

عنوان مقاله:

Designing and manufacturing of an Intumescent Fire Retardant Coating System for Polymer Composites

محل انتشار:

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خلاصه مقاله:

The purpose of this study is design and manufacturing of intumescent fire retardant coating for polymer composites. In this study the main effort is dedicated to synthesize an optimum composition for the coating system. Furthermore, the coating system is supposed to reduce the amount of heat transfer through the coating to the extent in which the temperature of the rear surface of composites coated by this coating system does not exceed the range of 232 to 272 oC in the period of 30 min. This study consists of two major coating systems: water based and resin based coating systems (epoxy and polyester). Fire tests results show that resin based coating systems are of the higher performance comparing with water based coating systems. This better performance is due to the less crack formation and smoke generation, as well as higher adhesion and structure integrity after the tests. Also the system with polyester resin shows much more efficient performance in comparison with the epoxy resin.

کلمات کلیدی:

Fire, Polymer Composites, Fire Retardant Coating, Finite Element Method

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