HOW CAN I KNOW THAT **A TOWER CRANE** IS SAFE?

A MINIGUIDE FOR CUSTOMERS, USERS, CUSTOMS AND MARKET SURVEILLANCE AUTHORITIES

CECE
COMMITTEE FOR EUROPEAN CONSTRUCTION EQUIPMENT

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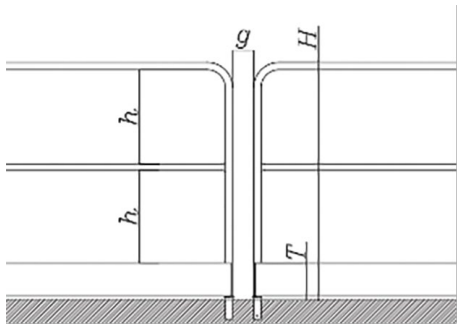
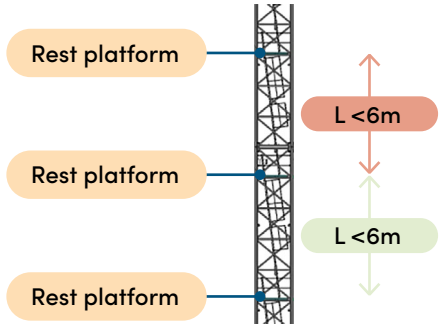
The Machinery Directive (2006/42/EC) contains the EU rules regulating health and safety in manufacturing machines. All machinery placed on these markets must be built according to this directive.

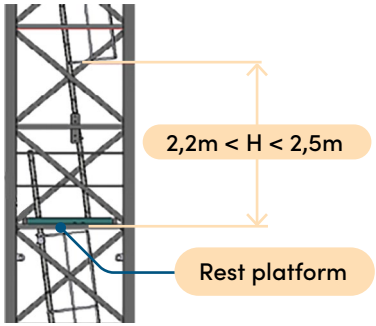
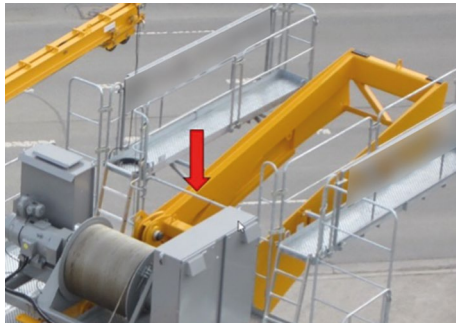
Producers must conduct a risk analysis and take responsibility for it, unless a harmonised standard exists. In that case, they can build the machine according to the standard, benefiting from the presumption of conformity.

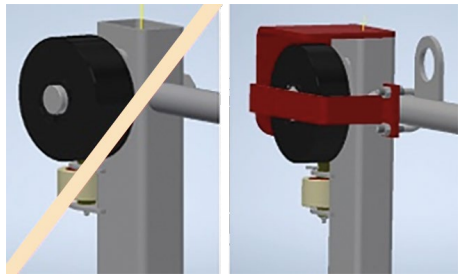
The harmonised standard that ensures compliance with health and safety rules for tower cranes is EN 14439.

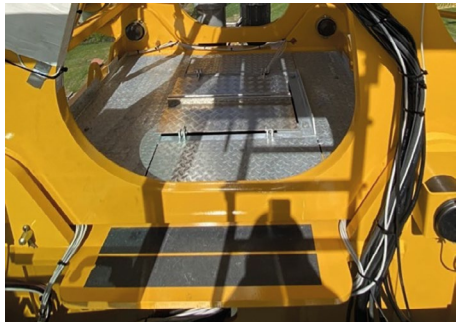
Below are 21 items—specifically mentioned or referenced in EN 14439—that you can check to determine if a tower crane is truly built according to the harmonised standard.

MECHANICAL

Standard reference/ legislation	Short description	Picture as example
EN 13586	Handrail dimensions: ○ Height (H)>1.1 m, ○ Height of the toe board (T)>0.1 m, ○ Max clear width (h)< 0.5m, ○ Gap: 0.05m<(g)< 0.12m.	
EN 13586	Access ladders in the tower must be of 10m and platforms must also be installed every 6m.	

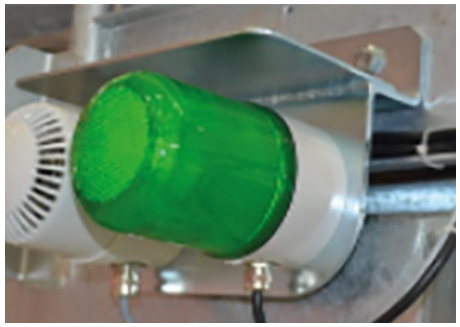
Standard reference/ legislation	Short description	Picture as example
EN 13586	Climbing ladders: Back guard in diameter as specified (max diameter 800mm) and distance from top edge of platform to bottom edge of back guard (2.2m to 2.5m).	
EN 13586	Walkways, Inclined Walkways, Platforms & Manholes: Each side of walkways, inclined walkways, resting platforms and other platforms, from which there is a risk of falling more than 1m, must be equipped with a guardrail.	
EN 13586 5.6.1 Table 4	Dimensions of ladders, rung are defined: 230mm to 300mm between rungs. Rung length min=300mm. Rung cross section =16 to 50mm.	

Standard reference/ legislation	Short description	Picture as example
EN14439:2006 +A2:2009	Falling of the trolley: The trolley pulleys must be protected against falling and designed in such a way that the trolley cannot fall.	
EN 13135	Wire rope on a drum should not go out of the drum: flanges are necessary for example. Flanges should be at least 1.5 times higher than the diameter of the rope.	

EN 13586	Means of access, walking and standing areas shall: **a.** have their working position(s) designated; (for example platform on articulated boom needs defined position of the boom for the access); **b.** take into account the number of the persons, and the presence of objects such as tools and spare parts; **c.** be constructed of materials specified as being incombustible and with slip resistant surfaces which do not retain liquid.	

ELECTRICAL

Standard reference/ legislation	Short description	Picture as example
EN 60204-32	Measures to limit the generation of electromagnetic disturbances, conducted and radiated emission include the motors cables shielding.	
EN 60204-32	Access to live parts opening an enclosure (i.e. opening doors, lids, covers and the like) shall be possible only under one of the following conditions: ○ The use of a key or tool is necessary for access, ○ The disconnection of live parts inside the enclosure before the enclosure can be opened.	

EN 14439	Remotely operated cranes shall be equipped with external indicator lights to indicate the condition of the machine. The green light should be placed so that it is visible to people near the crane.	
EN14439 5.4.2.10	Anemometer: tower cranes shall be provided with an anemometer (except for self-erecting cranes with a height under hook of less than 30m measured with a horizontal jib).	
EN 14439 C.2	When an anemometer is installed and when outside indicators are requested by local authorities. The light used shall be: a yellow flashing light for the warning level and a red one for the alarm level.	

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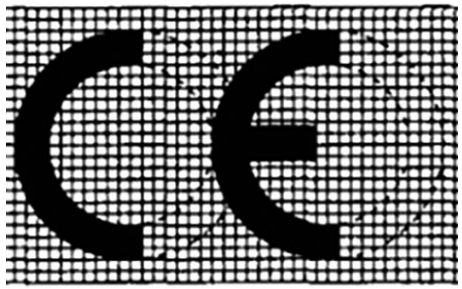
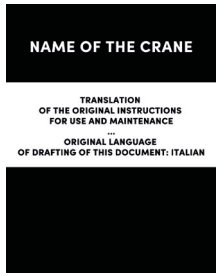
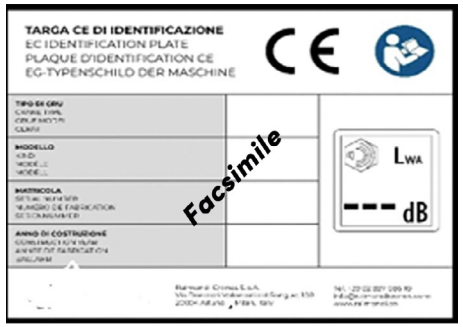
DOCUMENTATION

Standard reference/ legislation	Short description	Picture as example
Machinery Directive 2006/42/CE	The CE conformity mark consists of the initials 'CE' in accordance with the graphic symbol present in the mentioned directives.	
2006/42/EC 1.7.4.2	EC declaration of conformity should be included in the manual.	

2006/42/EC 1.7.4.2	On the EC declaration of conformity, reference to harmonised standards should be made and need to be checked.	Applied directives: ○ Machinery Directive 2006/42/EC, ○ Noise Directive 2000/14/EC as amended, ○ Electromagnetic Compatibility Directive 2014/30/EU, ○ Directive 2014/35/EU relating to electrical equipment designed for use within certain voltage limits. The machine was designed using the following European standards: ○ EN 14439:2006+A2:2009 / Cranes - Safety - Tower cranes, ○ EN 60204-32:2008 / Safety of machinery. Electrical equipment of machines. Requirements for hoisting machines, ○ EN 61000-6-2:2005 / Electromagnetic compatibility, ○ (EMC) - Generic standards - Immunity for industrial environments, ○ EN 61000-6-4:2007/A1:2011 / Electromagnetic compatibility (EMC) - Generic standards - Emission standard for industrial environments.
2006/42/ECAnnexe 2	The person authorised to compile the technical file should be established in the European community. The place and date of declaration and the identification and signature of the person who has the authority to draw up the declaration should appear in the EC declaration.	Facsimile France, 2024-05-15 (VP Engineering)

Machinery Directive 2006/42/CE	Machinery manuals must be available in the language of the member state where the machine is placed on the market and/ or put into service.	
EN14439:2006 + A2:2009	Identification: ○ Name and address of the manufacturer, ○ Mandatory marks (CE and guaranteed sound power level), ○ Designation of series or type, ○ Serial Number, ○ Year of manufacturing.	
EN14439:2006 + A2:2009	Safety labelling, in particular individual electrical components, require labels (heat/ voltage etc.).	
Machinery Directive 2006/42/CE	Steel wire rope CE certificate should be available in the manual of the crane.	

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