Title (en)

METHOD FOR PRODUCING SHEET SEMIFINISHED PRODUCT FROM A TITANIUM ALLOY

Title (de)

VERFAHREN ZUR HERSTELLUNG EINES HALBFERTIGEN BLECHPRODUKTS AUS EINER TITANVERBINDUNG

Title (fr)

PROCÉDÉ DE FABRICATION D'UN BLANC EN FEUILLE À PARTIR D'UN ALLIAGE DE TITANE

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Application

EP 07747854 A 20070314

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Abstract (en)

The invention relates to plastic working of metals, more specifically to rolling sheets, and is concerned with a method of manufacturing a semi-finished sheet product from a titanium alloy having a submicrocrystalline structure suitable for low-temperature superplastic deformation. The invention can be most efficiently used to manufacture semi-finished thin sheets, including foil, from a low-plastic two-phase titanium alloy. The object of the invention is to improve quality of semi-finished sheet products made from a titanium alloy adapted for further low-temperature superplastic deformation. A method of manufacturing a semi-finished sheet product from a titanium alloy adapted for low-temperature superplastic deformation, including rolling a billet with a prepared structure at a temperature below the polymorphous transformation temperature in isothermal or quasi-isothermal conditions provided by heating the rolls, the method characterized in that said rolling is carried out in conditions of low-temperature superplastic deformation, the deformation being performed, predominantly in a first pass, to a strain amount of μ#¥μ min , where μ min is the minimum amount at which a structural state required to provide cooperative grain boundary sliding in the deformation process is formed in the alloy in selected rolling temperature/rate conditions; after each subsequent rolling pass the billet is cooled immediately on exiting the deformation region to maintain the structural state obtained in the deformation; a time period of heating the billet in a furnace for a subsequent rolling pass is restricted to prevent disturbance of the alloy structural state obtained in the previous rolling pass.

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