

Analysis of The Effect about Different Automatic Sprinkler System Extinguishing The Scooter Fire in Underground Parking Space

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Abstract : Analysis of automatic sprinkler system protects the scooter in underground parking space, the current of general buildings is mainly equipped with foam fire-extinguishing equipment in Taiwan, the automatic sprinkling system has economic and environmental benefits, even high stability, China and the United States allow the parking space to set the automatic sprinkler system under certain conditions. The literature about scooter full-scale fire indicates that the average fire growth coefficient is 0.19 KW/sec², it represents the scooter fire is classified as ultra-fast time square fire growth model, automatic sprinkler system can suppress the flame height and prevent extending burning. According to the computer simulation (FDS) literature, no matter computer simulation or full-scale experiments, the active order and trend about sprinkler heads are the same. This study uses the computer simulation program (FDS), the simulation scenario designed includes using a different system (enclosed wet type and open type), and different configurations. The simulation result demonstrates that the open type requires less time to extinguish the fire than the enclosed wet type if the horizontal distance between the sprinkler and the scooter ignition source is short, the sprinkler can act quickly, the heat release rate of fire can be suppressed in advance.

Keywords : automatic sprinkler system, underground parking Spac, FDS, scooter fire extinguishing

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