

**MANUAL OF HANDLING, TRANSPORTATION
AND STORAGE OF ELECTRICAL CABLE REELS**

OBJECTIVE

Establish conditions for the proper handling, transportation and storage of electric cable reels, in order to keep the reel in proper conditions for use and ensure that the quality of the cable is kept.

REFERENCE STANDARD

ABNT NBR 7310/2011 - Transportation, storage and use of timber reels for electrical conductors.

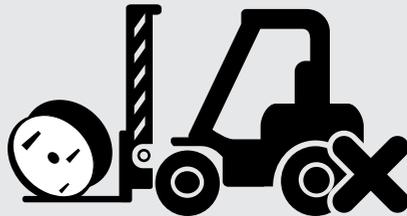
HANDLING

Basics

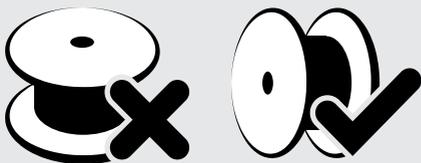
Reels cannot be rolled or dragged.



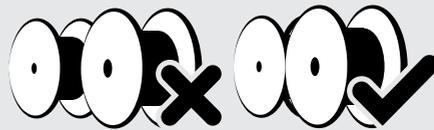
When using the forklift, avoid collisions with the reel.



The reels cannot be transported or stored with the flange positioned horizontally.



In order to store two reels of the same width, align the flanges on the same plane.



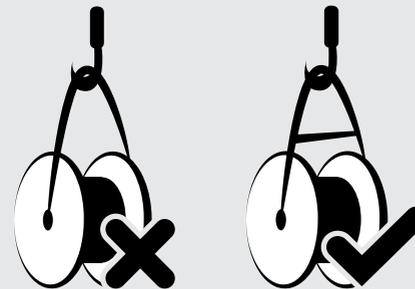
Procedures for lifting the coils

The loading, unloading and transportation over short distances, especially in places for storage, can be done by lifting or suspension equipment, and it should be used a device to avoid any damage to the reels, ensuring that there is no compressive stress or sudden movement.

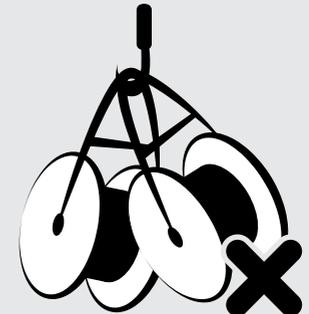
During the displacement of the reel it is required to use devices that prevent breaking or damage to the steel tying strap.

The removal of the reel must be made by using a support bar, which must pass through the central hole in the reel. The angle between it and the rope or the chain should be less than or equal to 60° so that they do not damage the reel.

A support bar should be placed just above the reel, so that it will serve as a separation for the rope or chain.



Lift only one reel at a time.



The rope must be installed so that the hook is kept centralized in order to avoid oscillation of the reel.

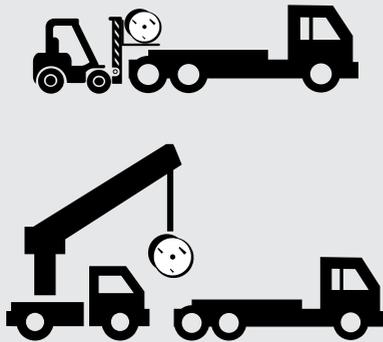


The lifting of the reels must be performed with care and attention. Slowly lower the reel and remove any obstacles.



- Care needed for handling of reels

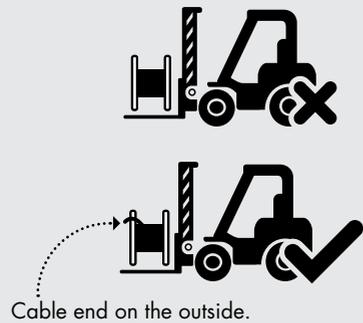
In order to handle or move the reels always use a forklift, crane or winch.



When using a forklift, keep the core of the reel in the same direction of displacement of the forklift.

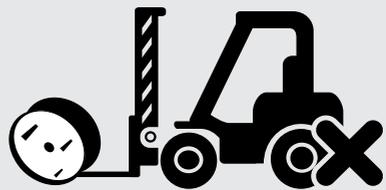


Be careful not to damage the end of the cable when it is exposed.



Cable end on the outside.

Use the forklift properly.

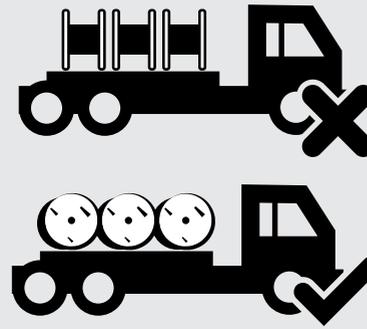


TRANSPORTATION BY TRUCK

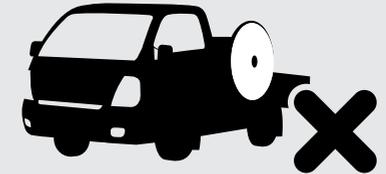
- Loading

The reels cannot be stored or transported with the flange in a horizontal position. They should be paved by appropriate wedges in order to avoid that they turn, and locked into position to prevent their side displacement. The locks and wedges should be fixed on the floor of the transport platform.

The transportation should be carried out with flanges in an upright position. The reel core must be arranged perpendicularly to the direction of travel.



The reels should not exceed the useful width of the transport platform.



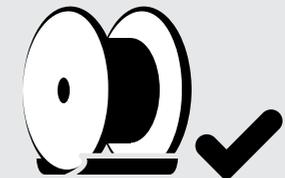
- Unloading

When unloading by lifting the reel, using a rope or steel cable.

Never unload by throwing the reel off of the platform onto the ground.



After unloading, always use the shim.



- Transportation by Ship

The reels should be chocked. Do not place any other load on the reels.

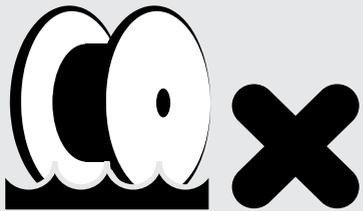
When loading the reels onto another load, cover with a flat piece of material, resistant enough to withstand the weight of the reels. Always put the reels on a flat surface.

STORAGE

Reels without preservative treatment can be stored in the open for a period of eighteen (18) months. When treated with a salt-base preservative, the reels can be stored in the open for a maximum of twenty-four (24) months. In both cases, they must be kept in compliance with the conditions established in standard NBR 7310 - Transportation, storage and use of timber reels for electrical conductors. The reels when stored in the open, must be at least 10 cm above the ground. If the reels are stored in a covered shed and if the soil is coated and drained, the reels can be in contact with the floor.

For insulated and/or covered cables, the reels must be stored in a covered site, complying with the conditions established in standard NBR 7310 - Transportation, storage and use of timber reels for electrical conductors. If the floor is coated and drained, the reels can be in contact with the floor.

In storage sites there should be adequate drainage in order to prevent water accumulation near the reels.

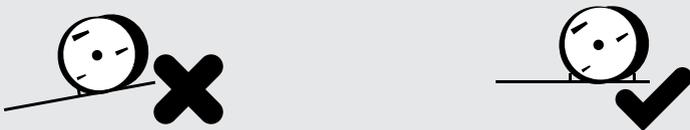


The reels should be chocked to prevent displacement by gravity. Use shims of a width at least equal to the width of the reel, with a thickness of at least

Reel diameter	Shim thickness
Up to 1700 mm	90 mm
Up to 2700 mm	120 mm

The flange of a reel should not be in contact with the flange of another reel or other objects and buildings, in order to allow for a good ventilation between reels. There must be a clearance of at least 15 cm between two reels or between the reels and buildings or objects.

We do not recommend the storage of reels on floors with a slope greater than 2%.

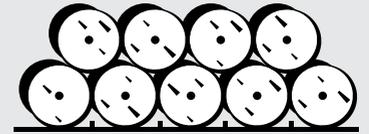


No materials can be placed on the reels to cover them, or they will prevent an adequate ventilation between the reels.

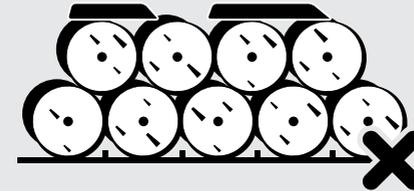
The reels that will be stored for a long period should be opened, by removing some battens for closure to allow for a good ventilation inside the reel.

Pile the reels in a pyramid shape, while maintaining the alignment of the flanges between neighboring reels.

Reel flange diameter	number of layers
Up to 1200 mm	3
Up to 1700 mm	2
Greater than 1700 mm	1



Do not place or store any other type of material on the reels.



USE

The reels cannot fall or collide with other objects or reels.

The closure battens can be removed only in the cable installation site, after the reel is placed into a release equipment.

When there is a stoppage in releasing, the closure battens must be placed in the reels.

There should always be checked the direction of unrolling of the cable, as indicated on the reel flanges.

For reels with rods, the tightness of nuts must be checked before release.



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