18.11.2010

Planing Guide and Recommendations

Planing In General

As a result of the ThermoWood heat-treatment process, cupping can occur in sawn raw material. It is necessary when planing thermowood which has not been re-cut before planing to install infeed rollers as illustrated below: Both recommended methods enable a solid contact surface to be formed with the planer bed, thus reducing the risk of surface cracking and enabling higher infeed roller pressure. It is important to adjust the roller pressure to suit the section and profile being planed to avoid splitting.

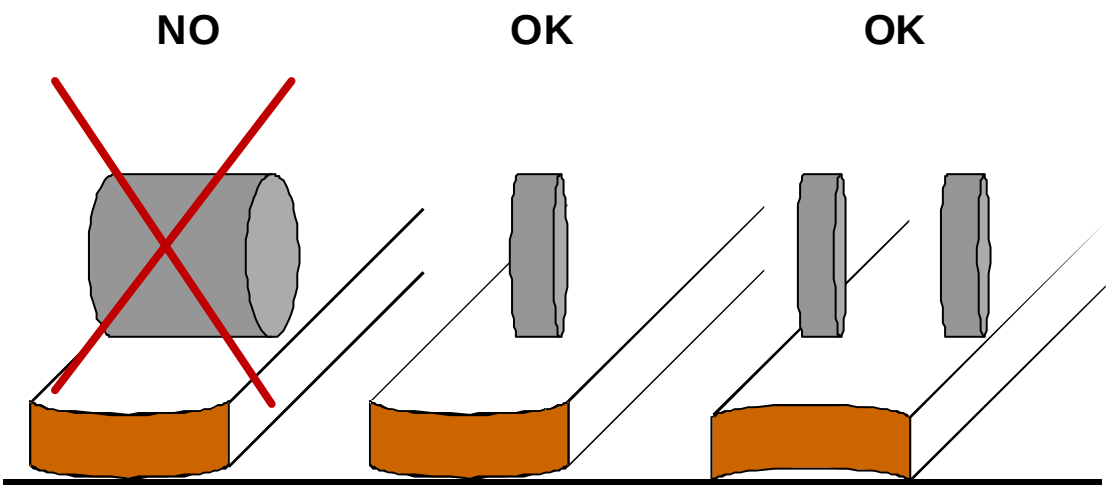

Figure 1. Recommended infeed rollers to avoid cracking of the boards.

The thermal modification process changes the colour, structure and moisture content of the material. The material becomes more susceptible to mechanical damage and this must be taken into account when handling. In order to reduce feed-roller damage, it is advisable to have a flat underside in contact with the planer bed.

When planning Lunawood® friction is reduced enabling a smoother planing process. This is due to the lack of resin in the wood.

Speed

In some planing lines, the feed speed may need to be decreased. If the infeed speed is decreased, the rotation speed of the cutter blocks must also be reduced. If the ratio of cutter rotation speed to infeed speed is too high, burn marks to the wood surface may occur.

By adjusting the ratio of feed speed to cutter-head speed it is possible to achieve a very high quality finish. Note; very smooth surfaces can cause difficulties when applying certain coatings.

Roller pressure, infeed speed, cutter rotation and mechanical handling differ from one production plant to another. Therefore, no general rules can be given. When planing Lunawood® there will be different ideal settings for each planing machine.

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Cutters

To achieve best results use similar cutter settings and angles to those normally used when planing hardwoods or western red cedar. Machines (cutters and other surfaces) remain very clean after working with Lunawood® due to the lack of resin.

It is essential to keep the cutters sharp. Once dulling starts, damage to the knots and material around the knots starts to occur and the risk of splintering increases. Dulling occurs more quickly than when planing normal kiln dried pine or spruce but at about the same rate as hardwoods.

Dust

The dust is finer than that of pine and spruce, so care should be taken to ensure adequate extraction. The dust particles are of a similar size to that of western red cedar and some hardwoods. The dust cannot be used for making bio fuel pellets or included in animal bedding.

Storing

It is important to store the raw material, prior to planning, in a dry and well ventilated environment. When stacking there should be a sufficient number of bearers underneath the packs to prevent distortion. ThermoWood which is stored outside without covering is susceptible to colour change due to UV degradation and the general effects of weathering - therefore under cover storage is recommended.

Planing Lunawood Redwood – Pinus sylvestris

When planing Lunawood® redwood it is recommended to machine the heart side to be the weather-exposed face. This reduces the risk of annual growth-ring separation in end use.

The Lunawood® production process of redwood is optimised so that the heart side of the thermally modified board will become the weather exposed side.

When planing Lunawood, it should be borne in mind that shrinkage, due to the thermal modification process, can be greater than in non-modified timber. Therefore overall finished sizes should be reduced from those normally used in order to achieve fully planed surfaces on all sides.

Planing Lunawood Whitewood – Picea abies

The structure of spruce differs from pine. In thermally modified spruce, the risk of annual growth-ring separation is the opposite to that of redwood.

Therefore when planing Lunawood® whitewood the recommendation is to plane in a way that results in the weather exposed face being on the outer side of the board and the heart/pith side forming the reverse side.

The Lunawood® production of whitewood is optimised so that the 'outer side' of the thermally modified board is intended to be the weather exposed side.

Planing Lunawood - Radiata Pine – Pinus radiata

When planing radiata pine, either face serves equally well as the weather exposed side.