

Association “acts to correct misperceptions” about BS

In May 2014 BSI published a new version of the wood preservation standard BS 8417:2011 + A1: 2014. The main change in this edition was the strengthening of the 30 year desired service life (dsl) specification for use class 4 (ground contact) timber treated with BS EN 599 type preservatives.

The move followed collaborative work by the Wood Protection Association (WPA) Technical Committee, the major preservative manufacturers and its members producing wood for high-ways contracts. This work highlighted that the performance of longer service life sawn posts may potentially be compromised by exposed heartwood surfaces.

Variability in the natural durability of heartwood was a significant factor contributing to the strengthening the specification says WPA director, Steve Young.

It is important to note that the new standard does not require an increase in preservative retention over what was previously required for 30 year dsl. To ensure adequate protection the penetration class has been increased by one step from NP5 to NP6 for 30 year use class 4 specifications for sawn wood with exposed heartwood faces. This means that for species with sapwood classed as “permeable” (among the softwoods this applies only to pine) full sapwood penetration and 6mm penetration of any exposed heartwood must be achieved. In species with sapwood resistant to impregnation 12mm sapwood penetration and 6mm penetration of exposed heartwood is required.

“Ever since WPA first alerted treaters to BSI’s plans for the 30 year specification in 2012 we have been at pains to make clear that the focus was on achieving the new penetration requirements” says Steve Young who adds that WPA is keen to emphasise that any process by which

this is achieved is acceptable: “Incising is just one technique by which the depth of penetration in heartwood can be achieved, other techniques can and are being used – the perception that mechanical incising is the only way to compliance is incorrect.”

Correcting the misperception

Some fencing contractors believe that only posts that have been incised will satisfy the Highways Agency contract manual and WPA continues to take action to try to set the record straight. Steve Young says that one possible source of the misperception is the National Highways Sector Scheme 2a Fencing document published by UKAS in November 2014. This included a ‘note’ for information stating that contractors should expect to see incised wood supplied to meet the new 30-year specification.

Earlier this year WPA set about trying to get this note corrected. An alternative form of words focused on penetration rather than incising was presented to the SS2a advisory committee and accepted. WPA is now lobbying hard for UKAS to amend and republish the note for information which should be a major help to correct the misperception about compliance with national



Right: Cross section samples of pine 30 yr dsl posts sprayed with copper reagent reveals the preservative penetration achieved without incising.

FROM THE WPA BLOG

Why the changes?

British standard classification of natural durability is based on the heartwood of a species and, as a consequence of the increasing variability, the performance of longer service life sawn posts may be compromised by exposed heartwood surfaces. Such surfaces are resistant to preservative penetration and hence may be under-treated. Fence posts sawn from a species like Douglas fir, for example, are likely to have a high proportion of heartwood on exposed faces. The 30 yr desired service life specification in BS8417:2014 was upgraded to require exposed heartwood faces to be penetrated with preservative to 6 mm in addition to sapwood penetration requirements.

Accounting for substrate variability

An Acceptable Quality Level (AQL) is applied to penetration requirements within BS 8417. Typically for resistant species the AQL is set at 25%. In addition, even within the 75% of samples which must pass, the enhanced heartwood penetration required for a 30 year desired service life is only required to be visible in 75% of the exposed surface area of that heartwood.

Achieving the new requirements

Any process that results in the achievement of the 6mm heartwood penetration requirement may be used. Mechanical incising is mentioned in the standard as one example of a technique which has been used in the past to help enhance preservative penetration in resistant species. Unfortunately, some specifiers and contractors have interpreted this wording as requiring that incising must be used in order to satisfy the new 30 year specification which is not correct. **Penetration is the key factor and any method of achieving the requirements of this revised standard is the responsibility of the timber treater.**

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Changes to timber treatment standards, a critical view

In April 2014 a new version of BS 8417, the UK standard for treated timber was published, the main changes concerned a strengthening of the 30 year desired service life specification for use class 4 (in ground contact) treated timber. Changes to the standard focus on chemical penetration.

For products in ground contact, with a desired service life requirement of 30 years, the standard requires 6mm penetration in exposed heartwood of Douglas fir and larch. It seems to imply that the only, or at least the best, route to compliance for achieving a 30 year desired service life is through incising.

The standard states: "Heartwood is difficult to treat (regardless of sapwood permeability) and even where a use class/desired service life combination does not include a requirement for penetration in heartwood, consideration is to be given to the advantages of special measures, such as incising, to improve penetration.

In addition to this the National Highways Sector Schemes for Quality Management in Highways Works, 2A, part 7.4.3) states that: "Contractors installing timber highways fencing (and environmental barriers) whose material were subject to contract after May 2014 should expect to find that timber to be installed in ground contact has been INCISED before treatment."

This has created a great deal of confusion and misunderstanding about what is actually required. Is it about penetration or is it about incising?

Many treaters have now invested in expensive incising technology in order to meet the Highways Agency Standard. There are a number of companies supplying a variety of incising machines into the market. This has created further issues. Incising techniques have not been standardised – there are some bad examples of incised timber on the market that does not meet penetration requirements but are acceptable under NHSS2a.

The WPA, in their durability trials, have reported a number of times the need for more work on penetration of larch and Douglas fir heartwood: "During the preparation of incised and treated

samples, it became apparent that, whilst eminently suitable for spruce and pine heartwood, existing, commercially available incising techniques do not yet provide a sufficiently consistent enhancement of preservative penetration in larch and Douglas fir heartwood." (WPA Newsletter on Durability trials)

Questions that need to be asked:

- Has a British Standard been changed without the technical evidence to support change?
- How can industry be expected to comply if the experts in the field of timber treatment are themselves having difficulties achieving the standard?
- What Standard is industry aiming for – Penetration or Incising?

Comment from Craig Leitch, Charles Ransford and Son Ltd:

"The WPA must accept responsibility for the confusion they have created around these standards, after all the WPA not only chair the committee that instigated changes to BS8417, focusing on penetration, but also chair the NHSS2a committee which ignored penetration and focused on incising. There was no consist-

ency in their approach.

"It is also interesting to note that the WPA, in their field trials, is finding it challenging to meet the penetration criteria of the new standard. Perhaps it would have been more prudent to consider changes to the standards after field trial data was available. That way industry could have invested in the correct technology with confidence".

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