

STAINLESS STEEL MATERIAL FOR DIFFUSION BONDING

ABSTRACT

Provided is a stainless steel material suitable for diffusion bonded moldings in which diffusion bondability has been further improved without being affected by the extent of surface roughness. The present invention is a stainless steel material for diffusion bonding in which the metal structure before diffusion bonding has a multi-phase structure obtained from two or more of a ferrite phase, a martensite phase and an austenite phase, wherein: the mean crystal grain diameter in the multi-phase structure is not more than 20 μm ; γ_{max} represented by formula (a) is 10-90; and creep elongation when a 1.0 MPa load is applied at 1000°C for 0.5 h is at least 0.2%.

$$\gamma_{\text{max}} = 420\text{C} - 11.5\text{Si} + 7\text{Mn} + 23\text{Ni} - 11.5\text{Cr} - 12\text{Mo} + 9\text{Cu} - 49\text{Ti} - 47\text{Nb} -$$

52Al+470N+189 ... Formula (a)

The element notations in formula (a) represent the contents (mass%) of the respective elements.

(no suitable figure)