

Annexure – II

Name of the Technology

Low Cost Production of Nano Lime for Restoration of Heritage Buildings

Background.

In recent years, Nano Lime (Calcium hydroxide) finds its potential application in conservation and restoration of heritage structures due to its improved surface treatment. Lime is usually adopted for the conservation surface treatment due to quick transformation of lime into Calcium carbonate and the intended chemical compatibility between treated lime mortar and the treatment product. But the incomplete lime carbonation process and reduced penetration depth are the undesired limits for the surface treatment. The selection of nano powders depends on the compositions and pore size of the outside porous structure of the heritage mortar. Therefore, it is essential to design morphologically tuned nano lime using advanced nanotechnology for the restoration of heritage building to prevent further damage in the building materials.

Description of the product

Morphologically tuned nano limes have developed with high purity by wet chemical route for the restoration of heritage buildings. Different morphology like nano cubes, hexagonal nano platelets, nano flowers etc. with particle size of approximately varies from 50 nm to 500 nm. The compatibility of these nano powders has been checked with respect to micro structure, porosity, thermal expansion co-efficient and nano mechanical behavior of some of the important heritage buildings in West Bengal. The selection of nano powders depends on the compositions and pore size of the outside porous structure of the heritage mortar. Dimension nano limes were made according to the pore dimension of the mortars samples.