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FENCING DETAILS

General Construction Rules

Ecoplastic can be used for many applications and practically anywhere where timber is used. However, plastic is a different material and therefore its properties require specific attention. In general plastic is less rigid than wood and therefore it is not possible to apply the same span used in a 1:1 way. Generally either the span will have to be smaller or a slightly thicker plank will have to be used. One significant advantage of plastic is that it is not influenced by moisture. Treatments that are normally performed on wood in order to prevent it from being influenced by water and moisture are not necessary for plastic.

When determining *ecoplastic* construction you have to take two material properties into account: expansion/shrinkage due to temperature fluctuations, and creep.

Expansion/shrinkage due to temperature fluctuations

As it gets warmer plastic expands and as it gets colder it shrinks. The construction will have to allow the material to expand or shrink; especially in the case of large constructions, such as fencing along dozens of metres. Due to the long length, expansion and shrinkage will become too large to be intercepted by the flexibility of the construction. In the case of smaller construction it depends to some extent on how much the construction can adapt and intercept expansion/shrinkage by itself.

Ecoplastic will expand to a maximum of 1.5mm per metre plank at 10°C. In the case of outdoor applications mounting normally takes place at a temperature between 10 and 20°C. We assume that 20°C is the minimum temperature. In summer, when the sun shines on the planks, temperature can rise to approximately 50°C due to the black colour of the profiles. The largest possible temperature difference will then be + or -40°C. Therefore it should be taken into account that the length of the plank can become 6mm longer or 6mm shorter per span metre.

Example expansion/shrinkage

If for example the centre to centre distance of poles is 1.25 metre and the plank is attached to one of the poles, an expansion of $1.25 \times 6 = 7.5\text{mm}$ should be taken into account. Shrinkage could then also be 7.5mm. Therefore the slit hole has to have a width of 15mm (centre to centre). When mounting, the screw should be placed in the middle of the slit hole and not be tightened completely. The plank underneath still has to be able to move. Also there must be some free expansion space next to the plank. (15mm in this example; 7.5mm for expansion of the plank on the left side and 7.5mm for the plank on the right side).

This calculation example can be translated across into other situations.

ECOPLASTIC DOES NOT ROT, SPLINTER OR BREAK EASILY. IT IS UV-PROOF, RESISTANT TO SALTS AND ACIDS AND WILL NOT GROW ALGAE OR MOSS

Fencing:

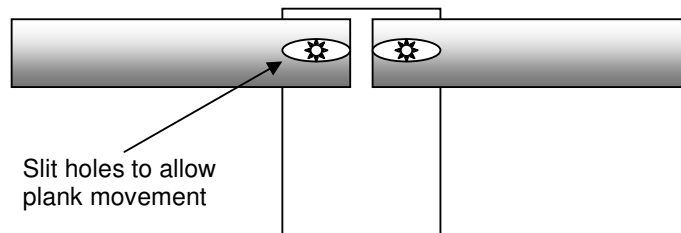
As mentioned in General Construction Rules, when fencing the expansion/ shrinkage element of *ecoplastic* must be taken into account.

When fixing planks onto fence posts, a slit hole should be used instead of a single hole and the screw installed in the centre of it. The screw should not be tightened totally onto the board, so as to allow the plank some movement along the slit in either direction. When the material warms up it will expand slightly longitudinally, and will shrink again when cool. This method of fixing ensures that the point of fastening does not break under the stress.

The slit should be about 2cm wide.

To allow movement within the planks caused by changes in temperature, there are 3 fixing options.

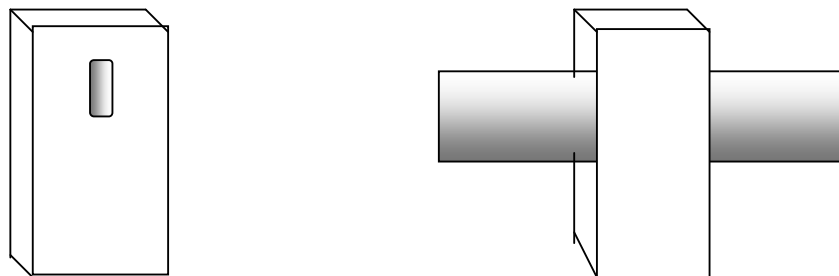
- Planks attached to one side of the post with about 1cm - 1.5cm spacing between each to allow for expansion, and using a slit hole for fixing.



- Planks attached to alternate sides of the post, as below, once again using a slit hole for fixing.



- Planks inserted through an aperture in the post. This is only suitable if enough material is left of the post once the aperture has been milled out.



Unlike wood *ecoplastic* does not require treatment with protective products which damage the environment.

- Drilling, screwing, sawing, hammering or clamping are all effective working methods.
- A tolerance of 1 to 2cm on a total length of 360cm should be taken into account.

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- Ecoplastic fence rails will expand and contract depending on temperature. To accommodate this movement a 10mm hole should be drilled in the rail through which an approx 5mm diameter fixing screw is fitted. Where rails are butted at each end a 5mm minimum space should be provided to allow for movement.

Drilling

When using a wood-steel or stone brace, a low speed is recommended.

Screwing

Screwing is perfectly suitable, but pre-drilling first is recommended. When screwing by machine the pressure should not be maintained too long.

Hammering or clamping

Hammering is a bit more difficult. It is recommended that the holes are drilled first. It can be effectively clamped.

Sawing

Preferably with an electrical circular saw, with a large blade if possible. A small blade can heat up, causing the material to melt and to become more difficult to saw. When sawing the tongue and groove boards lengthways the smaller piece can become bowed.

Shooting

Shooting of staples or nails works perfectly.

These points are for general guidance only and are not intended as a definitive guarantee of performance.

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