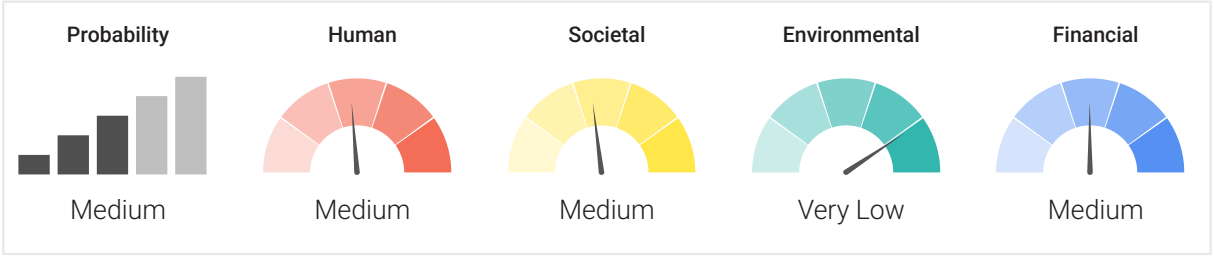
Fire or explosion in an urban or residential area

Summary



Description

Fire is a chemical reaction that is the combustion of any substance (combustion), fueled by oxygen and involving a transfer of energy (heat). An explosion can therefore be considered as an accelerated combustion reaction, whether its origin is the result of a combustion reaction or a physical cause. The released energy can produce harmful shock waves and the energy transfer can burn people and objects within the radius of the explosion. This specific risk file considers that the fire or explosion occurs in an urban or residential area where people and property are densely located.

The most relevant risk scenario concerns the triggering of a fire or explosion whose intensity is deemed to be very serious and able to causing fatal or lethal cases: propagation speed of more than 300 bar.m.s-1; radiative heat flux of 12.5 kW/m² and overpressure of 160 mbar. Buildings located up to 500 m away would be severely affected, and non-structural damage would affect the population in an extended area up to 5,000 m away. The effects of a fire or explosion would be aggravated by favourable weather conditions such as the absence of rain and the presence of strong winds.

Analysis

Such a risk scenario is considered extreme and has a medium occurrence probability. It can mainly be caused by wildfires, road accidents, lightning strikes, malicious attacks or extreme natural and meteorological phenomena (heat waves, tornadoes, floods....). Secondary explosions could also be triggered, causing further material damage and destruction. The effects of such a disaster would be significant, mainly in human, social and financial terms.

In human terms, it is very likely that a fire or explosion of this scale in an urban area would result in a large number of people being injured or killed, and many needing help (for example, emergency accommodation would have to be provided for people whose homes had been damaged/destroyed).

As for the immediate societal repercussions, these would include the disruption of local supplies of vital goods and services to the population. The minimum level of safety and comfort would no longer be guaranteed because homes would be damaged/destroyed.

In addition, such an incident could damage Belgium's reputation and/or erode public confidence in the public authorities if their emergency responses were not perceived as inadequate or if the cause of the disaster was considered to be highly avoidable.

In financial terms, such a disaster would result in very costly damage, particularly for rescue operations and the provision of emergency accommodation, as well as the costs of repairing and rebuilding buildings

and infrastructures. In addition, there could also be indirect effects such as the failure of the regional economic performance and lasting disruption to local economic activity.