

ABSTRACT

HIGH-Mn STEEL AND METHOD OF PRODUCING SAME

Provided is a high-Mn steel having excellent low-temperature toughness and excellent surface characteristics. A high-Mn steel comprises: a chemical composition containing, in mass%, C: 0.100 to 0.700 %, Si: 0.05 to 1.00 %, Mn: 20.0 to 35.0 %, P: $\leq$ 0.030 %, S: $\leq$ 0.0070 %, Al: 0.010 to 0.070 %, Cr: 0.50 to 5.00 %, N: 0.0050 to 0.0500 %, O: $\leq$ 0.0050 %, Ti: $\leq$ 0.005 %, and Nb: $\leq$ 0.005 %, with a balance consisting of Fe and inevitable impurities; and a microstructure having austenite as a matrix, wherein in the microstructure, a Mn concentration of a Mn-concentrated portion is 38.0 % or less, and an average KAM value is 0.3 or more, yield stress is 400 MPa or more, absorbed energy vE-196 in a Charpy impact test at -196 °C is 100 J or more, and percent brittle fracture is less than 10 %.

(FIG. 1)