12. Fire Safety Verification of the Apartment to which Second Floor the Seismic Isolation System was Applied

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Fire safety of the apartment was verified to which second floor the seismic isolation system with no fire-resistant cover rubber bearings was installed. Moreover the fire safety of the seismic isolation joint at the external wall was verified. In this case, fire safety design was changed from detailed specification design to performance design, and some check points were cleared. These are as follows.

i With the fire by electric wire, the surface temperature of the rubber bearings rises up to 65 degree which is lower than the fire safety temperature 82 degree confirmed through experiments.
ii Fire resistant time of the seismic isolation joint (92 minutes) which was calculated by the results of the experiments is longer than the fire duration, 22.7 minutes calculated from 3 MW fire.
iii performance design is selected, the fire safety of whole part of building should be verified. So, there are cases in which structural member's size should be bigger than the case of detailed specification design or smoke extraction measures should be add to fire prevention doors or windows.

Key words : rubber bearing, middle floor's seismic isolation, fire safety design