
4. For CLT panels used in Use class 2 it is recognised that a penetrating treatment process, as recommended in BS8417, may not be possible owing to the size of the component. In this case a superficial application such as spray or dip treatment is permitted provided this gives an even treatment of the entire panel including the edges.
5. If CLT panels are used directly on top of the DPC without the use of a sole plate, then these panels should be treated with a non-leaching preservative to a retention suitable for use class 3.
6. Soleplates are at greater risk of wetting, so the decay hazard is higher than for other components in Use Class 2. For this end use the preservative retention should be derived from R3.
7. Area of *Hylotrupes* beetle infestation is defined in Building Regulations. The preservative used to treat such roof timbers must be effective against *Hylotrupes* as well as wood destroying fungi – check with manufacturer.

Specification & Installation Check List

DO establish the Use Class of the timber you need, before ordering.

DO tell your supplier in writing, that the wood must be treated to that particular Use Class to comply with BS 8417. Ask them to verify that the wood supplied meets your Use Class specification – on the delivery note and invoice or a treatment certificate.

When buying from stock always check to which Use Class the wood has been treated.

DO NOT substitute wood that has been treated for an indoor application for use in an external application – failure is inevitable. *For wood in permanent ground or fresh water contact, or providing exterior structural support, Use Class 4 levels of protection MUST be achieved. Anything less and service life, structural safety and customer satisfaction will be compromised.*

DO NOT supply wood that has been treated for external use for what you know will only be internal applications. *Fitness for purpose works both ways – unnecessary overtreatment is no more best practice than under treatment. Buy and sell the right product for the job. UC3 treated wood is unnecessary for internal use and is not superior to UC2 material for that application.*

When cross cutting, notching or boring treated timber products during installation, **ALWAYS** apply an end grain preservative treatment to freshly exposed areas – to maintain the integrity of the protection.

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