

[ABSTRACT]

A ferritic-austenitic duplex stainless steel material has a composition including, on a mass basis, C: 0.001 to 0.050%, Si: 0.01 to 0.50%, Mn: 1.0 to 4.5%, P: 0.050% or less, S: 0.030% or less, Ni: 1.5 to 3.5%, Cr: 19.6 to 24.0 %, Mo: 0.01 to 1.00%, Cu: 0.01 to 1.20%, and N: 0.010 to 0.090%, C + N being less than 0.130%, the balance being Fe and impurities. The ferritic-austenitic duplex stainless steel material has a metallographic structure having: an Md value as represented by the following equation (1) of 50.0 to 150.0°C; and 25 to 49% by volume of austenite phase. The value of Md of the austenite phase represented by the following equation (1) is 35.0 to 100.0°C.

$$\text{Md} = 551 - 462 (\text{C} + \text{N}) - 9.2\text{Si} - 8.1\text{Mn} - 29 (\text{Ni} + \text{Cu}) - 13.7\text{Cr} - 18.5\text{Mo} \dots (1)$$

in which each of the element symbols represents a content (% by mass) of each element.

[No figure]