



JOINERIES MAINTANENCE MANUAL

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Causes for degradation of wood

Wood is a natural product & biodegradable. The degradation is accelerated by attack from heat, light, rain, frost, pollution, difference in temperature & microorganism.

Wood coatings are useful tool for protection of wood from vagaries of nature. Without protection bare wood can degrade within 2-4 weeks. Wood coatings beautify wood articles & enhance their life by slowing down the degradation process.

One must remember that coatings are also vulnerable to physical, chemical & atmospheric exposure hence requires judicious selection & periodical maintenance.

This article discusses the main enemies of wood & selection of appropriate coating system. Also discussed here are common maintenance method of wood articles & coatings.

Common enemies of wood are

Atmospheric agents

Insects

Funguses

Atmospheric agents

Sun rays & rain are two main culprits for degradation of external wood. Sun rays can alter the color of the wood that fades or gets grey. Ultra violet radiation from sun can decompose lignin, the binder for wood fibres causing disintegration. High temperature causes cracking on the surface & in conifer wood the spill of resins from wood contributes to creating yellow spots mainly visible in wood articles with light varnishing.

Rain increases the equilibrium moisture content of wood causing dimensional variation. It also causes rotting of wood creating breeding ground for insects & fungus. Furthermore certain wood species like Oak or Chestnut contain high percentage of tannic acid & rain may wash tannic acid causing development of persistent dark spots.

Interior wood also degrades on prolonged exposure to indoor light.

Insects

Insects make cavities & tiny galleries inside wood, attack the structure thus compromising mechanical properties of the wood article.

Funguses

The main funguses attacking the wood are classified as

1. Chromogenous funguses
2. Rottenness funguses

Chromogenous funguses, commonly known as blueing funguses cause alteration in the natural color of wood that gets greyish. They don't induce mechanical degradation like Rottenness funguses. Rottenness funguses get their food & nourishment from cellulosic fibres of wood & cause it's complete destruction.



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The development of funguses is due to high moisture content in the wood. To avoid undesirable moisture content it is necessary to make sure that coating film is always in good condition.

■ Prevention through coatings

Wood coatings enhance the beauty of wood products & greatly extend their life by insulating them from the vagaries of nature but can't completely save them because of biodegradable nature of wood as well as destruction of coating film on prolonged exposure to nature plus mechanical, chemical & thermal shocks it has to absorb during its life time.

Selection of appropriate coatings & their maintenance regime hold the key of life of the coatings & the wood.

We must understand the factors leading to the selection of coatings & causes of their degradation.

a) Selection of coating

Coatings for exterior joineries & interior joineries are different. Exterior coatings can be used for interior purpose but not the vice versa. Exterior coatings are subjected to harsher environmental condition. Extreme climate of middle east puts further stress on the timber & would require regular maintenance. Exterior coatings are designed to withstand ultra violet ray, light & heat from sun, termite/fungal attack, moisture/humidity, dust storm & various mechanical attacks. They are non-yellowing in nature.

Interior coatings on the other hand are moderate performer in those areas but excellent in terms of chemical, solvent resistance & very fast drying. Film of interior varieties are equally good against mechanical & physical abuse, form excellent film with higher out-put.

Interior coatings system available from Wellcoat paints.

1) Nitro cellulose 2) Alkyd-Melamine (acid catalysed) 3) Two pack polyurethane 4)

Single pack polyurethane 5) Water based single pack Acrylic & PU, solvo stain, universal stain & Protective stain.

Exterior coating system from Wellcoat paints

Two pack polyurethane (Aliphatic isocyanate based) 2) Single pack polyurethane 3) exterior stain & protective stain.

Recommended system for interior joineries

Clear system (open grain)

System – 1

Maxiwood N.C sanding sealer + N.C clear (gloss/matt/silk-matt)

System -2

Maxiwood N.C sanding sealer + Single pack polyurethane (gloss/silk-matt)

System -3

Maxiwood Acid catalyzed sanding sealer + Acid catalyzed clear (gloss/matt/silk-matt)

System -4

Maxiwood 2 Pack polyurethane sealer + 2 Pack polyurethane clear (gloss/matt/silk-matt)

System -4

Maxiwood Aquous sealer + Maxiwood Aquous lacquer (silk-matt/matt)

Depending of the condition of substrate Maxiwood Aquous filler or N.C filler could be applied prior to application of Maxiwood sanding sealer in all the systems except system-3.

Stains for interior use should be over coated with suitable lacquer after they are thoroughly dried.