

**Abstract****A THERMAL INSULATION MATERIAL AND A FIRE AND HEAT  
PROTECTION SYSTEM COMPRISING THEREOF**

5

A thermal insulation material (1) comprises a composition comprising a clay mineral, a base, a non-halogenated flame retardant, a non-alkaline borate, and a starch, wherein the thermal insulation material (1) is malleable and is capable of self-hardening and forming an internal vapor barrier when exposed to fire or a temperature exceeding 100 °C, thereby preventing the transfer of fire or heat. A fire and heat protection system (100) having the thermal insulation material (1) comprises a malleable wrapping material (110). The malleable wrapping material (110) comprises a core (10) comprising a core layer (11) made of the thermal insulation material (1) sandwiched between a first ceramic fiber layer (12) and a second ceramic fiber layer (13); a fire retardant shrink wrap (20) enwrapping the core (10); and an aluminium foil (30) enwrapping the core (10) enwrapped in the shrink wrap (20). The malleable wrapping material (110) is configured to wrap around an object (120) and capable of forming a hardened core layer having an internal vapor barrier therewithin when exposed to fire or a temperature exceeding 100 °C, thereby protecting the object from the fire or overheating.

20

*(Most illustrative drawing: Figure 1)*