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The correct size of the fire and the observing of the effects of the fire-extinguisher system

Summary

The usage of fire-simulation programmes during the designing of more complex building structures can greatly support the work of fire protection engineers. One of the most important questions concerning such a simulation is to specify the correct base data (starting points and parameters that the programme uses). Heat release rate is probably the most crucial data of these. We ran tests with the programmes Cone Calorimeter and Derivatograph (in cooperation with Szent István University). It has become a central question during in different simulations how the possible effects of the fire-extinguisher systems can be taken into account. These systems have two effects: the cooling of the environment reduces the strain on the frame structure of a given building and at the same time, the cooler temperature of the surroundings can worsen the efficiency of the heat and smoke exhaust system. Usually, heat and smoke exhaust systems take into account the difference within temperatures during their operations.