STORED PLASTICS FIRE AT WEEE RECYCLING PLANT

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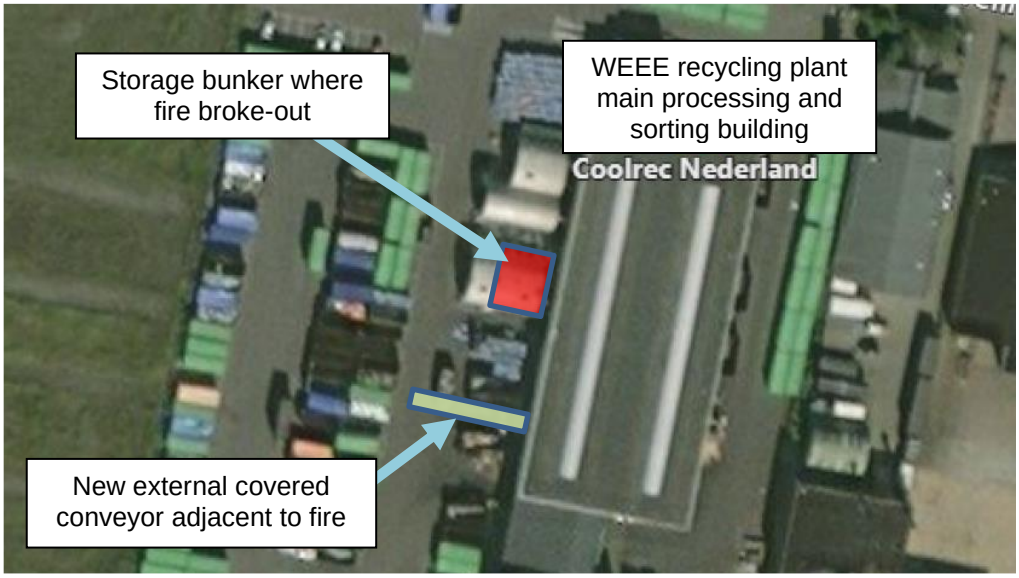
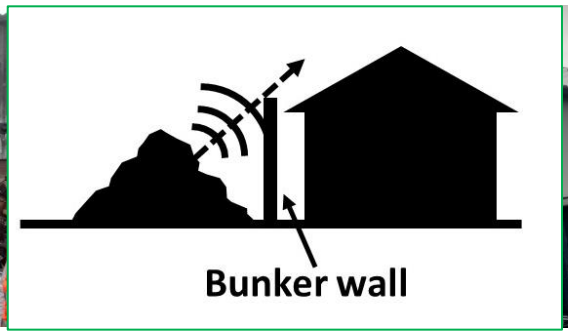
Separation distances – are yours wide enough?

At 17.30 pm on Wednesday 16 August 2017 a fire broke-out at Renewi's Coolrec WEEE (waste electrical and electronic equipment) recycling plant in Dordrecht, the Netherlands. The plant accepts various WEEE goods from large appliances such as fridges to small domestic appliances (SDA) and ICT equipment. SDA wastes are stored in external concrete walled bunkers prior to processing. The fire broke-out in one of these bunkers. The cause of the fire being a ruptured lithium battery. The fire was contained, and with the assistance of the local fire and rescue services (FRS) was under control by 19.30 pm, although damping-down continued for some hours afterwards. The plan below shows general layout of the area.



One of the problems encountered by the FRS was the intensity of the fire. The heat produced being such that they could not approach the fire closely. The heat produced also made the use of mobile plant to remove wastes from the fire unviable.

- The concrete bunker walls withstood the fire and prevented fire spread to adjacent bunkers (please note that on the day of the fire the area directly in front of the bunker was clear of materials or other items)
- However, and while wastes were stored below bunker wall height, thermal radiation from the fire caused damage to the processing building upper external wall (see photograph below). The cladding of the building contained non-combustible insulation (rock-wool), resulting in damage being largely cosmetic. Subsequent to the fire the bunker wall height is to be extended in line with WISH guidance (see diagram below and page 79 WISH WASTE 28 reducing fire risk at waste management sites issue 2)
- A new external covered transfer conveyor had recently been installed at the site (see plan above for location of this conveyor). The covers of this conveyor being plastic. The conveyor is located 18 metres away from the front face of the bunker where the fire occurred. The heat radiated by the fire was sufficient to partially melt the conveyor cover (see photograph below)
- The main combustible occupancy of the SDA wastes stored in the bunker was hard plastics (casings of the SDA items). Waste was stored loose stacked, with an angle of repose of approximately 45 degrees. Bunker width is 8 metres. Using the separation distance graph on page 85 of the WISH reducing fire risk at waste management sites guidance gives a recommended separation distance of some 17 metres. The damaged plastic conveyor cover being just outside of this distance away from the fire



Left: Aftermath of the fire showing damage to upper processing building wall (note – wastes have been spread forward to aid damping-down). Centre: diagram showing bunker wall height and radiative heat from a loose stack to a building. Right: Partially melted covers on newly installed transfer conveyor