17. Finishing

17.1. Dry Interior Applications

Structural plywood and LVL used in dry interior applications can be finished in any finishing products suitable for wood surfaces. For plywood, A or B quality faces should be specified as a suitable substrate for high quality interior finishes, stains or paints. An A quality face grade is suitable for clear finishing.

17.2. Exterior Applications

As a general rule all structural plywood and LVL exposed to the weather should be preservative treated against decay and surface finished to prevent surface breakdown due to weathering.

Weathering of unprotected wood surfaces is caused by exposure to sunlight and rain or other moisture sources and is characterised by a change in colour of the exposed wood surface followed by a gradual surface degradation. Rain and sunlight cause wetting and drying of the timber surface resulting in swelling and shrinkage, stressing the wood surface and causing cracks and checks. The leaching and bleaching of the timber surface from weathering eventually results in the timber surface turning grey. In the case of plywood and LVL the small peeler checks produced in the back of the veneer during manufacture become enlarged and break through to the face of the plywood when exposed to continuous wetting and during cycles. This results in surface checking which allows more moisture to penetrate and can eventually cause the surface veneers to breakup. All plywood and LVL surfaces should be protected from weathering to achieve a long service life.

In exterior applications the plywood or LVL surface can be finished by:

- painting
- coating with water repellents
- overlaying with medium density phenolic impregnated papers (plywood only)

Plywoods with an A or B grade face veneer quality are suitable for a high-quality paint or stain finish. Plywood with C or D quality face veneer is not designed to provide a high-quality paint substrate. Plywood cladding products with machined or textured faces are also very suitable for paint or stain finishes.

Where paint systems are required in exterior applications, full acrylic latex paint systems are recommended for structural plywood and LVL. Acrylic latex paint systems are more flexible than oil based or alkyd enamel paint systems and better tolerate any expansion and contraction of the timber substrate due to moisture movement.

Rigid paint systems, including oil based and alkyd enamel paint systems are not recommended for use on plywood or LVL in weather exposed applications. However, they can be used on medium density overlaid plywood because the overlay acts to prevent surface checking of the plywood face veneer.

Edge sealing of plywood and end sealing of LVL is considered good practice to minimise moisture uptake through the end grain and reduce localised swelling and surface checking at the plywood panel edges or LVL ends. The back or unexposed face of plywood should be left unsealed if possible to prevent moisture being trapped within the panel.

Orientation of the plywood or LVL needs to be considered when finishing requirements are being determined. Horizontal surfaces are more exposed to sunlight and moisture ponding than vertical surfaces, and consequently present a greater hazard to paint breakdown and surface checking. The hazard will be increased if the horizontal surface is also subject to traffic.

17.3. Durability and Finishing Applications

Dry interior environments

Structural plywood and LVL used in dry interior environments where the plywood and LVL are installed and kept in the dry condition (moisture content below 15%) will not be subject to the moisture related issues of weathering, surface mould, or decay. No particular finish or treatment will be required for durability provided that in termite susceptible areas, good building practices have been implemented including regular inspection and maintenance.

Exterior exposed above ground

Structural plywood and LVL used in applications exposed to high moisture conditions should be preservative treated to resist decay and insect attack and surface finished to minimise weathering. Good detailing should include sealing of the end grain to minimise moisture ingress. Construction details and installation should allow sufficient space for expansion and contraction of the plywood or LVL due to moisture content changes.

In ground contact with water

Applications in which plywood or LVL are in contact with ground water for extended periods of time provide conditions highly conducive to fungal or insect attack. Preservative treatment appropriate to the hazard level must be specified. Typical applications might include tanks, cooling towers, retaining walls, foundations etc.

Contact with sea water

Salt from sea water will have no adverse effect on plywood or LVL. The water will cause the wood to swell as would exposure to moisture. The main durability issue for plywood or LVL in contact with sea water is marine borers. Preservative treatment to H6 preservative levels will be required where marine borers are present.