

Surface deterioration of pallets stored outside

The timber species used in pallets in Europe are amongst the least durable wood species available. However, because they are plentiful, light and strong they are ideal for use as pallet timber but suffer when left in the open for more than a month. Tables of durability in BS EN 350 state that these species when permanently damp above the decay safety line of 20% mc will last as little as 3 years before significant decay commences

(‘significant’ meaning loss of much of its original strength). Unfortunately that ignores surface deterioration of the outer 1mm. This visible top layer exhibits onset of decay much earlier than 3 years. A month or two where water, warmth and oxygen are available with mould spores drifting in the wind and settling, then white or grey mould can easily grow.



Sitka spruce and Scots pine are the main pallet species and are equally poor* (see below) in resisting surface deterioration from weather and only where positioned vertically (eg. fencing) can still look good after 3 or 4 years without protection such as painting. The most vulnerable situation is timber lying horizontally so rain collects and remains for some time before wind and sun disperse moisture. The worst situation of all however is where timber pallets are in their common storage mode, in piles laying flat, here a third of boards are tightly compressed by the baseboard of the pallet above so drying air has no access and these ‘tight joints’ can remain moist for weeks. Perfect breeding conditions for stain (pictured above) or mould.

Pallets stored in a yard even for weeks (certainly months) in wet areas of Britain can be expected to be above the decay safety line of 20% mc (moisture content) for much of that time, a prime condition to develop white mould or stain.

So white or grey mould can be expected on these pallets at anytime, as can sapstain (also known as blue stain) and although unattractive to buyers/users we do know that if brought under cover and part dried below 20% the timber will even at this late stage recover 100% of its structural strength, which is all important for pallet safety. The unattractive surface will not disappear unfortunately without surface planing.

Nor is it possible to safely clean such markings with water or cleaning fluids, as there remains the issue of soaking-wet pallets and possible tainting through certain cleaning fluids chemically breaking down.

*non-durable/perishable species based on UK tests and listed in BS EN 350: aspen, ash, beech, birch, poplar, radiata pine, Scots pine, Sitka spruce