

Abstract

NON-METALLIC FLEXIBLE PIPE AND MANUFACTURING METHOD THEREOF

5 The present invention provides a non-metallic flexible pipe and a manufacturing method thereof. The non-metallic flexible pipe sequentially comprises, from the inside to the outside, an inner liner, a pressure-bearing layer, an isolation layer, a tensile layer, a functional layer, and a protective layer, with non-rigid bonding being between two adjacent layers. The material of the inner liner is a thermoplastic polymer, the material of the pressure-bearing
10 layer is a fiber-reinforced resin-based composite, the material of the isolation layer is a thermoplastic polymer, the material of the tensile layer is a resin-reinforced fiber, at least one of an optical fiber, a cable, a tracing ribbon, a pipe for conveying a heat transfer medium, a pressure sensor, and a temperature sensor is provided in the functional layer, and the material of the protective layer is a thermoplastic polymer. The non-metallic flexible pipe provided by
15 the present invention not only has good corrosion resistance, gas permeability resistance and flexibility, but also has good temperature and pressure resistance, and can adapt to the harsh working conditions in the ocean for use in marine risers and deep-sea pipelines.

(Fig. 4)

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