Working Safely at Height with Liebherr Mobile and Crawler Cranes
Collective and personal fall protection for working with Liebherr cranes

Liebherr is very aware of its responsibility when it comes to providing the greatest possible safety at work for crane operating personnel. As well as this, the provisions of the European Union Machinery Directive must also be respected, together with the standards and guidelines of safety institutions and national safety authorities.

To ensure this, we have developed an extremely effective concept which, as well as collective safety measures, also integrates personal fall protection. A particular advantage here is the rapid, flexible, and easy way in which these devices can be put to use.

Collective fall prevention devices are, for example, railings and handles. Their purpose is to prevent accidents from happening in the first place. Personal fall protection comes into effect if the use of collective systems is not feasible from the technical point of view, or if it becomes a hindrance to working activity. It consists of a catching system with a safety harness. It may not be possible to avoid accidents and falls entirely, but the consequences can be made a great deal less serious.
4 Working Safely at Height

- Special holder at the crane for safe positioning of the ladder
- Non-slip covering on the boom
- Height-adjustable suspension clip at the provided ladder
- Safe access to the cab
- Securing by railings

Special holder at the crane for safe positioning of the ladder
Collective fall prevention arrangements

These devices are the best means of providing safety, because they avoid the risk of falling from the crane in the first place. They are easy to use, and they can be used by a number of people at the same time.

- A considerable number of easily erected railings
- A large number of handles
- Retaining points for the secure positioning of ladders
- Non-slip coverings
Personal fall protection system from Liebherr

Personal protection equipment (PPE) is a necessary requirement for work where the provision of collective protective measures is not feasible from the technical point of view. It may not always be possible to avoid injuries, but the protection system means they will be much less serious than might have been the case.

Every new crane is equipped with a fall protection system. Small units are supplied with a single-line system. All telescopic cranes for which a luffing fly jib can be provided and all lattice boom cranes, are fitted with a two-line system, and have steel cables running along the boom into which the fall protection system can be suspended.

The protection equipment has been subjected to extensive and stringent tests, and has already been certified by the safety authorities of numerous countries.

In the event of a fall, within just a few seconds the device blocks the safety belt immediately. This ensures that even if someone falls from a low height they will still not land on the ground, but will be caught and held in the air.

Thanks to the special design of the harness, it is also guaranteed that a person will be held with their legs downwards. Even if they fall head first, they will be turned in the air during the fall, and so held by the safety harness in the natural position.
The Rescue System

Every Liebherr crane that is equipped with a double fall system is also equipped with a rescue system in order to be able to rescue fallen persons in the shortest possible time. This consists of a karabiner hook, a hand-operated winch, and a telescopic rod for positioning the rescue cable. The winch is used to draw the person who has fallen sufficiently far upwards that the load can be taken off the safety harness and the harness detached. The person concerned will then be lowered using the winch.

Positioning the karabiner with the aid of a telescopic rod

The hand-operated winch makes it easy to rescue someone who has fallen
In the opinion of the Government Presidium of Tübingen, the personal protection equipment selected and tested by Liebherr can be used as a constituent part of the fall protection system for telescopic and lattice mast cranes.

The technical fall protection system for telescopic and lattice mast cranes has been optimized, taking account of the specific location circumstances.

It consists of the personal fall protection equipment (safety harness and height securing device) and the attachment points intended for these. The attachment points are fixed points and also movable attachments points for the securing cables running on both sides of the walkway on the telescopic and lattice mast booms intended for assembly purposes.

The selection and handling of the personal protection equipment, in conjunction with the fixed attachment points, is regarded as a particularly positive arrangement. Liebherr, as manufacturers of telescopic and lattice mast cranes, are acting here as the interface to protection at work, in a highly responsible and conscientious manner.
The manufacturing company IKAR confirms that the fall protection system, consisting of a fall protection harness and a height securing device, is properly suited for use as a protection system against falls during assembly and inspection work when used in accordance with regulations and specifications and with due account taken of the risk assessment of “Personal protection equipment on Liebherr mobile cranes for fall protection”.

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**Apave Certificate of conformity**

**Certificate of conformity**

AT4473612

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**Letter of confirmation of the manufacturer**

IKAR-GmbH Fulda

Der Hersteller oder sein in der Gemeinschaft niedergelassener Bevollmächtigter:

IKAR GmbH

Industriepark West

D-36041 Fulda

bestätigt hiermit, dass das nachstehend beschriebene Auffangsystem beseitigt aus:


Date: 27.03.2010

Fulda

IKAR GmbH
Certificate of All Test & Inspection, Inc.

Certificate of Intended Performance

All Test & Inspection, Inc. Report Number SG11-10920

Presented to: Liebherr-Werk Ehingen GmbH
Dr. Hans Liebherr-Strasse 1
89584 Ehingen, Germany

Equipment Description: Fall Arrest/Lifetime Tie-Off System Concept for Deep Section Liebherr Crane Boom Sections

Identification: Anchor Device - Class C

This Certificate of Intended Performance is based on review of United States OSHA 1926.502 and 1926.1423 codes as they relate to the Fall Arrest Tie-Off System Concept for Deep Section Liebherr Crane Boom Sections. The described equipment had been issued Certificate of Conformity 6A14175612 by Guillermo Guinini, Technical Manager, APAIEC. It is our opinion that the Liebherr fall restraint system permanently applied to boom sections provides a reasonable fall restraint and therefore meets the intent of these OSHA regulations when used as intended by the manufacturer.

Please refer to opinion letter dated March 10, 2011 by Bernard M. Rung, C.E., All Test & Inspection, Inc.

[Signature]

Bernard Rung, C.E.

Date

All Test & Inspection, Inc. * 9999 Goodhue Street NE *
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The illustrations contain also attachments and special equipment, which are not included in the standard scope of delivery.

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