

Potential Application of Dry Powder System in Suppressing Supertall Building Fires

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Fire safety in supertall buildings is a deep concern. Quick fire suppression with low emission of toxic gases is desired. A new gas-solid composite dry powder [1,2] with synergistic enhancement is proposed for rapid control of possible fires in supertall buildings. Performance on all three requirements on agent preparation, effectiveness evaluation and suppression mechanism investigation are good. The proposed gas-solid composite gives better effectiveness of dry powder by introducing another gaseous suppressant. It has little effect on the powder product and system being used at the moment, making it an ideal suppressant candidate for active fire suppression systems in supertall buildings. Bench-scale cup burner was used to evaluate the effectiveness of various dry powders under controlled manner at low cost. Data compiled can be scaled up to predict the behavior of the agent in real big fires. Fundamental suppression mechanism achieved provides necessary input data for kinetic modeling. More importantly, the data could be applied in designing fire safety provision and developing advanced fire suppression technology for supertall buildings fires.

References

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