Title (en)
   PROCESS FOR AVOIDING CRACKING IN WELDING

Title (de)
   VERFAHREN ZUR VERMEIDUNG VON RISSBILDUNG BEIM SCHWEISSEN

Title (fr)
   PROCEDE PERMETTANT D'EVITER LA FISSURATION PENDANT LE SOUDAGE

Publication
   EP 1446256 A1 20040818 (EN)

Application
   EP 02785177 A 20021008

Priority
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Abstract (en)
   [origin: WO03031108A1] The new welding process avoids cracking in welding, in repair welding or in cladding of parts of metallic alloys which
   are sensitive to hot cracking. The process is using a first heat source (15), directed to the parts (11, 12) of the metallic alloy forming a melt pool
   (14) on 5 the parts (11, 12) of metal or metallic alloy. The heat source (15) and the parts (11, 12) are moved relative to each other. The process is
   characterized in that there is one (13) or more additional heat sources directed to the parts (11, 12) of metal or metallic alloy and following the first
   heat source (15) in a distance and with substantially the same speed and in the same direction as the first heat source (15). The additional heat
   source (13) or heat 10 sources are directed to the solidification region (mushy zone) (144) of the melt pool (14) generated by the first heat source
   (15). The power of the additional heat source (13) is set such as to reduce the local cooling rate of the solidification region (144) of the melt pool
   (14), or to even shortly reheat this region without substantial remelting or with no remelting it at all and thereby reducing the tensile stresses or even
   inducing compressive 15 stresses. During this process a central equiaxed zone might also be enhanced. By this new process the formation of hot
   cracks is avoided.

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Citation (search report)
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