



DELLNER BUBENZER

Is your crane safe enough?

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IS YOUR CRANE SAFE ENOUGH?

Facts

- The global climate is changing
 - The quantity of cranes is rising
 - The probability of accidents increases
 - **But storm brakes are always underestimated**
-
- When an accident occurs it is too late
 - **Prevent such a situation in advance**
 - Storm brakes cost only 1% of the investment for a new crane



Your Advantages

- ✓ You'll never have to worry about unexpected weather conditions again
- ✓ We will eliminate preventable incidents
- ✓ Lock down your crane with the right reaction time of your storm brake
- ✓ Ensure the safety of your system with a comparatively small investment

STORM BRAKES

Wheel brakes



Rail brakes



Rail clamps



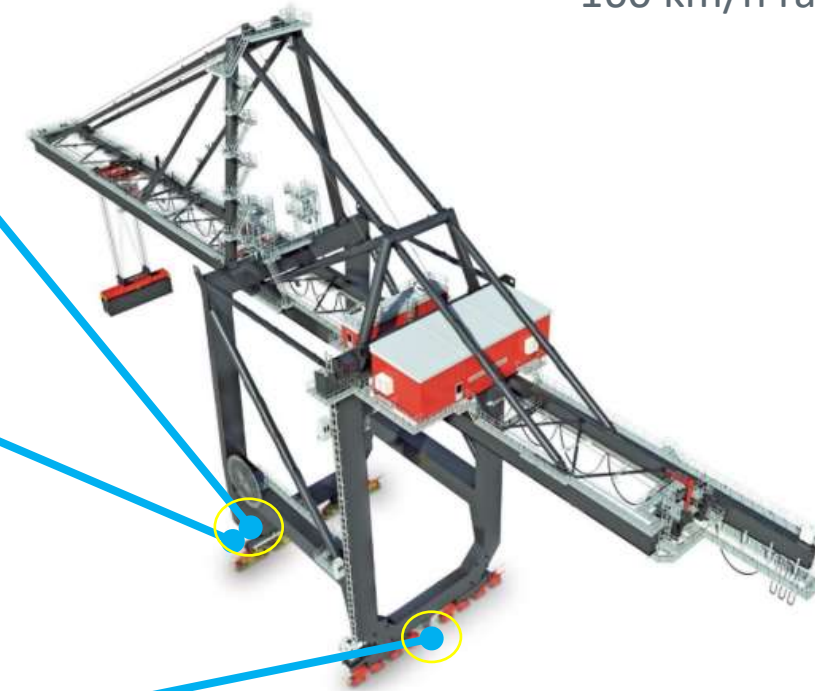
SB16



KFB



- 80 km/h drive brakes
- 100 km/h wheel brakes
- 160 km/h rail clamps/rail brakes



STORM BRAKES

Wheel Brakes

DBRB



DBRBe



Till 100 km/h wind speed the additional normal wheel brakes are sufficient

A wheel brake has roughly a maximum holding force of 80 kN, and it has no use to increase that to let's say 120 kN because from roughly 80 kN a crane start to slide on the rails due to wind power

STORM BRAKES

Rail Brakes

DBSBT



DBSB



Rail Clamps

DBSZ

DBSZA

DBSZR



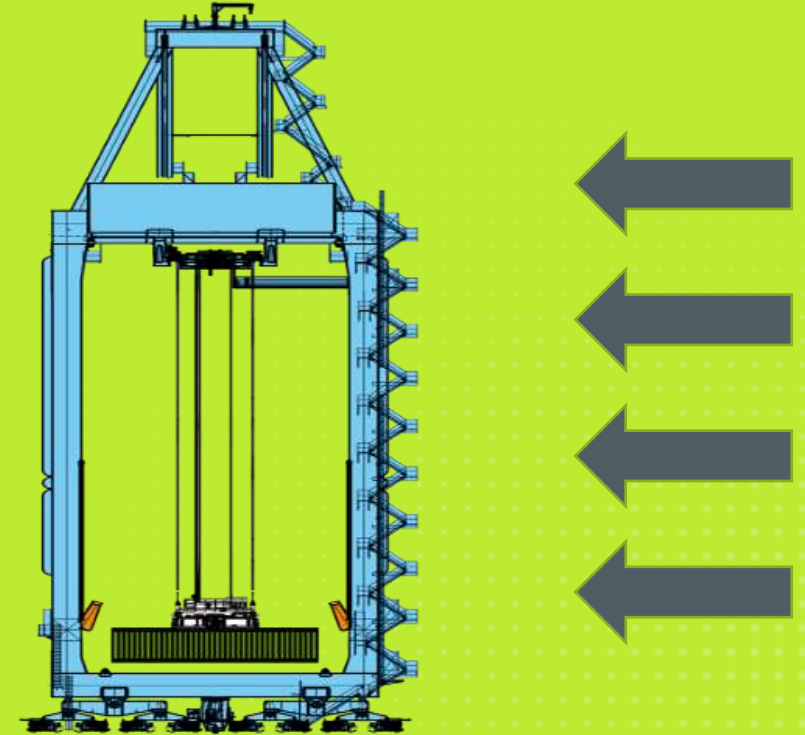
HOW TO BE MAKE A CORRECT SELECTION?

START FROM THE IMPORTANT INFORMATION

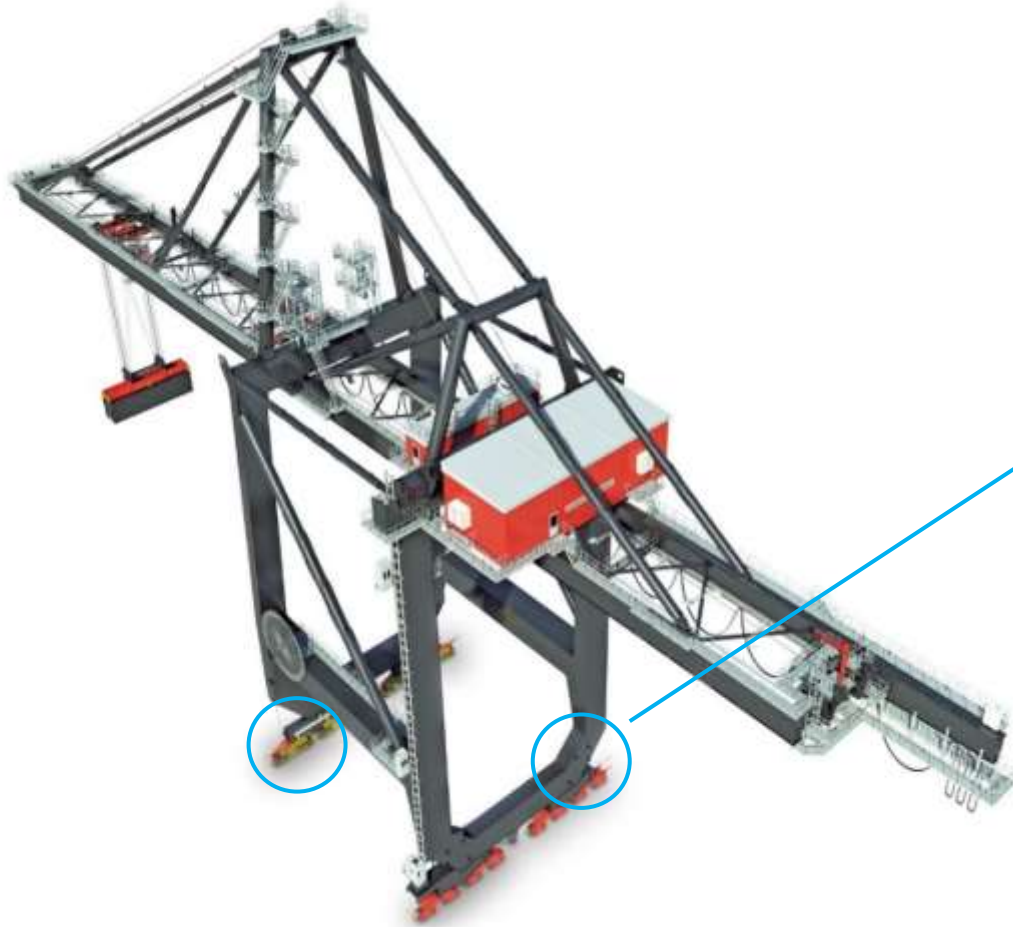
CRANE SURFACE

The crane surface is the main important information to calculate properly the wind force acting on the crane itself

- The information about the surface must be as much accurate as possible.
- A drawing of the crane would be the best information to have.
- Important: The shape coefficient must always be applied!



GANTRY BRAKES



Gantry brakes are working together with the storm brakes to ensure the crane.

The necessary holding force from the storm brakes is determined by the following formula:

$$F = F_w - [(C_w * W_r) * 0,14]$$

Where:

F_w = force generated by the wind

C_w = crane weight

W_r = ratio between the drive wheel and the total wheel number (e.g. if the drive wheels are the 25% of the total, the W_r value is 0,25)

0,14 = friction factor acc. F.E.M. between wheel and rail

Is very important to have the gantry brakes properly selected and in perfect working condition

RAIL PROFILE

- The railhead width must be measured, to know the minimum and maximum value.
- Rails can be worn but they can also be deformed due to the heavy weight of the crane
- The rail clamps must be designed to work with the correct tolerance between the two values.

Is also important to know any additional information like:

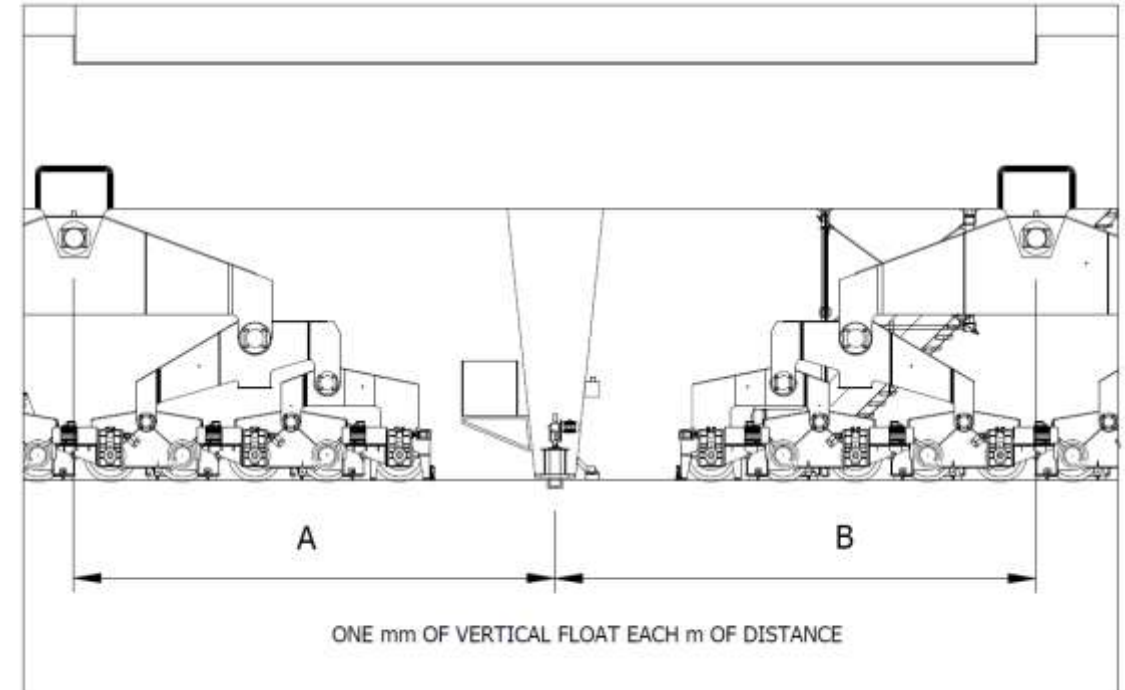
- Type of clips or fixing system
- Type of rail joint
- Dimension of the rail trench

Deformed rail



POSITIONING OF STORM BRAKES

- The installation position of the storm brakes (rail brakes and rail clamps) is very important because is closely related to the vertical and horizontal float
- If the brake is installed in the middle of the sil beam, take the distance between one equalizer or the other
- In case the brake is not in the middle
Vertical float = $(2 \cdot A \cdot B) / (A + B)$



Knowing all the important information leads into the correct selection of the storm brakes:

Keeping your crane safe!



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