

# **A study on improvement of the quality management for fire doors**

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## **Abstract**

In Korea, the performance standards and scope of fire doors are determined in the Korean Building Code for fire safety of buildings. In order to verify the specified performance, fire doors installed in buildings should be inspected by the manufacturer to the authorized testing institute and performance test should be carried out. At the site, the supervisor should conduct on-site inspection of the results. A construction management have to conduct on-site quality management for fire doors.

However, when the fire door is recently installed in the field, there are frequent cases where the fire door is manufactured with fire door having low quality or different structure compared to the performance that the fire door producer has confirmed in the performance test or the construction specification is less than the manufacturer's specification.

In this performance test, there is a difference in the performance of fire doors during actual construction, and fire doors with improper fire performance are installed. Therefore, there is a great problem in securing fire safety of buildings. On-site quality management and maintenance standards are required to maintain fire performance for a long time after installation.

In this study, we review the quality management procedures, quality management items, and field measurement methods of fire doors by subject, management stage, and present the overall quality management and maintenance standards of fire doors that can be applied to security and maintenance of fire doors.

At the beginning of the study, first, we reviewed the inadequacies of on - site quality management of fire doors through domestic and foreign literature and technical data, and understood the quality management procedure and the current status of the construction site. Based on the data obtained from the previous stage, we verified the actual fire test on the fire door which reflects the non - conformity of quality management of the fire door.

In the above steps, the problem of on-site quality management of fire doors was determined. Details for quality management was deducted as classify and different stages after the target performance for fire door quality management was set up to improve them.

The details of on - site quality management of fire doors are provided with the items of on - site quality inspections by construction and maintenance stages, and on - site measurement methods and quality management tools for a follow-up management after the construction of fire doors.

In order to improve the on-site quality management of the fire door, we comprehensively classify the quality management items of the fire door according to the management subject and the step by stage and set the field quality management procedure, the field quality management inspection item, regulations and standardized checklists were presented.

In the future, we plan to make it possible to manage the history by using the after-sales management system by applying the Q.R code for practical quality management of the fire door. The fire safety performance of fire doors will be secured through institutionalization of on-site quality management standards using follow-up managements.

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**Keywords:** *Fire Door, Fire Safety Performance, On-site Quality Management of the Fire Door, On-site Quality Management and Maintenance Standards*

## **References**

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### **Biography**

Dr. Choi has worked for Fire Insurers Laboratories of Korea since 1993. He is incharge of the research and the test related to fire resistance of building constructions and materials . He also gives lectures on the fire resistance and the performance in his company. He is acting as an advisor in the MOLIT (Ministry of Land, Infrastructure, and Transport of Korea) and has been acting as a member of the Architectural Institute of Korea, Korean Institute of Fire Science and Engineering