TECHNICAL BULLETIN
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Handling and storage of wooden cable drums

This bulletin provides supplementary information to SANS 10198-6 with regards to the handling and storage of wooden drums accommodating electric cables. The information is aimed at ensuring minimal risk of damage to the cable on a drum and the longevity of the wooden drum itself.

The main contents of the technical bulletin follow….

It is recommended that SANS 10198: “The selection, handling and installation of electric power cables of rating not exceeding 33kV”, Part 6 – Transportation and storage should be read in conjunction with this bulletin.

General handling of wooden cable drums

Drums of cable should normally be lifted by crane or forklift equipment or alternatively ramped-off using boards and a wind off winch. Dropping drums of cable on to the ground from a truck can cause damage to both the cable and the drum. The drum should be mounted at the most convenient position for cable pulling and for manual installation. This is normally at the start of a reasonably straight section, preferably near the commencement of trench work.

It is important that any rolling of the drum to this position should be in accordance with the arrow on the drum wing as loose turns will develop, by unwinding, if the opposite direction is used. The distance of rolling should be kept to a minimum. Drums are normally mounted so that the cable is pulled from the top of the drum and for very heavy cables it may be necessary to use a ramp to support the cable during passage into the trench. When cables have significant stiffness, e.g. those with non-corrugated aluminium sheaths, it may be preferable to pull from the bottom to reduce the tendency for the cable to come off with a wavy or spiral profile. As the cable is paid off, the drum rotates counter to the arrow which is intended to indicate the direction for rolling the drum into position

Short-term storage of wooden cable drums

If wooden drums of cable are left standing for a short period of time e.g. prior to shipment or installation, the following points should be noted:
The site for storage of drums should be well drained, the site should have hard packed soil or preferably a concrete surface, which will not allow the drums to sink and so give rise to damage due to the extreme difficulty in moving drums when they have sunk into the ground. If there are heavy rainy conditions expected, the cables should preferably be covered with a suitable weatherproof material.

All drums should be stored with the battens intact, and in such a manner as to leave sufficient space between drums for air circulation. It is important that the nuts on all tie-bolts are checked for tightness at regular intervals (particularly in warm climates).

Tier stacking of drums is not recommended and under no circumstances must the drums be stored on the flat’, i.e., with flanges horizontal.

All drums during installation (i.e. when the battens have been removed) should be 'wedged' so that there is no danger of the flanges of drums coming into accidental contact with unprotected cable on other drums. The cable should not be left unprotected.

Precautions should be taken against fire especially if cable drums are stored in open fenced yards.

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Long-term storage of wooden cable drums

If wooden cable drums are intended to be stored in open yards exposed to direct sunlight, UV rays and rain for a long term period, the drum should preferably be raised off the ground to prevent water collecting underneath which may cause rotting of the various timbers to occur.

Cable drums should also be rotated through 90 degrees at annual intervals so as to limit exposure of the cellulose fibers to solar and UV degradation. It is recommended that appropriate year markings should be made at 90 degree intervals around the drum to facilitate checking. A visual inspection of the drums should be carried out at annual intervals to check their general condition. The condition of the sealed end caps on the cable ends should also be checked and replaced if deteriorated.

To avoid the continuing use of drums that have deteriorated to the point where it would be dangerous to keep them in service, a proper system of inspection and action should be followed. This should include the regular inspection of drums. The issuing of drum stock should always be on a ‘first-in’ ‘first-out’ principle.

If deterioration of wooden cable drums has taken place, the cables should be re-drummed onto replacement drums. This should not be left until the wooden drum becomes dangerous to handle or transport.
In addition to the above, protection against termites and other insects should also be taken into consideration if this may be considered as a risk. Precautions should also be taken against fire propagation

Cold weather precautions

A cable must not be laid or otherwise bent when it is at such a low temperature that damage might be caused to the insulation or serving. With normal paper insulated cables and any cables having a standard PVC over sheath, cable laying should take place only when both cable and ambient temperature have been at or above 0°C for the previous 24 hours, or when special steps have been taken to heat the cable to above this temperature.

If there is reason to suspect that the cable is below 0°C, its temperature must be measured by inserting a standard glass bulb thermometer (-10°C to +10°C) between the turns of cable. For this purpose two to three battens should be removed from the drum at 45 ° and 135 ° positions. If the cable is below the temperature limit and the drum cannot be taken into a heated building, laying must be deferred until its temperature has either been raised by a suitable method or has increased naturally due to an increase in the ambient temperature.

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