3. CROSS-LINKED TIMBER = DURA WOOD

DURA wood comprises of light to medium density plantation wood treated with cross-linking chemicals that react with the components of the wood's cell walls.

The treatment is done in a two step process. In the first stage the timber is treated with a water-based solution of cross-linking chemicals. The chemicals are absorbed in the wood's cell walls and then fixed in the timber during the second stage by curing the fully impregnated wood at temperatures above 100 degrees C.

By having the cross-linking chemicals reacting with the hydroxyl groups in the wood's cells walls, the wood becomes harder, more stable, and very resistant against attack by decay fungus, termites and wood borers without the use of biocides.

The treatment improves the stability of the timber by 30-50%, and this makes DURA wood very resistant to weathering.

The DURA wood process is carried out using synthetic chemicals and does not color the wood. By using synthetic chemicals instead of plant waste material, the process is simpler and cheaper compared to furfurylation.

While furfurylated timber is very dark in color and the dark color tends to hide the natural grain in timber, DURA wood has the same color as untreated wood and the wood grain remains visible. This make DURA wood the preferred choice for treatment of timber for applications where the natural beauty of the timber is desired such as for flooring, furniture, decorative mouldings etc.

When it is preferred that timber is colored, it is possible to incorporate a dye with the cross-linking chemicals and thereby give the timber a beautiful color without hiding the wood grain.

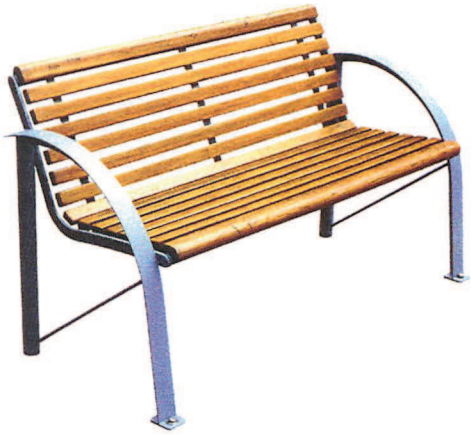
DURA wood can be used for outdoor applications, but should in this case be coated with a pigmented water repellent whenever appearance is important. Otherwise the timber tends to turn grey due to the UV-light and the timber is also susceptible to mould and stain attack.

3.1 Properties

i) Improves the dimensional stability by 30 – 40%.
ii) Offers good protection against a wide spectrum of decay fungus, termites and wood borers. Durability Class 1.
iii) Preserves the original color of the timber which makes it very suitable for treatment of timber for indoor use.
iv) Increases the timber hardness.
v) Reduces thermal conductivity.
vi) Enhances the durability of pigmented coatings applied to the surface of the wood.

3.2 Limitations

i) Only suitable for timber species that are easy permeable.
ii) A significant reduction in impact strength is to be expected. Other strength properties remain unchanged or are only slightly reduced.
iii) Limited protection against mould and stain fungus.
iv) Contains small amount of organic acid. Metal fasteners in contact with DURA wood has therefore to be made from corrosion resistant material such as stainless steel.
v) Need to be surface coated when used outdoor in applications where appearance is important.



3.3 Applications

DURA wood is used with advantage in applications where the original color of the timber is desirable and in applications where a high dimensional stability and a high degree of durability against biological degradation is preferred such as:

i) Indoor flooring
ii) Indoor and garden furniture
iii) Windows