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VÝVOJ MODELOVÉHO VNÚTORNÉHO POŽIARU PRI HORENÍ SMREKOVÉHO DREVA

DEVELOPMENT OF MODEL COMPARTMENT FIRE AT SPRUCE WOOD BURNING

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ABSTRACT

In the paper there is modelled the course of wood pallets burning by programme Argos. Important parameters of indoor fires are: heat rate release, temperature of upper and lower layer of gases, distance of neutral level from a floor, flashover formation. These and the other characteristics important for a buildings fire safety and determination of fires causes can be predicted by a mathematical modelling. The combustible material was situated in a corner of the simple designed room. A flashover takes place in the case of pallets free burning. The course and duration of fire, the temperature of hot upper layer and the heat rate release were influenced by smoke and heat detectors operating, way and time of extinguishing.

Key words: indoor fire, spruce wood, gases temperature, two zones model, heat rate release.

SUMMARY

From the results obtained at the spruce wood indoor fire modelling we can conclude:

- fire duration was similar at spruce wood free burning, smoke-detectors operating, ventilation and exhaustion,
- early fire brigade extinguishing decreased fire duration to half time,
- fire was extinguished most quickly by sprinklers,
- flashover took place at free burning,
- lowest maximum temperatures was calculated at fire brigade extinguishing,
- time schedule and maximum values of heat rate release was influenced by ventilation and way of fire extinguish,
- lowest heat rate release was obtained at sprinklers operating.

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