

Weathering of pallets stored outside

Sawn timber species used in pallets in Europe are the strongest softwoods, good to work with, good on machining and provide a cost effective product. They out perform all other materials.

They are much stronger and cheaper than plastic pallets, stronger than all wood chipboard pallets and a fraction of the cost of metal, so they are widely used. They are ideal for most users but have one weak point. They can suffer in appearance when left in the open for more than a month or two in damp weather. The days are long gone when strong chemical ant-stain treatments that kept them looking good were permitted (unusually extreme white mould damage is shown Fig 1).



With regards to more common weathering the species frequently used are amongst the least durable wood species grown. Sitka spruce, Scots pine, larch and European redwood/whitewood are the main UK pallet species are classed in adjacent groups (least durable) in BS EN 350* (shown Fig 2).

Unlike fencing pallets outdoors are stored flat, they don't easily shed water. So where water, warmth and oxygen are readily available, mould spores drift in the wind, settle and then white/grey mould can grow at any temperature above about 5 or 6 degrees.



Where timber full-perimeter pallets are in common storage mode in piles laying flat, a third of boards in the pile are tightly compressed by the baseboard of the pallet above. Drying air has no access and these 'tight joints' can remain moist for weeks. That is a perfect breeding condition for sapstain (also known as blue stain) shown lower picture.

Does this matter from a strength point of view? Happily no; the British Standard* states that softwood when permanently damp and above the decay safety line of 20% moisture content then significant decay usually commences after 3 years. This means as long as the pallets are brought under cover (and allowed to dry) after no more than a few months all that will be lost is good appearance.

The batch will in some cases be unattractive to buyers and users but we do know that if brought under cover and dried to below 20% the timber will (even at this late stage) recover its structural strength, which is all important for pallet safety. The unattractive surface will unfortunately not disappear even with drying to a low level.

It is not possible to safely clean surface weather damage with water or cleaning fluids, as there remains the issue of soaking-wet pallets and possible tainting through certain cleaning fluids chemically breaking down,the only sure way is dry at manufacture and store undercover when years of sound use is expected.

*Tables of durability in BS EN 350 / FPRL UK reports

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