

BIOLOGICAL AND CHEMICAL DURABILITY

WEATHER AND UV RADIATION RESISTANCE

Kerto® products can be used in service classes 1 and 2 as defined in the EN 1995-1-1 standard, which correspond to the use classes 1 and 2 as defined in EN 335. The product should not be used in the service class 3 (use class 3) without additional protective treatment. The designer should pay attention to the details of the construction and ensure that no water pockets will be formed.

During construction Kerto products and structures resist well temporary exposure to water and without decay, provided that they are allowed to dry afterwards.

Like all wood products non-treated surfaces of Kerto will slowly fade to grey due to UV radiation from the sun. This fading does not have an effect for the product's strength properties.

FUNGI AND MOULD RESISTANCE

The decay process causes wood based material to soften and lose their strength. The natural durability of Kerto products is grade 4 (limited durability) according to the EN 350-2 standard (scale from 1 very durable to 5 non-durable). Surface wood of all Nordic timber is classified to either class 4 or 5.

Phenol formaldehyde glue bond is not weakened by fungi or micro-organisms.

Outdoor use or use in high relative humidity conditions may cause mould growth on the surface of Kerto. If these conditions are expected, Kerto product can be ordered with MouldGuard surface treatment, otherwise a brushed or sprayed surface treatment should be applied. These kind of surface treatments have no adverse effects to the structural properties of Kerto.

Mould growth due to excessive wetting on the surface of Kerto may be removed by sanding. The Kerto member should also be surface treated with anti-mould agent after the removal of the mould growth.

Local authorities may require Kerto products to be treated against biological attack. Possible adverse effects of the treatment on other properties shall be clarified separately with the treatment provider.



Kerto products should be protected against moisture during storage and construction. Also, the possible moisture coming from the other structural parts should be taken into account, for example from concrete cast.



Wood is an organic material and therefore required protection against mould growth. Biological durability of Kerto products is highly dependent on the designed structures. The effect of the structure and its delimits must always be taken into account.



Kerto structures located in an unheated space should be treated with anti-mould agent throughout. Kerto can be ordered with a MouldGuard surface treatment that acts as an anti-mould agent.

CHEMICAL DURABILITY

The main components of wood: cellulose and lignin, react in opposite ways to acids and alkalinity. Cellulose is not very resistant to strong acids, but its resistance to bases is good. Lignin, on the other hand, is easily dissolved in bases, whereas it is resistant to most strong acids. For these reasons, the wood substance is quite resistant to moderate chemical effects: the resistant substance to some extent protects the non-resistant. In more detail, the following comments can be made:

- Kerto is resistant to many weak acids and acid saline solutions. Alkaline solutions soften the wood and cause it to swell.
- Acid substances have a destructive effect on the wood. Direct contact with chlorine, hypochlorite and nitrates should be avoided.
- Wood is generally quite resistant to organic substances. However, organic solvents such as acetone, benzene, alcohol etc. dissolve resins, fats and waxes, causing some swelling and a reduction in strength properties.
- Kerto has good resistance to fuel and oil. It only causes some discoloration.
- If Kerto product's reaction to a chemical is not known or the contact is permanent, each case has to be separately verified.
- Especially the potentiality of wood corrosion due to air pollution must be checked separately.

Make the most of **Metsä Wood**

