

Title (en)

USE OF A HIGH DAMPING CAPACITY, TWO-PHASE FE-MN-AL-C ALLOY.

Title (de)

ANWENDUNG VON EINER ZWEIPHASIGEN EISEN-MANGAN-ALUMINIUM-KOHLENSTOFFLEGIERUNG MIT HOHER DÄMPFUNGSFÄHIGKEIT.

Title (fr)

UTILISATION D'UN ALLIAGE FE-MN-AL-C BIPHASE AVEC GRANDE CAPACITE D'AMORTISSEMENT.

Publication

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Application

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Abstract (en)

[origin: WO9000629A1] Carbon steels and other hot-and cold-workable ferrous alloys generally have poor damping capacity as compared to that cast iron (gray cast iron, malleable cast iron and ductile cast iron). This is because the graphite in cast irons helps to absorb the damping force and depresses the damping wave. But cast iron can not be rolled into strip of sheet. By controlling the correlated concentrations of manganese, aluminum and carbon, Fe-Mn-Al-C based alloys are made to be alpha + gamma two-phase alloy steel with different alpha and gamma volume fractions. With particular ferrite volumes, workable Fe-Mn-Al-C based alloys have equivalent and better damping capacity than that of cast irons especially in the high frequency side. Such alloys suppress the vibration noise that comes from machine rooms, motors, air conditioners, and etc. Chromium and other minor amount of elements can be added to this alloy system to improve the corrosion resistance.

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