

Title (en)

METHOD FOR FORMING AND HARDENING STEEL MATERIALS

Title (de)

VERFAHREN ZUM FORMEN UND HÄRTEN VON STAHLWERKSTOFFEN

Title (fr)

PROCÉDÉ DE MOULAGE ET DE DURCISSEMENT DE MATÉRIAUX D'ACIER

Publication

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Application

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Abstract (en)

[origin: CA3032551A1] The invention relates to a method for hydroforming and hardening galvanised tubes made from sheet steel. A prefabricated tube is used, the tube having at least one feed opening (5) and a cavity (4). The tube is heated to a temperature above the austenitising temperature (AC3) of the steel alloy in question and, after a desired degree of austenitisation is achieved, is placed into a hydroforming tool and subjected to a pressurised medium, which is injected through the at least one feed opening (5) into the cavity (4) until the tube fills a predefined form (2) of the tool. The method is characterised in that the forming tool is heated to a temperature of 400-650°C, in particular 450-550°C, and the pressure medium is likewise heated and has a temperature of 400-650°C, wherein, after austenitisation, the tube is passively allowed to cool or is actively cooled to a temperature of 400-600°C but a temperature above the martensite start temperature (Ms) of the selected steel alloy, and the tube is cooled for hardening purposes only after final shaping in the forming tool.

IPC 8 full level

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