



Construction Plant-hire Association
Tower Crane Interest Group



Tower Crane Technical Information Note

TIN 047

Tower Crane Related Fire Hazards

1. Scope

This Technical Information Note deals with the tower crane related fire hazards that should be taken into account when carrying out a fire risk assessment for a construction project.

2. Responsibility for Fire Risk Assessment

The primary responsibility for carrying out the fire risk assessment for a construction project rests with the Principal Contractor. The assessment should cover all plant on the site, including tower cranes. The findings of the risk assessment should be shared with the tower crane supplier and subcontractors.

***NOTE:** The employer of the operator has a duty under Section 2 of the Health and Safety at Work Act to consider the safety of his employees in conjunction with the Principal Contractor.*

3. Tower Crane Related Hazards

When carrying out a fire risk assessment on a construction project which has, or will have, tower cranes on site the following tower crane related hazards should be taken into account:

- a. Isolated areas - tower crane operators and maintenance personnel may be trapped in the crane cab or on the crane structure in the event of a fire;
- b. Lack of communication with tower crane operators and maintenance personnel to make them aware of a fire;
- c. Tower crane towers in lift shafts without isolation from floors and/or horizontal compartmentation;
- d. Faulty tower crane electrical installations;
- e. Faulty electrical appliances in the tower crane cab;

***NOTE:** Appliances should be checked before use, inspected monthly and PAT tested before first use and then at 3 monthly intervals. Care should be taken to ensure that the power supply is not overloaded.*

- f. Ineffective lightning protection;
- g. Proximity of generators with hot exhausts at the base of the crane;
- h. Spillage of fuel during refuelling of generators and additional tanks;
- i. Accumulations of rubbish around the crane base, in the tower crane cab and on walkways;
- j. Hot work involved in installation and repairs on crane structures, including steel grillages and ties;
- k. Anti-climb protection made from flammable materials, such as wooden base enclosures;
- l. Use of firefighting equipment in confined spaces such as a tower crane cab.

***NOTE:** Clause 10.6 of BS 7121-5:2006 states "Fire extinguishers should not be provided or used in the cabs of tower cranes as the confined nature of such cabs exposes the user to the risk of suffocation."*

4. Guidance

Guidance on the preparation of a fire risk assessment on a construction site is given in HSG168 (Second edition, 2010), *Fire safety in construction*, HSE Books (free download from <http://www.hse.gov.uk/pubns/books/hsg168.htm>)

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