PERFORMANCE CHECK IN THE NORMAL TEMPERATURE OF PRESSURIZATION SMOKE CONTROL

Improvement of the smoke protect opening door patency-like theoretical formula which reproduces the flow place in case of a fire at the time of a normal temperature and verification by experiment

Masashi Kishiue

We suggested technique to confirm performance of the pressurization smoke control that was one of the smoke control techniques in the building. By applying this technique, we can confirm the performance under normal temperature easily without producing a fire.

In this paper, at first, we carried out the theoretical examination about the method to reproduce the flow situation at the time of fire under normal temperature artificially. According to this examination, we can reproduce it simply by changing the opening angle of a certain opening door. We also derived a theoretical formula to calculate it. According to this formula, it was found that the room temperature at the time of fire and the installation height of the smoke exhaust outlet were important factors.

Next, for the purpose of verifying the accuracy of the theoretical formula, we conducted two full-scale experiments: fire experiment and experiment at normal temperature. By linking and organizing the two experiments, we confirmed that the theoretical formula and the experimental results match well.