

防火延燒性能設計上利用場模擬溫度評估之研究

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摘要

With the continued breakthroughs of construction technology and the increase of high-rising, compound buildings with large scale space, the existing regulations have been not be able to meet the requirements of modern buildings, and even the worse, the norm of regulations could limit the development of building. Therefore, many countries in the world have developing functional regulations to overcome the obstacles made by existing regulations for the development of modern construction technology. In Taiwan, the authorities have implemented functional regulations to respond since 2004. The part of fire separation of construction technology rules are even better to breakthrough limits and expand the scope of fire separation by the functional regulations. This research aims to break through the limits of regulation in expanding the scope of fire separation to satisfy the demand for greater space from large shopping malls and shopping centers by designing the sense of space that the lofty part of building wants to express and increasing freedom of design. The research firstly analyzed and explored the theoretical structure of function

designs of fire separation. With the lofty space in buildings as the subjects of research, the researcher used the function design formula of fire separation to verify its effectiveness in fire spread prevention. The fire simulator software, Fire Dynamics Simulator (FDS), was also used to verify if the temperatures surrounding fire separation areas were consistent with the results calculated by the function design formula to confirm the reliability of alternative plan of fire separation. It is hoped that the results of the research could be references in evaluating the function design of fire separation in Taiwan and applied to the engineering planning.

關鍵字：fire separation, fire spread prevention, function design, fire simulation, FDS