Wood preservation – constructional or chemical?

Wood is a raw material that has grown. By shrinking and swelling (working), it keeps parts of its vitality also after felling. A multitude of organisms bring the raw material wood back to its basic substances in the course of time.

This process is ideal in a world where issues about waste treatment are keenly discussed. In order to use wood in a proper and economically justifiable way, this cycle has to be interrupted for the required (necessary) lifespan of the construction (seeds + earth + water + solar energy → tree → wood play equipment → end of use → earth).

To increase the durability (lifespan) of the material wood, the following steps can be taken:

- selection of durable types of wood = types of wood with natural resistance against pests, e.g. larch, oak or robinia.
- constructional wood preservation = avoiding or minimising unfavourable influences by constructional solutions (reducing wetness).
- chemical wood protection = compensating missing natural resistance by chemical treatment (boiler-pressure impregnation).
- maintenance and care

Constructional wood preservation

Insects rarely pose a threat to play equipment over the course of its required lifetime of 10 or perhaps 15 years. However fungi are a potential danger. Fungi need nutrients, water and oxygen to grow. If one of these components is missing, they are unable to flourish.

In our climate, spruce/fir/pine wood, felled when healthy and during a period of slow growth, can achieve a lifetime of approx. 5 years when exposed to all weather conditions and without contact with the ground, provided that constructional requirements are met.

Our choice: Mountain larch

Chemical wood preservation

As play equipment is exposed to all weathers, only treatment with fixing (that is: difficult to leach out) salts is considered for wood types which have no natural rot resistance. Wood treated in this way can then be inserted into the ground.

Through impregnation with pesticides, the wood can be made resistant to fungus and insect attacks. These chemical wood preservatives can be different types, organic or inorganic.

To protect wood in extreme conditions (e.g. continuous contact with the ground), mainly inorganic, fixing wood preservatives are used.

All chemical preservatives are harmful in some way to pests but also man and the environment. All side effects should therefore be considered. The most technically advanced and effective type of wood preservation is boiler-pressure impregnation. If the impregnated wood is used for play equipment, the official register of permitted wood preservatives offers various solutions.

We use a wood preservative of the copper-Quat type. This preservative has been used successfully in the USA for more than 30 years.

Fürstenberg Permadur System

The Fürstenberg Permadur System provides a clearly improved wood protection. The 0.1 - 0.3 mm thick metal foil which covers the earth/air zone of the posts creates a so-called oligodynamic effect (biocidal activity through the slow release of metal ions). The metal foil which is used here is made of brass (copper/zinc alloy). In this way the growth of the wood-destroying fungi is reduced by two highly-concentrated protective components acting simultaneously. The brass foil is protected on the outer side by a plastic heat-shrink tube which has the secondary effect of cutting off the supply of oxygen to the wood-destroying fungi.

Disposal of pressure-impregnated woods

As with all technical products, disposal should be organised at the procurement stage, whether with cars, yoghurt cartons or play equipment, whether the play equipment is made of concrete, plastic, painted, galvanised metal, stainless steel or wood.

In the subsequent and proper disposal of wood it is important to decide how and with what means the wood has been treated in manufacture and during any maintenance measures. Therefore we code all impregnated components with marker discs which give details of the impregnation used. This also applies to laminated and painted wood and of course all other materials.

If you require further information we will be happy to assist.