CLAIMS

[Claim 1] A non-oriented electrical steel sheet that is a multilayer electrical steel sheet having a stacked structure of an inner layer and a surface layer located on each of both sides of the inner layer,

wherein the surface layer has a chemical composition containing, in mass%, Si: 4.0 % to 7.5 %, C: 0.0010 % to 0.0100 %, Co: 0.0010 % to 0.0100 %, and one or two selected from Sn: 0.010 % to 0.100 % and Sb: 0.010 % to 0.100 %, with a balance consisting of Fe and inevitable impurities,

the inner layer has a chemical composition containing, in mass%, Si: 3.0 % to 6.0 %, C: 0.0010 % to 0.0100 %, Co: 0.0010 % to 0.0100 %, and one or two selected from Sn: 0.010 % to 0.100 % and Sb: 0.010 % to 0.100 %, with a balance consisting of Fe and inevitable impurities,

ΔSi defined as a difference $[Si]_1 - [Si]_0$ between a Si content $[Si]_1$ in the surface layer and a Si content $[Si]_0$ in the inner layer is 0.5 mass% to 3.3 mass%,

a ratio t_1/t of a total thickness t_1, in mm of the surface layers on both sides of the inner layer to a sheet thickness t, in mm of the electrical steel sheet is 0.08 to 0.73, and

a ratio B_{50}/Bs of magnetic flux density B_{50} at a magnetic field strength of 5000 A/m to saturation magnetization Bs is 0.825 or more, and iron loss $W_{10/10k}$, in W/kg, at a frequency of 10 kHz and a maximum magnetic flux density of 1.0 T and the sheet thickness t satisfy the following formula (1):

$$W_{10/10k} \leq 25 + 6900 \times t \quad \ldots (1).$$

[Claim 2] The non-oriented electrical steel sheet according to claim 1, wherein one or both of the chemical composition of the surface layer and the chemical composition of the inner layer further contain, in mass%, at least one of the groups consisting of

a) P: 0.100 % or less,

b) one or two selected from Ge and Ga: 0.0100 % or less in total,

c) one or more selected from Cu, Cr, and Ni: 1.00 % or less in total,

d) one or more selected from Ca, Mg, and REM: 0.0200 % or less in total,

e) Zn: 0.0500 % or less, and

f) one or two selected from Mo and W: 0.0500 % or less in total.

[Claim 3] The non-oriented electrical steel sheet according to claim 1 or 2, wherein a maximum intensity value of {100} plane integration degree is 6.0 or more in a $\Phi_2 = 45°$ section of an orientation distribution function at a plane of a depth of 1/4 of the sheet thickness from a surface of the multilayer electrical steel sheet.

[Claim 4] The non-oriented electrical steel sheet according to claim 1 or 2, wherein the sheet thickness is 0.03 mm to 0.20 mm.