

Abstract

The present invention relates to a composite multi-layer pipe and a preparation method thereof. The composite multi-layer pipe has an inner-layer pipe made of a SiC particle reinforced aluminum-based composite material and has a middle-layer pipe made of a foamed aluminum, which significantly improves the overall rigidity of the pipe for long-distance transportation and brings about good performances including shock resistance, impact resistance and energy absorption. An aluminum-lithium alloy is used as light outer-layer support wall. The three layers are matched by an extrusion process to form a pre-stressed interference fit.

Figure 1