



Ice Jacking on Compression Fittings

ISSUE IDENTIFIED:

Transpower field audits are identifying line termination compression fittings/lugs are still being installed without the required 3mm drilled drain hole at the bottom of the end facing upwards, this allows potential for ice jacking. Ice jacking is caused by the capillary accumulation of water inside the termination end and the water expands when it freezes. After repeated occurrence, the material stretches to the point where it splits.

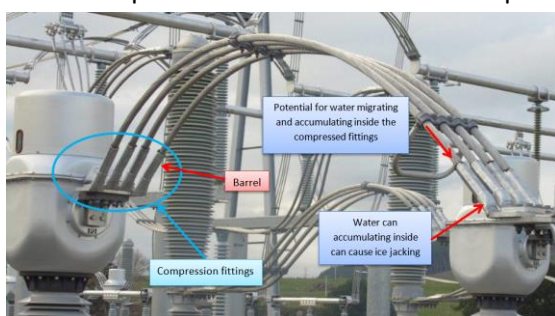


Figure 1. example of upward facing termination compression lugs



Figure 2. Example of lug with no 3mm hole



Figure 3. Example of lug with correct 3mm hole

CONTRIBUTING FACTORS:

- Whilst inspections of termination compression lugs at a large number of sites were arranged in 2016 in relation to Service Instruction SI-02.16.001, it appears that teams involved in the installation of new line termination compression fittings/lugs may still not be aware of the requirement for the 3mm drilled drain hole, and requirement to comply with TP.SS 02.16.

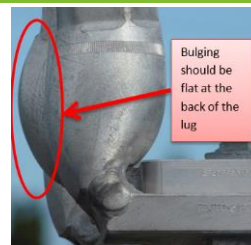


Figure 4. Example of bulging lug no 3mm hole

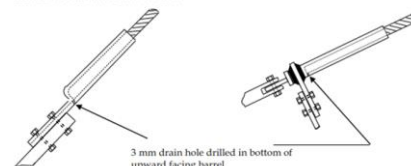


Figure 5. Example of split lug

ACTIONS TAKEN TO PREVENT REOCCURENCE:

- This phenomenon is known to Transpower and a 3mm drain is required to be drilled at the base of all barrels installed where water can migrate and accumulate inside the fittings. This recommendation is documented in the Transpower service specification TP.SS 02.16 Appendix D, Clauses D1.15.

Joints at risk of ice jacking due to the accumulation of water (e.g. dead-end or jumper compressions with the mouth facing upwards) must have a 3mm drain hole drilled through the lowest point of the joint sleeve just in front of the compression zone. The location and orientation of the hole is shown below.



LEARNINGS FROM THIS

- Transpower has previously communicated on this matter via a Northpower First Alert relating to failed lugs on 11-Aug-2016, and via Service Instruction SI-02.16.001 on 16-Aug-2016
- Service Provider Project and Maintenance teams are reminded of the above alert and service instruction and requirement to comply with TP.SS 02.16 Appendix D, Clauses D1.15



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