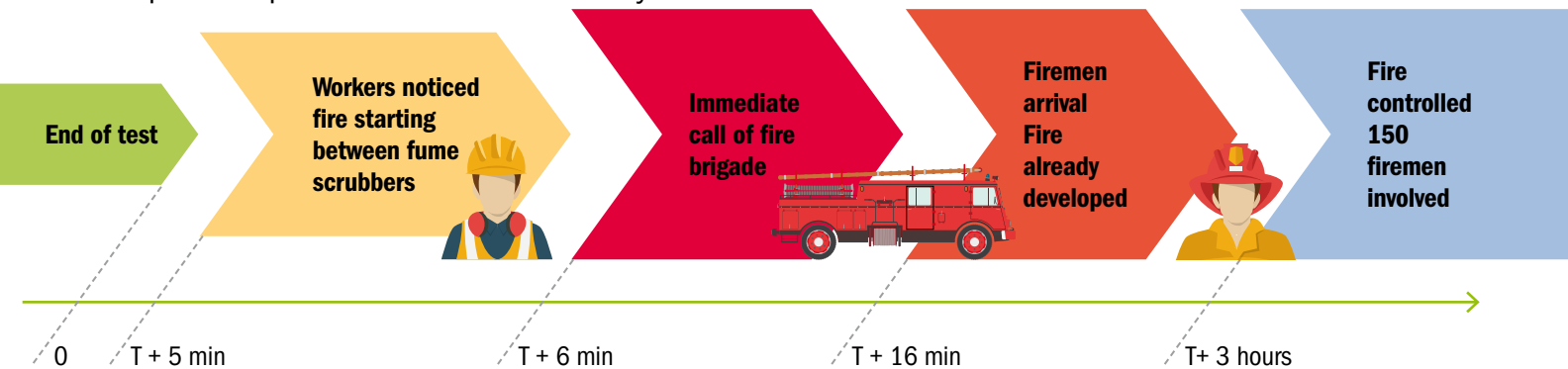




Brand new factory destroyed

Fire hazard underestimated at design stage

Rapid fire spread in a steelwork factory due to extensive use of combustible material.



Process



Gases released from the electrolysis process are drawn up into extraction hoods over of the electrolysis tanks. These fumes are taken via a single duct to the fume scrubber, which consists of two scrubbing towers, before being exhausted to atmosphere. **In order to avoid corrosion all equipment is made of polyethylene, an extremely combustible plastic.**

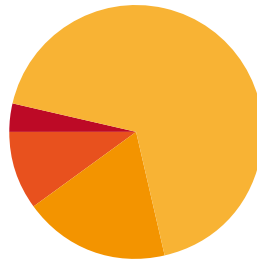
Facts

Fire originated in an electrical cabinet mounted on one of the polyethylene constructed scrubber tower. By the time the fire brigade reached the site, the fire spread along the pipe bridge to the main electrolysis building, with flames of 20 m high coming from the fume scrubber. When the fire brigade connects up to the hydrants, they notice that water pressure was very low and had to take water from the canal about 450 m away.



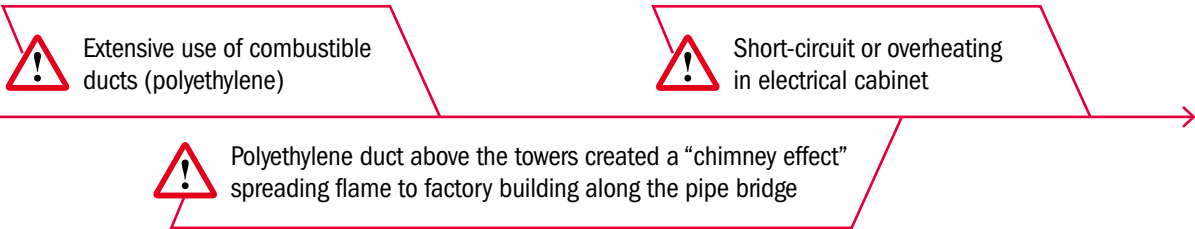
50% of site destroyed and production started with 15 months delay

Loss amount : 93 910 000 €
Damaged area : 10,000m²

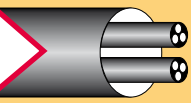

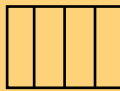



- Equipment: 63,725 K Euros
- Demolition and debris removal: 17,530 K Euros
- Miscellaneous: 9,300 K Euros
- Buildings: 3,355 K Euros


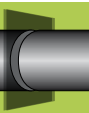

Process



Aggravating factors

- The electrical cable supplying the fire pumps (hydrants) also run on the same pipe bridge that has been destroyed by fire 
- Lack of automatic fire protection 
- Lack of partitioning 
- Lack of proper loss prevention measures during commissioning tests period 

Suggested recommendations

-  Integrate loss prevention and fire protection methodology from the first design stage when a new factory or site extension is to be built
-  Use noncombustible ducts, equipped with fire dampers
-  Provide automatic fire protection systems