

(54) Title of the invention : A METHOD OF FUNCTIONALLY GRADING MARINE RISERS INTERNALLY WITH A METHOD OF MANUFACTURING THEREOF

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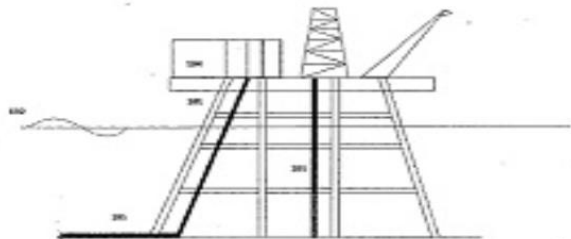
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(57) Abstract :

The titled invention A method of functionally grading marine risers internally with a method of manufacturing thereof discloses a method of manufacturing a marine riser (103) having internal (301) functionally graded material (FGM) layers. Marine riser (103) is functionally graded using a cold metal transfer torch (204) and rotating welding positioner (205) by wire arc additive manufacturing. The weld torch is integrated to a linear feed system, which is numerically controlled. The rotating welding positioner (205) rotation is combined with the weld torch integrated linear feed system for the functionally grading process along the internal surface. Linear feed system modified to functionally grade the pipeline along its inner surface. The proposed method of functionally grading can achieve functional layers both along the internal and external layers to mitigate internal and external corrosion. The proposed method of functionally grading can achieve functional layers along the internal layers.

Figure - 1



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