

**ENHANCE THE COATING PROCES OF APATITE
ON METALS**

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by

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Abstract

Primarily all metallic surfaces are susceptible to degradation when they are exposed to the environment. Therefore metallic properties of the surfaces are rapidly changed. Several factors affect the surface corrosion like, O₂ concentration, moisture content, salt concentration etc. Hence, applying the anti-corrosion coating to metallic surfaces is more influential to protect it from degradation. An anticorrosion property of apatite is utilized to prevent such surfaces. This is a value added application of apatite apart from its usage as a fertilizer.

In the present situation, powder coating of apatite is utilized to prevent the metal surfaces. But the whole process consists of many high cost activities. As an innovation, the cost of product becomes higher respect to the other anticorrosion coatings present in the market. However, any deprivation is not happening to the property of anticorrosion of the apatite within whole process.

This research focused to make an anticorrosion coat using apatite which is easier to handle, environmental friendly (as it) and cost effective compared to the products available at the market.

Initially pure apatite crystals were ground and sieved in to size less than 75 μ m using the sand grinder and sieve set. Then powder was mixed with other components in standard ratios which were decided after several experiments and final anticorrosive lacquer was produced. Then the anticorrosion property of each sample was tested in three ways compare with a higher selling anticorrosive lacquer in the market. These three methods are visual observation; microscopic observation and study of Fe ion (by metal dipped in stimulated corrosion media) release using AAS.

Experiments were repeated with changed corrosion media. Comparing the results of microscopic observations of corrosion spots and amount of Fe release in to the corrosion media in a constant time period in both industrially available lacquer and apatite based lacquer coated samples, the best composition of apatite lacquer mixture was determined.

Key words – sand grinder, anticorrosion, fluidized bed method