

# Working Safely at Height with Liebherr Mobile and Crawler Cranes



# LIEBHERR





## **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.



Securing by railings



Non-slip covering on the boom



Safe access to the cab



Height-adjustable suspension clip at the provided ladder



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.





Positioning the karabiner with the aid of a telescopic rod

The hand-operated winch makes it easy to rescue someone who has fallen

## 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.

# Letter of confirmation of the surveillance authority



Baden-Württemberg  
REGIERUNGSPRÄSIDIUM TÜBINGEN

Regierungspräsidium Tübingen - Postfach 26 66 - 72016 Tübingen

Liebherr-Werk Ehingen GmbH  
Herrn Dr. Ulrich Hamme  
Dr.-Hans-Liebherr-Straße 1  
89584 Ehingen

Tätigkeit: 19.10.2010  
Name: Herr Hamme  
Durchwahl: 07071 757-5285  
Alarmkürzel: 57-3/5551.00/Liebherr Eh  
(Bitte bei Antwort angeben)

## Absturzicherung beim Arbeiten auf Mobilkränen mit persönlicher Schutzausrüstung Ihr Schreiben vom 22.09.2010, Az.: hae-rez

Sehr geehrter Herr Dr. Hamme, sehr geehrter Herr Knoll,  
sehr geehrte Damen und Herren,

aus Sicht des Regierungspräsidiums stehen keine Belange entgegen, die von der Firma Liebherr ausgewählte und geprüfte persönliche Schutzausrüstung (PSA) als Bestandteil des Absturzicherungssystems für Teleskop- und Gittermastkrane in Verkehr zu bringen.

In der Hierarchie der Schutzmaßnahmen wurde aus Sicht des Regierungspräsidiums die technische Absturzicherung an Teleskop- und Gittermastkränen unter Berücksichtigung der gegebenen Randbedingungen optimiert.

Die technische Absturzicherung besteht zum einen aus der persönlichen Schutzausrüstung, PSA (im Wesentlichen Auffanggurt und Höhensicherungsgerät), und kransenfest aus den dafür vorgesehenen Anschlagpunkten. Bei diesen handelt es sich um feste Anschlagpunkte und um beidseitig an der Lauffläche der für Montagezwecke begehbaren Teleskop- und Gittermastausleger verlaufende Sicherungseile als verschiebbare Anschlagpunkte.

Dienststelle: Konrad-Adenauer-Str. 40-44 72072 Tübingen · Telefon 07071 757-0 · Telefax 07071 757-3190  
poststelle@rpt.tbw.de · www.rj.baden-wuerttemberg.de · www.sprv.tbw.de  
Bürozeit: 7 · Halbesitz „Landpostdirektion“ oder „Mittelpostdirektion“

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Die persönliche Schutzausrüstung in Verbindung mit den Anschlagpunkten dient den Arbeiten, bei denen Absturzgefahren mit technischen Maßnahmen nach dem Stand der Mobilkrantechnik nicht begegnet werden kann.

Die Auswahl und die Handhabung der persönlichen Schutzausrüstung in Verbindung mit den festen Anschlagpunkten wird hier besonders positiv gesehen. Die Firma Liebherr schließt damit als Hersteller von Teleskop- und Gittermastkränen die Schnittstelle zum Arbeitsschutz verantwortungsbewusst.

An den Praxiserfahrungen ihrer Kunden, insbesondere auch zur Akzeptanz und Handhabung der verschiebbaren Anschlagpunkte (Anschlagseile) im Bereich der Ausleger sind wir sehr interessiert. Wir würden es begrüßen, von Ihnen dazu in zwei bis drei Jahren eine entsprechende Nachricht zu erhalten.

Freundliche Grüße

Adm.  
Gew.  
Regi.  
Refer.  
Prod.

*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 attachment 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.*

# Apave Certificate of conformity

# Letter of confirmation of the manufacturer

**apave**

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Lab36meca@apave.com

## Certificate of conformity AT4473612

### I. APPLICANT

- > Applicant: Mr Josef SCHIK
- > Company: LIEBHERR Werk Ehingen GmbH-Dr.HansLiebherr Str. 1-89584 Ehingen-GERMANY

### II. IDENTIFICATION OF THE EQUIPMENT

- > Type of equipment: Anchor device - class C
- > Trademark: LIEBHERR
- > Reference: Retaining ropes on Lattice Boom
- > Manufacturer: LIEBHERR Werk Ehingen GmbH-Dr.HansLiebherr Str. 1-89584 Ehingen-GERMANY

### III. CONDITION FOR USE OF THE EQUIPMENT

This anchor device is not a personal protective equipment (PPE) against falls from a height, but is intended to be used with PPE.

### IV. DESCRIPTION

- This anchorage device can be use by two persons maximum
- Ø of cable : 10 mm
- Span (way between structural anchors): Minimal 3m, Maximal 12m.
- Curve: without
- extremity anchorage reference :985997108

### I. REFERENTIAL

- > The assessment of conformity was conducted taking into account the provision of European standard NF EN 795 -1996 Class C.

### II. Conclusion

- > The Anchor device - class C " Retaining Ropes on Lattice Boom " as defined in the report n°4473612-001-1 conform to the requirements of the standard NF EN 795-1996.

Date: The 4 march of 2009

Technical Manager

Gilles QUANTIN

This certificate includes one page. This certificate is edited in two original copies. No duplicate will be issued.

This type of equipment is not a Personal Protective Equipment against falls from height, the present certificate of conformity is not an EC type test certificate delivered by a notified body

**CETE APAVE SUCCURSALE**

SEULES PAR ADRESSE S'APPLIQUENT AU CENTRE DE FONTAINE - 17 AVENUE PAUL-LANGEVIN - 36300 FONTAINE - FRANCE  
 LYON : 171 route de Saint-Eloi - BP 100 - 69611 TARDIMON-CEDEX - Tel: 04 72 52 52 22 - Fax: 04 72 52 52 40  
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**IKAR-GmbH Fulda**



KONTAKT@IKAR-GMBH.DE  
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Der Hersteller oder sein in der Gemeinschaft niedergelassener Bevollmächtigter :

IKAR GmbH  
Industriepark West  
D-36041 Fulda

bestätigt hiermit, dass das nachstehend beschriebene Auffangsystem  
bestehend aus:

Auffanggurt IK G 2 B und Höhensicherungsgerät HWDB 2 R,  
aufgrund der Ergebnisse der am 18.02.2010 durchgeführten Fallteste an  
Liebherr Mobilkrane mit zwei Anschlageneinrichtungen als Auffangsystem  
zur Sicherung gegen Absturz bei Montage- bzw. Inspektionsarbeiten  
bei bestimmungsgemäßer Anwendung und der Berücksichtigung der  
Ergebnisse der Risikobeurteilung persönliche Schutzausrüstung an  
Liebherr-Mobilkranen für Absturzsicherung, geeignet ist.

Fulda, den 27.03.2010

Otto Herberich  
IKAR GmbH

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".

IKAR-GMBH  
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RAFFEE  
HAMB  
BLZ: 530  
KONTO:

# Certificate of All Test & Inspection, Inc.

