

Pre-conditioning

Bonded panels must be stable. The most important factor in achieving this stability is the pre-conditioning of substrate materials, surfacing laminates and backing laminates before they are bonded.

Pre-conditioning minimises the effects of differential movement caused by the materials' reaction to changes in relative humidity.

The following procedure will allow the laminates to reach equilibrium. Any subsequent movement caused by changes in humidity will then be equal on each side of the bonded panel, greatly reducing the risk of bowing.

Condition Formica® decorative laminates and substrates before veneering so that all materials reach equilibrium and are neither too dry nor too damp.

Optimum conditions are achieved in a dry storage area (about 20°C and 50% - 60% Relative Air Humidity). The sheets to form the opposite faces of the same composite board are best conditioned as a pair, with their sanded backs together. Sheets thus paired should be stacked, covered, and left for a minimum of three days to reach moisture equilibrium. In this way they will achieve near-identical moisture contents prior to bonding, with any subsequent dimensional movements being similar in magnitude and direction on each side of the composite panel.

Wood-based substrates should have a moisture content of around 9%. The moisture content of laminates cannot be measured with a normal moisture meter, but the face laminate must have the same moisture content as the corresponding backing board; this can be achieved by pre-conditioning face and backing laminates together for a minimum of three days.

If the composite boards are to be exposed to constant low relative humidity in their subsequent application (eg as radiator castings), pre-condition the laminates and substrates in warm dry conditions for a minimum of three days. This will pre-shrink the materials to avoid any subsequent shrinkage stresses.