

RECYCLING OF CCA TREATED TIMBER

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Abstract

There are many reasons that speak for the incineration of CCA waste wood with the recovery of arsenic and copper based on recycling combined with it. The incineration of wood generates energy. After incineration only 0.5-3 % of the mass (weight) of the wood remains. After arsenic and copper have been recovered, there is hardly any waste left that needs to be stabilized. When the waste to be stabilized does not contain any water-soluble arsenic in the form of As_2O_3 , stabilizing becomes considerably easier. The selection of the incineration method is of great significance.

Incineration with fluidized bed provides a good incineration result, but the sand used as an additive makes the recovery of copper slightly more difficult. Fire grate incineration does not make big demands on the wood to be incinerated, but another incineration stage is required in order to achieve a perfect incineration result. Fixed bed combustion is a less common technological solution. However, full-scale trial runs have been conducted using this technology, too. The recovery of arsenic and copper is efficient when this technology is used.

There has been rapid development in the purification technology of combustion gases. The separation of arsenic from the gases is of critical importance. When gas is cooled using a dry or wet method and finally filtered using textile filters, the purity of combustion gases is sufficiently high. I feel the best alternative would be to separate arsenic in the form of As_2O_3 at the gas purification stage. When this is done, only a small part of the flue dust contains water-soluble arsenic or the arsenic is in a water-soluble form. Using this method, arsenic can be utilized in the form of copper arsenic in the manufacture of CCA.

Occupational hygiene is a primary concern in the purification of gases. Using mainly the wet method to separate arsenic is a much better alternative as far as occupational hygiene is concerned. Arsenic-free flue dust and bottom ashes could be used as raw material for copper in copper works.

If arsenic was recovered in the incineration of CCA waste wood, the production of arsenic could be reduced in the mining industry. This would be a substantial environmental advantage.

Additionally, it would also be useful to utilize other arsenious waste materials in the production of CCA, which would also promote environmental protection.