Title (en)

METHOD FOR PRODUCING PRESTRESSED STRUCTURES AND STRUCTURAL PARTS BY MEANS OF SMA TENSION ELEMENTS, AND STRUCTURE AND STRUCTURAL PART EQUIPPED THEREWITH

Title (de)

VERFAHREN ZUM ERSTELLEN VON VORGESPANNTEN BAUWERKEN UND BAUTEILEN MITTELS SMA-ZUGELEMENTEN SOWIE DAMIT AUSGERÜSTETES BAUWERK UND BAUTEIL

Title (fr)

PROCÉDÉ POUR LA RÉALISATION D'OUVRAGES DE CONSTRUCTION ET D'ÉLÉMENTS DE CONSTRUCTION PRÉCONTRAINTS AU MOYEN D'ÉLÉMENTS DE TRACTION SMA ET OUVRAGE DE CONSTRUCTION ET ÉLÉMENT DE CONSTRUCTION AINSI ÉQUIPÉ

Publication

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Application

EP 15817138 A 20151214

Priority

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- EP 2015079607 W 20151214

Abstract (en)

[origin: WO2016096737A1] The method is distinguished in that at least one tension element (1), for example in the form of a flat steel composed of a shape memory alloy of polymorphic and polycrystalline structure which can be brought from its state as martensite to its permanent state as austenite by increasing its temperature, is placed on the structure or structural part (2). This tension element (1) can also be guided around one or more corners (5). One or more end anchors (4) penetrate into the structure or structural part (2). Such a flat steel can also wrap one or more times as a band around a structure or structural part (2), in which case the two ends of the flat steel are either connected to one another so as to be fixed in terms of tensile force or are each separately connected to the structure or structural part (2) by one or more end anchors (4) which penetrate into said structure or structural part (2), or else intersect one or more times to produce a clamping connection. The flat steel (1) contracts as a result of a subsequent active and controlled input of heat using heating means and generates a permanent tensile stress and correspondingly a permanent prestress on the structure or the structural part (2). A structure or structural part thus equipped is characterized in that it has at least one tension element (1) composed of a shape memory alloy which extends along the outer side of the structure or structural part and is connected thereto by means of end anchors (4). Alternatively, the structure or structural part (2) can also be completely enclosed by a tension element (1) in the form of a flat steel as a band, wherein the two end regions are connected so as to be fixed in terms of tensile force, and the flat steel is permanently prestressed by the input of heat.

IPC 8 full level

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