

Title (en)
METHOD FOR MAKING ROLLED AND WELDED TUBES COMPRISING A FINAL DRAWING OR HYDROFORMING STEP AND RESULTING ROLLED TUBE

Title (de)
VERFAHREN ZUR HERSTELLUNG VON GESCHWEISSTEN RÖHREN UND DADURCH HERGESTELLTES ROHR

Title (fr)
PROCEDE DE FABRICATION DE TUBES SOUDES ET TUBE AINSI OBTENU

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Abstract (en)
[origin: FR2829775A1] Fabrication of rolled and welded tube comprises: casting steel, either as an ingot that is roughed down to a slab or directly as a slab; hot rolling slab into strip and coiling; pickling the strip if it is surface oxidized; making welded tube by forming a metal sheet from the strip, bringing its edges together and butt welding; eliminating weld bead; and cold drawing or hydroforming welded tube. The fabrication of a rolled and welded tube, including a final drawing or hydroforming stage, comprises: (a) the production of a steel with a specific composition; (b) casting it as a semi-product, either as an ingot that is then roughed down to a slab or directly as a slab; (c) hot rolling the slab into strip and coiling; (d) pickling the strip if it is surface oxidized; (e) making a welded tube by forming a metal sheet cut from the strip, bringing its edges together and butt welding; (f) eliminating the weld bead; (g) finally cold drawing or hydroforming the welded tube to produce the finished product. The composition of the steel alloy is, by wt.: (a) carbon (C) <= 2%; (b) manganese (Mn) between 10 and 40%, with Mn% less than 21.66-9.7 C%; (c) silicon (Si) <= 5%, preferably <= 1%, optimally <= 0.5%; (d) sulfur (S) <= 0.3%, preferably <= 0.05%, optimally <= 0.01%; (e) phosphorus (P) <= 0.1%, preferably <= 0.05%; (f) aluminum (Al) <= 5%, preferably <= 0.1%, optimally <= 0.03%; (g) nickel (Ni) <= 5%, preferably <= 2%; (h) molybdenum (Mo) <= 5%, preferably <= 1%; (i) cobalt (Co) <= 3%, preferably <= 1%; (j) tungsten (W) <= 2%, preferably <= 0.5%; (k) chromium (Cr) <= 5%, preferably <= 1%; (l) niobium (Nb) <= 1%, preferably <= 0.1%; (m) vanadium (V) <= 1%, preferably <= 0.1%; (n) copper (Cu) <= 5%, preferably <= 1%; (o) nitrogen (N) <= 0.2%, preferably <= 0.1%, optimally <= 0.05%; (p) tin (Sn) <= 0.5%, preferably <= 0.1%; (q) titanium (Ti) <= 1%, preferably <= 0.1%; (r) boron (B) <= 0.1%, preferably 0.01%; (s) each of calcium (Ca) and magnesium (Mg) contents <= 0.1%, preferably <= 0.01%; (t) each of the arsenic (As) and antimony (Sb) contents <= 0.1%, preferably <= 0.05%. An Independent claim is also included for a welded tube fabricated by this method.

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