the hot rolling to the skin pass, thereby obtaining a sample steel sheet. Temperature rises in the sample steel sheet with the thermocouple attached thereto, and the time from when the temperature rising starts until the temperature reaches the finish annealing temperature T2 is measured. The temperature rising rate TR2 is found based on the measured time.

[0092] The retention time Δt2 at the finish annealing temperature T2 in the finish annealing step is 2 hours or longer. As long as the retention time Δt2 is 2 hours or longer, the grain growth of the {411}<011> grains occurs due to bulging, and the strength is increased by grain refining strengthening. In this case, the degree of accumulation of the {411}<011> crystal orientation further increases, and the crystal grains in the ND plane at the center position of the sheet thickness are also further less likely to vary. The lower limit of the retention time Δt2 is 2 hours, and preferably 3 hours. As described previously, a preferable upper limit of the retention time Δt2 is 10 hours, and more preferably 5 hours.

[0093] The atmosphere during the finish annealing step is not particularly limited. For example, an atmosphere gas (dry) containing 20% $H_2$ with a balance consisting of $N_2$ is used for the atmosphere during the finish annealing step. The cooling rate of the steel sheet after the finish annealing is not limited in particular. The cooling rate is 5 ~ 20°C/second, for example.