

Maintenance of electrical installation and transducer connections for WheelChex™ installations

1 Scope

Includes: Maintenance of electrical installation and transducer connections for WheelChex™ installations

Excludes: Maintenance and inspection of sleepers, ballast, rails and fastenings

2 Preparation

Tools and equipment required but not limited to:

- Model 1300 Gage Installation Tester (15Vdc) or suitable and adequate equivalent: e.g. MIT400 CAT IV Industrial Insulation Testers – MIT40X 10V to 100V in 1V steps, set to 15Vdc (MIT40X Insulation Tester: RS Stock No 611-1314).

High Voltage insulation tests (e.g. megger) must not be applied to this equipment.

Instrument test leads must not be in contact with any superfluous parallel paths (e.g. bare skin) when measuring any defined insulation resistance.

- plastic paddle (Wago Stick: RS Stock No 180-9347).
- Calibrated torque spanner for transducer guards and rail foot clamps

Work planning considerations:

- All test work described within this procedure must be carried out with the relevant lines blocked in accordance with the Rule Book.
- Agree with a relevant party that installation may be removed from service (Control Centre / WheelChex contact).

NOTE Advance notification may be necessary.

3 Method

3.1 'D' Examination

3.1.1 Transducer guards

Examine all guards for signs of any damage – replace guard plate if damage exposes any elements of the transducer or cables.

Renew all nuts if guard plate removed or replaced.

3.1.2 Rail foot clamps

Examine all clamps for signs of serious damage.

3.1.3 Cross-track cabling and trough routes

- a) Check that all 'cross-track' cable troughs are correctly seated and aligned with track.

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- b) Check the security of any cable to sleeper holding device.
- c) Examine all concrete cable troughs for signs of damage to lids.
- d) Examine cabling and/or protective hose not within troughs for signs of any damage.

3.1.4 Amplifier boxes / supports

- (a) Examine the condition of the protective hose from the rail foot clamp to the amplifier box.
- (b) Check that all amplifier boxes are tightly closed.
- (c) Check that each amplifier box is securely fastened to its stake and that each stake is soundly located into the ballast.
- (d) Check that each amplifier box / stake is within tolerance as determined by the relevant loading gauge.
 - Not less than 800mm from inside edge of the nearest running rail; and
 - Not higher than 900mm above the nearest running rail.If necessary, adjust stake to be compliant with gauge requirements.

3.1.5 Lineside cabinet (including internal 230V/110V Transformer)

- (a) Examine exterior of cabinet for signs of any damage or deterioration in the protective coating.
- (b) Check presence, security and legibility of all external signage.
- (c) Remove any vegetation or debris from vicinity of cabinet / compound area.
- (d) Check transformer for satisfactory condition and security.

3.1.6 Protection against mechanised tamping

Check the presence, security and legibility of all associated site protection signage.

3.2 'F' Examination

3.2.1 Electrical tests

NOTE This procedure caters for the electrical testing of one track only: procedure to be repeated for each track in turn.

- (a) Switch power off (use switch located within line-side cabinet): lock-off switch.
- (b) Disconnect the power supply connections to all 4 x line-side amplifier boxes by detaching each linking cable at the WheelChex computer (located within line-side cabinet).
- (c) Remove cover and internal lid from each amplifier box in turn.