

ABSTRACT

A method for making a phosphate-treated galvanized steel sheet, including forming a phosphate film on the surface of a galvanized layer of a galvanized steel sheet using a phosphate treatment solution containing Zn^{2+} and Mg^{2+} so as to satisfy $2.0 < \text{Zn}^{2+} \leq 5.0$ g/L, $2.0 \leq \text{Mg}^{2+} \leq 5.0$ g/L, and $0.4 \leq \text{Mg}^{2+}/\text{Zn}^{2+} \leq 2.5$, and satisfying $0.020 \leq \text{free acidity/total acidity} < 0.10$. The making method allows the quick formation of a uniform phosphate film, whereby a phosphate-treated galvanized steel sheet having excellent corrosion resistance and blackening resistance is obtained.