

ABSTRACT

The surface-treated steel sheet is a surface-treated steel sheet including a base steel sheet, a plating layer formed on a surface of the base steel sheet, and a coating formed on a surface of the plating layer, in which the plating layer has a Zn concentration of 40 mass% or more and 100 mass% or less, and a Mg concentration of 0 mass% or more and less than 4.0 mass%, and a maximum concentration of Ti in mass%, a maximum concentration of Zr in mass%, and a maximum concentration of V in mass% from the interface to a center in the thickness direction from the interface to the surface satisfy a predetermined relationship, and an average concentration of C in mass% in the center portion of the coating, a maximum concentration of Mg in mass% in the boundary region of the coating, an average concentration of Mg in mass% in the center portion of the coating, a maximum concentration of F in mass% in the boundary region of the coating, an average concentration of F in mass% in the center portion of the coating, and an average concentration of Si in mass% in the center portion of the coating satisfy a predetermined relationship.

FIG. 1