



Raimondi LR213 elevates Dubai's skyline to new heights with highest climbed crane in the region

IMAGE SOURCE: Raimondi

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- Raimondi LR213 luffing jib crane is currently operating at a height of 322 meters in Dubai.
- Extensive site planning was required due to intricate technical challenges and pre-existing foundation constraints.
- The crane is playing a significant role in constructing a 75-story premium residential building.
- Raimondi Middle East achieved a regional milestone with the highest climbed crane deployment.

- The deployment involved innovative engineering solutions, including a redesigned load curve and precise collar positioning.
- Dismantling procedures for the LR213-14t are planned to commence soon, involving a jack-down to 50 meters.
- A Raimondi LR213 is currently operating at a height of 322m
- The deployment of the LR213 required extensive site planning due to several intricate technical challenges

Raimondi Middle East has marked a region-wide milestone by deploying the highest climbed luffing jib crane.

Erected on an undercarriage, the Raimondi LR213 luffing jib crane, is currently operating at a significant height of 322 meters with a 50m jib and a tip load of 3.30t.

Playing a significant role in the construction of a 75-story premium residential building under construction in Dubai, United Arab Emirates, substantial site planning was involved to use the existing undercarriage, a type of steel base.

“With the deployment of the luffing LR213, Raimondi continues to demonstrate a presence on Dubai’s most relevant jobsites. This development underscores Raimondi’s steadfast commitment to innovative engineering and providing tailored solutions for the most demanding construction challenges,” stated Wael Hasan, General Manager, Raimondi Middle East.

The confined jobsite location, coupled with intricate technical challenges and contractor requirements, demanded a precision approach for machine deployment. Tasked with replacing a previously installed crane after the building had already reached a height of 100 meters, the Raimondi team faced the complexity of working with a pre-existing foundation.

The pre-existing foundation imposed restrictions on base loads, due to the existing raft and its maximum allowable limits.

Typically, crane foundations are designed based on reaction forces provided by the crane manufacturer; in this case, Raimondi’s engineers had to reverse the process, adapting the crane’s setup to comply with

predetermined limits.



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"To achieve this, we utilized a 6x6 base and progressively removed ballast blocks at each climbing stage, ensuring the base reaction remained within the studied allowable load limits. This adjustment was critical for maintaining stability while adhering to the site's structural limitations," Hasan explained.

In addition, to fulfil client requirements and project specifications, the Raimondi Applications Department redesigned the load curve to accommodate lifting needs at a final height exceeding 300 meters.

Structurally, the crane was assembled using GR5S mast elements, incorporating two longer 11.8- meter sections and 100 smaller 2.95-meter segments. To stabilize the crane at its towering height, 12 bracings were

installed.

One of the most challenging aspects of the deployment involved collar positioning.

Site-specific requirements necessitated several revisions to collar placement, each involving extensive iterative calculations and detailed adjustments. This meticulous process required significant engineering expertise and many hours of precision work.

“The complexities of this deployment demanded an extraordinary level of innovation and adaptability, highlighting Raimondi’s expertise in addressing unconventional challenges,” said Hasan. “From redesigning the base configuration to recalibrating the collars, every step of the process reflected Raimondi technical proficiency and commitment to excellence.”

With dismantling procedures expected to commence in the coming weeks, Raimondi Middle East operations team has planned the jack-down of the LR213-14t to 50m, after which the crane will be fully removed with the use of a mobile crane.

Source: Raimondi

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