

## Effect of Strip-entry Temperature on the Surface Quality of Hot-rolled Galvanized Steel Sheets

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**Abstract:** Based on the thermal equilibrium theory, the theoretical temperature range for 3mm thick hot-rolled steel plates entering the zinc pot was calculated to be 453.5-464.5°C. Within this temperature range, the effects of different strip-entry temperatures on the surface quality of hot-dip galvanized coatings were investigated. The surface morphology and structure of the hot-dip galvanized sheets were analyzed using scanning electron microscopy (SEM) and energy dispersive spectrometer (EDS). The results indicate that the temperature at which the steel plate enters the zinc pot has a significant impact on the surface quality of the hot-dip galvanized layer. An appropriate temperature can promote the formation of a uniform and smooth coating, while too high or too low temperatures can lead to an uneven coating and even surface defects such as white spots, black spots, and elongated streaks. The optimal surface quality of the coating was achieved at an entry temperature of 464°C.

**Keywords:** Hot-rolled Galvanized; Plate Temperature; Surface Quality