Polyvine lead in the technology of protecting timber from water and UV.
Our industry leading laboratory has enabled Polyvine to develop a unique UV protection system which when combined with waterproof binders gives the highest level of protection to our clear oils and varnishes.
You can't completely stop or reverse the weathering of exterior wood, but you can slow the process dramatically by using the right type of finish system.
The two most destructive environmental variables to an exterior coating system and the wood beneath are sunlight and water.
Sunlight is the major cause of damage to wood.
One component of sunlight is ultraviolet light, commonly referred to as UV.
The ultraviolet component of sunlight (280–400 nanometres) is principally responsible for this degradation.
UV light is responsible for most of the damage to exposed wood because it changes or destroys the wood's lignin, a component of wood that hardens and strengthens the cell walls.
In more scientific terms this process is called photo-oxidation.
When wood is exposed to sunlight and, above all, to the UV radiation of the sun, wood components and mainly the lignin are degraded on the surface. This results in a discolouration. If the wood surface also is exposed directly to outdoor weathering, the water-soluble degradation products of the lignin are washed out whereby the photo-chemically stable silvery-white cellulose is left.
However, the wood moistening due to dew and rain, results in an attack by dark-coloured mould fungi as well as to an entry of dust particles so that the surface turns grey to black over time.
The UV filters contained in the coats are responsible for absorbing UV light. The more filter a finish contains, the less UV light will get through to the wood itself. Opaque finishes like paint and solid body stains are very efficient in blocking all of UV light from hitting the wood. On the other hand, transparent stains will allow the character of the wood to show through the finish while giving protection and blocking UV.
The beauty of wood establishes it as an exceptional construction material where aesthetics are important — its grain and texture make it a favourite both inside and out. Unfortunately, unprotected wood readily degrades and, therefore, needs protection not only from moisture and fungi, but also from UV radiation.

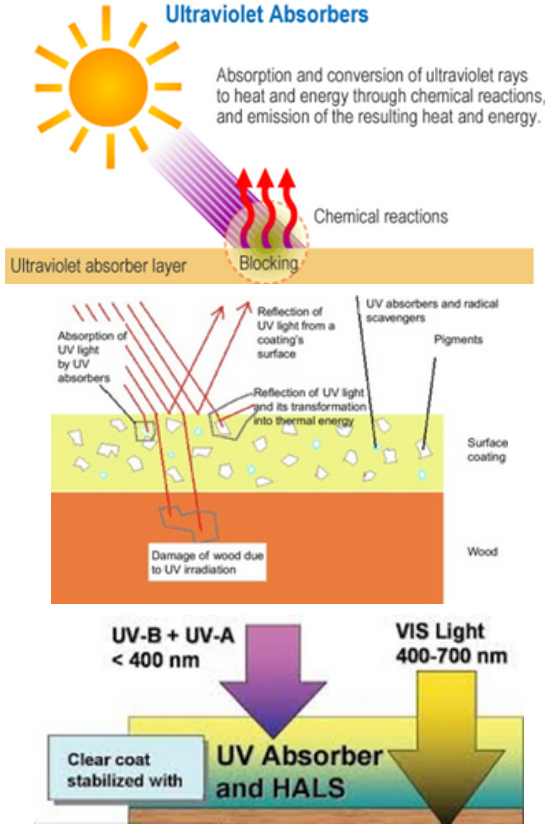
UV shielding can be obtained in 2 ways.

Transparent iron oxide pigments (colours the timber):

Transparent iron oxides are multi-functional non-toxic pigments that combine a range of colour shades with UV absorption, transparency and weathering stability. It is possible by the blending of transparent iron oxide pigments with other pigments to achieve a range of standard wood shades.

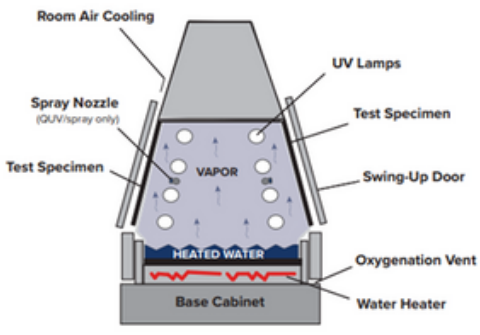
Clear protection:

UVA absorbers absorb ultraviolet rays (energy) efficiently and dissipate them into heat. This helps to prevent visual and mechanical degradation as a result of photo-oxidation, thereby extending the lifetime of the coating and ensuring a high performance over a long period of time.
Quenchers are a type of additive that take in the energy from the excited electrons and release it through quenching,
Light stabilisers offer free radical scavenging, (mopping up free radicals generated by the exposure to sunlight). This helps to prevent further deterioration of the coating. These are called hindered amine light stabilisers, or HALS.
A combination of HALS and UVA delivers a dramatic improvement in UV protection.



Polyvine use all the above 3 systems in their clear protection giving unique protection.

Polyvine conduct continuous QUV ACCELERATED WEATHERING TESTS to ensure our systems give the maximum protection.



UV protection by Peter Wells, Polyvine Technical Director.