

신기능성 표면처리강판 제조기술의 최근 진보

Recent Progress in New Functional Coating Technology

김 태 엽
POSCO 기술연구원

ABSTRACT

The coated steels, mainly with zinc by either hot-dip galvanizing or electroplating, are widely used for panels of automotive, electrical appliances and construction, whose size of world market have reached 130 million tons in 2008. Current issues for the coated steels can be integrated in terms of high functionality, low cost, environment-friendly and available resource. The best solution can be provided if thin layer coating with higher quality is produced by an eco-friendly process, and PVD, physical vapor deposition, can be an alternative practice to existing coating processes.

PVD technologies have been very common ones in electronic and semiconductor industries, but recognized as non-profitable processes for the coated steels due to low process speed and lack of continuous operation skills. Systematic researches from 1990s in Europe, even though discouraged by a shutdown of the first Japanese PVD coating plant in 1999, have realized several continuous PVD coating plants, and also enhanced launching of developments in steel industries.

To be successful with PVD coating technologies over existing ones, productivity to meet economics should be created from a highly sophisticated process. Some PVD technologies fit for the high-speed process will be introduced together with experiences from industrial applications.