

Abstract

This surface-treated steel sheet includes: a steel sheet; a Zn-based plating layer formed on the steel sheet; and a coating formed on the Zn-based plating layer, in which a Si concentration, a P concentration, a F concentration, a V concentration, a Zr concentration, a Zn concentration, and an Al concentration of the coating are, by mass%, Si: 10.00% to 25.00%, P: 0.01% to 5.00%, F: 0.01% to 2.00%, V: 0.01% to 4.00%, Zr: 0.01% to 3.00%, Zn: 0% to 3.00%, and Al: 0% to 3.00%, in a narrow spectrum of Si2p obtained by performing XPS analysis on a surface of the coating, a ratio of an integrated intensity of a peak having a local maximum value at 103.37 ± 0.25 eV to an integrated intensity of a peak having a local maximum value at 102.26 ± 0.25 eV is 0.04 or more and 0.25 or less.

FIG. 1