

TIN 011 Attachment of Floodlights, Illuminated Signs and Christmas Decorations

There is often a requirement for the fixing of floodlights and illuminated signs to the structure of tower cranes. The crane manufacturer's approval should be obtained before any such additions are made, as any additions to a crane structure will increase the structures wind area and hence the wind force on it. Any additional wind area may also prevent an out-of-service crane from free slewing downwind.

The attachments of any lights or signs must be designed to take both wind loads and dynamic forces, and should be locked to avoid inadvertent detachment. Requirements for the design of attachments are given in TIN 043 *Design and Design Checking of Attachment Brackets for Tower Crane Accessories*.

Any cables providing power to lights and signs must be routed and secured to both avoid damage to the cables and avoid presenting trip hazards. When mounting illuminated signs, thought should be given to the maintenance of the signs (lamp replacement etc.). Various examples of unsafe and good practice for the mounting of floodlights and illuminated signs are shown in Figures 1 to 7.



Figure 1 – Unsafe Fixing



Figure 2 - Unsafe Fixing



Figure 3 – Unsafe Fixing



Figure 4 - Safe Fixing



Figure 6. – Illuminated Sign



Figure 7. – Illuminated Sign

Occasionally organisations hiring tower cranes ask for large and complex illuminated Christmas decorations to be fitted to tower crane structures. This should be approached with extreme caution and only undertaken with the full authorisation of the crane manufacturer. When designing such decorations, attachment to the crane and the effect of the addition on the crane are of prime importance and a full risk analysis should be undertaken as part of the design process. This should consider such matters as:

- Effect of the decorations on the wind area of the crane;
- Glare from the lights affecting the crane operator's vision;
- Safe and adequate electrical isolation;
- Suitable power supply;
- Installation of the decorations;
- Maintenance of the decorations;
- Removal of the decorations.

Such Christmas decorations generally contain a large number of lights and, if conventional filament lamps are used, have a high maintenance requirement with difficult access. Consideration should be given at the design stage to the use of more durable lamps such as the high output LED type.

A procedure adopted by one major tower crane owner is as follows:

- The question “will you be requiring Christmas lights on your tower crane” is asked for every tower crane hire enquiry where the crane will be on hire for the December period, even if the crane is being erected 10 months prior to Christmas;
- If Christmas lights are required, they must be ordered and installed while the crane is on the ground during or prior to erection;
- If Christmas lights are requested once the crane is erected, they will not be fitted as it is putting operatives at an unnecessary risk.

Christmas lights will be removed when the crane is dismantled.