

Fire in automobile spare parts warehouse : Gent, Belgium. October 29,1987

This modern spare parts warehouse of the renowned car manufacturer is located at 10 min. from my home. On that morning, it burned completely down in about 4 hours. The offices, the boiler house and the electrical substation, which were separated from the main building by fire walls, were saved. The people in the building were informed by the fire detection and alarm system and could all leave the building in due time. There were no victims. It took the company about two years to rebuild a new (overprotected) warehouse. During that time the company had to distribute its operations over several rented warehouses in the area.

The origin of the fire remains unknown. A defective lighting fixture in the rack storage has been indicated as the most probable cause. This 31.500 m² large warehouse was used as European spare parts distribution centre of a car manufacturer. Spare parts for all current types were stored here, and orders from garages and stockists were handled here and dispatched within 24 hours. In the building there was 6.7 m high rack storage and order picking areas. Some 160 persons worked in the building.

The building had a steel structure with light concrete external walls. Roof height was 7.5 m. Fire protection consisted of an automatic fire detection system, smoke vents at a ratio of 2 % of the floor area, extinguishers and hand hoses. The plant had a first intervention team, the local fire brigade is a full professional fire brigade at 10 min distance from the plant. The plant had no independent water supply, but is located at +/- 300 m from the sea canal Gent-Terneuzen.



Using FRAME

This application was documented in DT73 évaluation des risques, (1988) of ANPI Belgium. The risk calculation per FRAME (version 1) gave an initial risk $R_0 = 10.24$, which means that compartmentation will be needed to reduce the property risk to an acceptable level.

The calculated values for this situation was : $R = 5.95$, $R_1 = 0.47$, $R_2 = 1.79$

These results mean that a total loss could be expected, without victims (R_1 is OK) but also with serious business interruption consequences.

AND THAT IS WHAT HAPPENED !

Major factors that contributed to this situation:

- very large compartment $g = 5.13$
- high fire load $q = 2.03$
- water supply not immediately available $W = 0.66$

This fire case was used to check the validity of FRAME version 1.

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