Wood Preservatives In Roofing

Wood elements often form part of the roof assembly. They may be limited to minor components of the system, such as cant strips and wood blocking, or substantial components as in the case of wood decking and joists. With a few exceptions, such as duckboards, pipe supports and equipment bases, these elements are not normally exposed to the weather being protected by the impervious roof membrane.

Wood preservatives have been widely used in building construction to prevent the bio-deterioration of wood components. The principal organisms that degrade wood are fungi, insects, bacteria and marine borers. In building construction in Canada, fungal decay, mould infestation and damage from insects are of greatest concern. Fungal decay can result in severe loss of strength. Mould usually affects the strength of wood only slightly. It can, however, increase the absorbency of wood resulting the over absorption of glues and paints and render the wood more porous and "wettable" which may lead to the colonization of wood decaying fungus. In addition, there are concerns about the toxicity and health affects from human exposure of certain types of mould.

The growth of organisms generally depends on suitably mild temperatures, moisture, and air (oxygen). Several types of preservative treatments have been used to limit or prevent damage from such organisms, including treatment with oil preservatives (creosote), pentachlorophenol solutions, and waterborne preservatives (solutions containing copper, chromium and arsenic). In 1986, the first two classes of preservatives became restricted-use pesticides available only to certified pesticide applicators, limiting their general use in construction. Chromated copper arsenate (CCA) has, until recently, been the most widely used of the waterborne preservatives. A chemical compound mixture containing inorganic arsenic, copper and chromium, it has been widely used as a wood preservative since the 1940s. CCA is injected into wood by a process that uses high pressure to saturate the wood with the chemicals.

Concerns about the toxicity of the waterborne preservatives, has recently prompted EPA to limit the use of CCA resulting in the withdrawal of CCA from the market for residential use, including playground structures, decks, fencing and walkways. Canadian manufacturers of pressure-treated lumber voluntarily agreed to stop using CCA as a preservative in wood for consumers effective December 31, 2003. It should be noted that the EPA has not concluded that CCA treated wood poses an unreasonable risk to the public for existing CCA treated wood around or near their residences. However, as CCA contains arsenic, EPA has sought to limit its use and reduce the levels of potential exposure to this known carcinogen.

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