

Dumper overturn: Dumpers and backfilled trenches

Version 1.0

Context

FAME H&S Notices are real-world examples of incidents, provided anonymously by FAME members, that highlight learning opportunities for the sector to improve our health and safety working. However, they are not designed to replace existing guidance.

Summary

Soft ground caused by poorly backfilled trenches and the dumper driver mis-judging his approach along the edge of a spoil heap caused a partial roll. A reminder that soft ground such as that caused by earlier site investigations should either be marked as unsafe and excluded from traffic routes or made safe by adding additional material and tracking.

The Incident

A 20-tonne 6 wheeled articulated dumper partially rolled during a site strip. This was caused by the wheels on one side mounting the spoil heap while the other wheels sank into a poorly backfilled evaluation trench, which angled the rear of the dumper (the 'bed') sufficiently to roll it onto its side. The cab of the machine stayed upright, and no one was hurt.

The investigation noted that the overturn was in part due to soft ground caused by poorly backfilled trenches and the dumper driver mis-judging his approach along the edge of the spoil heap.



Solutions

During site strip archaeologists are reminded to make sure that all plant routes are defined by a traffic management plan, separated from pedestrians (if it is necessary for traffic and pedestrians to share the same route, provide a segregated walkway alongside the vehicle route), clear of obstructions and wide enough to enable plant to navigate them safely without the risk of mounting spoil heaps or entering soft ground as far as reasonably practicable. Routes should also be wide enough to ensure that pedestrians (including all plant operatives) are always outside the plant's exclusion zones (see Red Zone diagrams such as those produced by Balfour Beatty: <https://www.balfourbeatty.com/media/317040/hsf-rm-0047a-people-vehicle-plant-interface-zones.pdf>)

Furthermore, ground conditions should be checked when setting out routes for plant access. Soft ground such as that caused by earlier site investigations should either be marked as unsafe and excluded from traffic routes or made safe by adding additional material and tracking it in to enable a flat firm surface is in place. The manufacturer's guidance on the capability of the vehicle to negotiate slopes should be considered and routes designed to avoid slopes beyond the capability of the dumper.

Resources

Further information on the use of dumpers on-site can be found on the HSE Construction site transport safety:

Safe use of site dumpers information sheet
<https://www.hse.gov.uk/pubns/cis52.pdf>