

Guidelines for Fire Safety on EXPAN Construction Sites

BACKGROUND

Fires can occur frequently on building construction sites, due to the nature of the works which are undertaken at this time. The most common cause of such fires is malicious arson from outside the construction site, when fires are deliberately lit for a wide variety of reasons. The other major causes of construction site fires are accidental ignition as a result of hot work, heating equipment or accidents.

If a fire starts, large amounts of combustible material can allow the fire to grow rapidly. Rubbish piles are commonplace on many construction sites, and these can provide the fuel for rapid fire growth. Timber building materials can also act as a fuel source, especially if many small pieces of timber are available to fuel a growing fire. For this reason, more care is needed on timber building sites than on other sites where no combustible material is available.

Massive timber, such as the pre-fabricated LVL elements used in most EXPAN buildings, is difficult to ignite, hence it is a much lower fire hazard than light timber frames used in typical houses, where there is a much larger surface area of unprotected timber exposed to the fire. Nevertheless, all wood can burn, so appropriate safety measures should be taken.

In the finished building, timber structural materials provide no greater fire hazard than steel or concrete, but this is not always true during construction, before installation of fire protection measures such as fire protective Gib board, fire sprinklers, and other active or passive fire systems. Environmental conditions and the arrangement and species of timber can also play a significant role in the severity of any unwanted fire.

With much taller and larger timber buildings now being built around the world, the potential fire risk is larger than in the past. The risk to life safety, property damage and the threat to neighbouring properties increases with the size of any fire, so a sensible fire protection strategy is recommended for all building sites.

FIRE SAFETY MANAGEMENT

A number of key management concepts are necessary to reduce the likelihood of fire ignition, and failing this, to control the growth and spread of any unwanted fire

until extinguishment by workers on site, or the Fire Service.

The overall strategy is to:

1. Prevent access to the building site after hours.
2. Undertake a rigorous fire risk assessment, as part of an overall fire safety plan.
3. Plan for emergencies.
4. Prevent ignition and mitigate fire risk as much as possible.
5. Identify and manage potential fuel.
6. Implement early installation of fire safe construction.

Prevent Access to the Construction Site After Hours

- Maintain perimeter fencing when the site is closed.
- Control all points of entry on to the site.
- Provide after-hours security and surveillance.

Fire Safety Plan

- Identify the site fire safety officer (and deputy) responsible for on-site fire safety.
- Write the site fire safety plan. This to be done by the site fire safety officer in cooperation with the local Fire Service and the design fire engineer for the building.
- Establish reporting lines from the site fire safety officer to the site foreman.

Plan for Emergencies

- Document emergency procedures, escape routes and safe assembly points.
- Ensure regular communication with the local Fire Service.
- Maintain emergency access routes with signs.
- Carry out fire evacuation trials.
- Document training and assigned responsibilities of site operatives.

Prevent Ignition

- Implement safe working procedures and training to minimise the risk of fire ignition.
- Identify and eliminate site specific ignition sources.
- Establish safe working rules for hot-work. Inspect hot-work areas 4 hours after finishing.

- No smoking on site.
- Monitor use of electrical tools, and maintain safe site electrical systems.

Identify and Manage Potential Fuel Sources

- Identify site specific sources of combustible materials.
- Remove rubbish and other hazardous combustible materials from the site.
- Maintain good housekeeping.
- Ensure correct storage of flammable materials, solids and liquids.
- Manage gas installations.

Early Installation of Fire Safety Measures

- Make site hoses available for fire fighting, well distributed around the site.

- Install fire extinguishers immediately when each part of the building is accessible.
- Ensure early installation of windows and doors to prevent illegal access, also to limit ventilation.
- Provide temporary fire walls to divide big buildings into a number of smaller more manageable sections, with fire doors between them.
- Install fire detection and alarm systems as construction proceeds.
- Arrange early placement of plasterboard wall linings and ceilings to protect exposed timber.
- Install fire sprinklers as soon as possible.

MAINTENANCE OF FIRE PROTECTION

It is suggested that the contractor should:

- Keep a copy of this document on display in the site office, and
- Maintain monthly monitoring of all items listed above.

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