

Title (en)

Process for the manufacturing of multi layer composite tubes with ferrous and non ferrous metal inlets

Title (de)

Verfahren zur Herstellung mehrschichtiger Verbundrohre mit Metalleinlagen

Title (fr)

Procédure de fabrication de conduites composées à plusieurs couches, avec orifices de entrée en métaux ferreux et non ferreux

Publication

EP 0639411 B2 20021106 (DE)

Application

EP 94104590 A 19940322

Priority

DE 4310272 A 19930330

Abstract (en)

[origin: EP0639411A1] A process is claimed for mfg. a composite tube with two or more layers of different materials, at least one layer being polyethylene (PE) or crosslinked PE and another being metal. Tubes pref. comprise three layers with the metal (2) sandwiched between the plastic layers. The metal layer (2) is thin-walled and cut to suit the dia. of the inner tube (1). The metal layer (2), pref. of aluminium, is wrapped around the continuous inner tube (1) and a gas-tight weld formed between the contacting free ends. The plastic inner tube (1) acts as a bending mandrel for the metal band (2) and moves continuously and synchronously with it. Tube shape and dimensional tolerances are determined by the plastic tube (1) and therefore calibration and reducing devices are unnecessary. Exclusion of oxygen from the construction improves welding and the bond between the inner tube (1) and metal band (2). Free edges on the metal (2) are turned up by a shaping tool to form mating faces which when welded are gas tight. The free edges of the metal layer (2) are trimmed in a machine in front of the tube forming machine to ensure equal band (2) width and oxide free edges for gas welding. Turned-up edges act as stabilisers and guides for the tube during continuous prodn.

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B21C 37/08; **B21C 37/09**

IPC 8 full level

B21C 37/08 (2006.01); **B21C 37/09** (2006.01)

CPC (source: EP)

B21C 37/0822 (2013.01); **B21C 37/09** (2013.01)

Citation (opposition)

Opponent :

- DE 2058379 A1 19720608 - KABEL METALLWERKE GHH
- DE 2045973 A1 19710513 - KABEL METALLWERKE GHH
- DE 565960 C 19321209 - MEYER KELLER & CIE AKT GES MET

Cited by

US7950229B2; DE10318328B3; CN112171208A; CN100415436C; CN106825107A; DE19632021C1; EP0823295A1; DE19515853C1; US5704537A; CN1081494C; DE19515853C2; CN110961811A; US10190475B2; US6293311B1; WO9634708A1; WO2004067269A3

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EP 0639411 A1 19950222; **EP 0639411 B1 19980603**; **EP 0639411 B2 20021106**; AT E166806 T1 19980615; DE 4310272 A1 19941006; DE 59406114 D1 19980709

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