



Construction Plant-hire Association

Tower Crane Interest Group



Tower Crane Technical Information Note

TIN 041

Travelling Tower Cranes on Rail Tracks

This Technical Information Note deals with the supply, installation and use of tower cranes mounted on rail tracks to enable them to travel, thereby increasing their coverage on site.

1.0 Preparation

1.1 Crane

Before a travelling tower crane is sent to site it is essential that the bogies and associated parts are inspected and overhauled to ensure that they will last for the duration of the crane's time on site. Repairs to these components in situ are likely to be time consuming and costly, and may require the crane to be dismantled.

1.2 Rail Track

The rail track should be treated in the same way as other tower crane bases and should be subject to the same temporary works planning, design, installation and inspection procedures (see **TIN 031**). The design and installation of the rail track should be in accordance with the crane manufacturer's instructions, and should incorporate correctly positioned travel limit ramps and end stops. If the rail track contains curves it is important that the inner and outer rails are formed to the correct radii and that "curve going" bogies are used, with the drive bogies located on the same rail.

The rail track must be adequately earthed (see **TIN 036**) and should be segregated from pedestrians and vehicles by the use of appropriate barriers.

2.0 Use

2.1 Planning

The user (Hirer) should ensure that the particular requirements for travelling tower cranes are considered in the planning of lifting operations. In particular:-

- The need for the use of rail clamps to secure the crane when out-of-service and their removal before putting the crane back in-service;
- Establishing a procedure for ensuring that the crane is secured well before the maximum in-service wind speed is reached;
- Ensuring that when rail clamps are being fitted that there is adequate communication between the crane operator and those applying the clamps;
- Establishing a lower limiting windspeed for travelling, in consultation with the crane supplier;
- Establishing from the crane manufacturer's instruction the conditions applying to travelling. Some manufacturers permit the use of other motions when travelling with a load, whilst others prohibit lifting, lowering, trolleying and slewing whilst travelling. Some manufacturers also require the jib to be in line with the track.
- Establishing a procedure for travelling to ensure that a slinger/signaller always walks with the travelling crane base to ensure that the track is free of obstructions and act as the crane operator's "eyes and ears".

2.2 Operation

The tower crane operator must have been fully familiarised on the make and model of crane and should ideally have previous experience of operating rail travelling tower cranes. The procedures established in **2.1** must be communicated effectively to the tower crane operator(s). It is essential that the operating procedures set out in the manufacturer's manual are followed.

TIN No.	041	Issue Date	31.07.14	Revision Date	31.07.19	Issue	A	Page 1 of 2
---------	-----	------------	----------	---------------	----------	-------	---	-------------



Construction Plant-hire Association

Tower Crane Interest Group



Tower Crane Technical Information Note

TIN 041

Travelling Tower Cranes on Rail Tracks

2.3 Inspection, Maintenance and Thorough Examination

Guidance on the inspection, maintenance and through examination of tower crane rail tracks is given in BS 7121-2-5:2012 *Code of practice for the safe use of cranes Part 2-5: Inspection, maintenance and thorough examination – Tower cranes.*

Particular attention should be paid to the following items:-

- The travel brakes on the chassis bogies;
- The end stops on the rails;
- Wear on wheel flanges to avoid derailment;
- The increased wear on bogie components from low height tower cranes erected in pre-cast yards or stockyards on civil engineering sites.