

Guidelines for Cables Handling Storage & Installation



Since 1958

Fort Gloster Industries Limited

From the house of Bangurs

Cable Handling & Storage

Proper care and strict compliance to highest grade of quality standard to be followed in every stage of manufacturing to ensure top class quality.

Handling of cables at site is the next most important factor to avoid damage of cables thereby ensuring reliable service.

The handling is generally carried out by unskilled or semi-skilled workers, strict supervision should be in place so that the cables are handled with proper care.

Do's

When off loading drums from vehicle, one should lower drums carefully using a suitable hydraulic arrangement, hoist or forklift.

If a forklift used for loading/unloading/shifting the cable drum, the forks shall approach the drum from the flange side. The forks shall be positioned in such a manner that the drums are lifted with both flanges without touching the cable.

When using a hoist, install a mandrel through the arbor holes and attach a sling. Use of a spreader bar approximately 6 inches longer than the overall drum width is recommended.

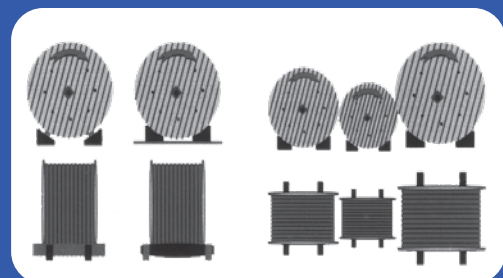
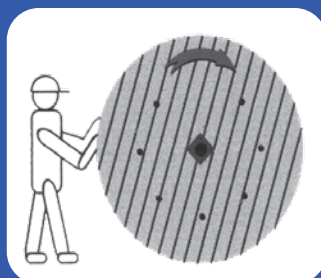
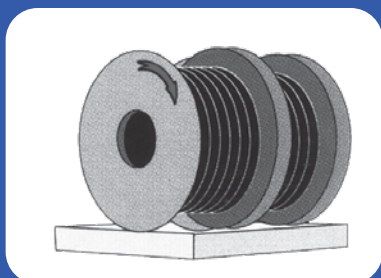
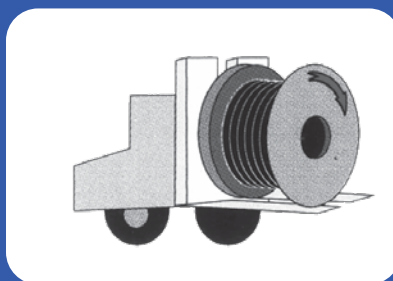
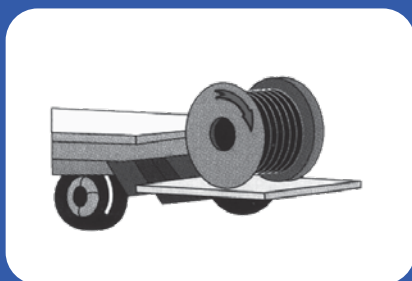
The site chosen for storage of Cable drums should be well drained & should preferably have a concrete surface/-firm surface which will not cause the drums to sink & thus lead to flange rot & extreme difficulty in moving the drums.

All drums should be stored in such a manner as to leave sufficient space between them for air circulation. During storage the drums should be rolled to an angle of 90 degree once every 3 months.

Cable should however be protected from direct rays of the sun by leaving the battens on or by providing some form of sun-shielding. Always use proper stoppers to prevent the drum from rolling.

When for any reason it is necessary to **rewind a Cable** on to another drum, the barrel of the drum should have a diameter not less than that of an original drum.

Always use proper support and tie the drum from both the front and rear.



The cable drums or coils must not be dropped or thrown from railway wagons or trucks during unloading operation. A ramp or crane may be used for unloading cable drums. If neither of this is available, a temporary ramp with inclination 1:3 to 1:4 approximately should be constructed. The cable drum, then should be rolled over the ramp by means of ropes & winches. Additionally, a sand bed at the foot of the ramp may be made to break the rolling of the cable drum.

Arrows painted on the flange of the drum indicates the direction in which the drum should be rolled. The cable will become unwind & become loose if the drum rolled in the opposite direction.

Do not allow the lift forks to contact the cable. Fork lift operator should take care not to make sudden stops or turns. In no case should the drums be stored "on the flat" that is with flange horizontal.

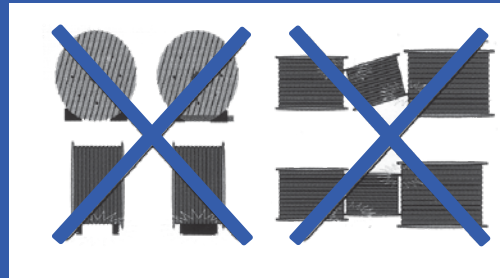
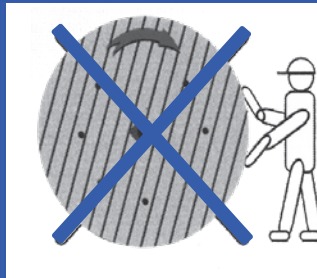
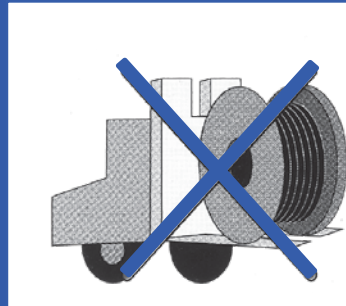
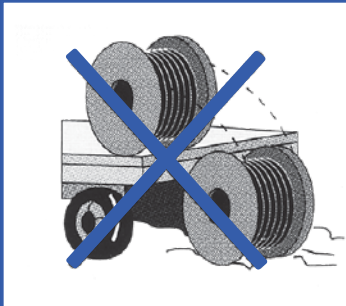
Multiple cable drums should not be stacked on top of each other ("Pancake" storage). Stack the drums on non-triangular/non-square wedges.

During transportation, do not fasten the drums without taking adequate care. Drums should be fastened to the base through the central hole. It is preferred to use a winch, forklift or make shift ramp.

Do not attempt "coiling" of cable on the ground. Cable should be laid in a Figure of Eight Formation.

Cable drums should not be fastened without taking adequate care.

Care should be taken to not allow one drum to strike another.



Laying of Cables & Installation

After the planking has been removed, the cable should be examined for exterior damage, if any. To avoid damage to the protective covering & insulation the cable must not be pulled across hard & sharp objects & must not be bent in an inadmissible way.

The cable should always be pulled off the top of the drum. In doing so, the drum should be placed in such a way that the painted arrow points to the opposite direction of pulling. The drum is jacked up with a drum axle to such a height that the plank needed for braking cannot jam, heavy drums should be jacked up with hydraulic drum pedestals.

Suitable provisions should be made to brake the drum, in order that during a sudden stop further rolling & consequent buckling is avoided. The kinks (nooses) are particularly dangerous and should be avoided at all cost. A simple plank can serve as a drum brake. When pulling, the cable drum is turned by hand in order to avoid excessive tensional stress, which may damage the cables, particularly smaller unarmoured cables.



Cable drum should be mounted on cable jack during unwinding of cables. While unwinding, drum flanges should not touch the ground & get damaged. The drum should never be kept flat on its side on the ground and the cable taken away from the same. This invariably leads kinking & bird caging.

Bird-Caging causes due to twisting cables while unreeling the cable following incorrect procedure, as a result outer sheath gets cracked and armour swells.

The pay-in rollers, corner rollers and properly aligned and smooth running cable rollers should be placed every 3 to 4 meters in the cable trench. At least three solid plates for guiding the cable around the bend should be used maintaining minimum bending radius.

Pulling Eyes should be used for pulling longer lengths and higher diameter of cables or it can be done by using winches or some other similar mechanical instrument.

In case of pulling cable with a rope, proper monitoring should be there to avoid bending of cables and ensure smooth flow of cables across the way.



Maximum safe pulling force with pulling eye

For Aluminium Conductor : 30 N/mm²

For Copper Conductor : 50 N/mm²

Recommended Minimum Bending Radius For HT Cable / LT Cables

HT Cables Single Core : 20 X D Multicore : 15 X D

LT Cables Single Core : 15 X D Multicore : 12 X D

(Where D= Diameter of cable in mm)

Note :

For detailed guideline on Code of Practice for Installation & Maintenance of Power Cable refer IS:1255



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