高科技潔淨室防火設計與現行法規適用性之研究

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摘 要

國內高科技潔淨室防火、消防設計、規劃，是以本國『建築法』及『消防法』之相關法令為主要法源依據，在潔淨室內部的防火、消防及避難逃生等設施，因受到高科技產品特殊生產方式、空調氣流及環境潔淨度影響，使得該類場所在防火與消防設備設置上並無法完全符合國內現行法令規定，例如，潔淨室的防火區劃、防煙區劃、消防設備及避難逃生設施…等，但潔淨室防火、消防設備若要都符合現行法令規定，又將會影響到生產量及破壞環境潔淨度問題，所以在『產量』與『安全性』兩者間，必需取得一個平衡點，才能確保工作人員及財產的安全。

針對上述問題，首先將目前高科技潔淨室防火避難設施、消防設備與國內現行法規適用性作探討，並列舉潔淨室在防火及消防設計上的缺失和問題，以及發生火災時可能造成的嚴重後果；因此，為補強缺失及預防災害，擬訂『潔淨室防火改善計劃書』，希冀藉由實施防火改善計劃，來提昇潔淨室防火功能及環境的安全性，並作為日後潔淨室在初步規劃、設計時，防火、消防方面的設計參考。

The Research of Fire Prevention Design and Local Code Feasibility in Hight Tech Clean Room.

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ABSTRACT

The hi-tech cleanroom fire-prevention design and build in Taiwan is followed by local "Building Code", "Fire Act" and related regulations. However, most of the existing cleanroom interior fire-prevention, fire separation and evacuation facility are not 100% complied with the local building code and fire act due to hi-tech specific product flow, cleanness and air flow requirements, such as the cleanroom fire partition, smoke partition, fire fighting system and evacuation facility. If the cleanroom design is 100% followed local Building Code & Fire Act. It certainly will produce significant impact on production volume and cleanroom cleanness. In order to assure both labor safety and property insurance, the cleanroom design must be looking for the compromise point between production volume and safety.

Based upon the above concerns, this thesis is focused on the feasible study of the hi-tech cleanroom fire-prevention and evacuation facility. Not only to analyze the existing design of cleanroom fire-prevention and evacuation facility, but also to compare their compliance with local Building Code, Fire Act and related regulations. The defects and potential impacts will be pointed out then the corrective actions and preventive measures-‘The Cleanroom Fire Prevention Improvement Proposal” will be recommended. Hopefully the conclusions of the Cleanroom Fire Prevention Improvement Proposal can enhance Hi-tech cleanroom environment safety and fire prevention and can serve as the reference guideline of cleanroom design.