

Technical Specification - Signalling

T0538

(Formerly S7720)

Specification for electric strip rail heating

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	JNP Generic Technical Specification for Points Heating Installations (dated 28-02-2001) (pdf format). Note: 100 pages.	10

1 Purpose

- 1.1 This specification applies to electric strip heating, to be used to heat rails and other associated track mounted equipment, and details general requirements. Detailed site-specific contract and design documentation, together with any relevant items relating to existing installations, shall accompany this specification.

2 Scope

- 2.1 The electric strip heating is intended to heat rails, in particular point blades, and other associated track-mounted equipment, such that it is kept free from snow and ice. Electric strip heating systems shall be designed for a 25 year working life, and shall not interfere with the operation or any other associated electrical or mechanical systems installed on the railway. The Supplier shall identify any sub-components that will need replacing before 25 years, and agree a suitable maintenance regime with London Underground. This specification shall not apply to installations installed prior to its date of issue.
- 2.2 This document is an updated version of E7720 A2, which is withdrawn.

3 Requirements

3.1 Operational requirements

- 3.1.1 The electric strip heating, together with associated cabling and connections, shall be designed for track-mounted installation, with intimate proximity between the heated strip and surface to be heated. The heating strip shall be securely fixed to the surface to be heated, and the fixings and heating strip shall be resistant to the vibration (as detailed for track bed-mounted equipment in specification E7202) from passing trains and from weathering, throughout the 25 year design life of the system. The strip heating system shall be designed to encounter ambient temperatures down to -20°C. The system shall become operational once the conditions for snow and ice have been detected and shall supply sufficient heat to keep the relevant areas snow and ice free, for air and ground temperatures down to -25°C, allowing for 'wind chill' factors.

3.2 Availability, reliability and maintainability

3.2.1 Availability

- 3.2.1.1 Nothing further to add to clause 3.2.2.

3.2.2 Reliability

- 3.2.2.1 The railway track is a harsh environment for fixed electrical equipment and cables. Damage to, or failure of, such equipment, combined with other latent faults within the four rail system, may result in the infiltration of circuits by DC traction, signalling or 50Hz power supplies. In addition to the requirements specified in paragraphs 3.3.4 (Power Supply Arrangements) and 3.5.1 (Components – trackside), every effort shall be made in the design. Procurement, installation and testing procedures associated with the strip heaters, to minimise the frequency and adverse effects of such incidents.
- 3.2.2.2 The strip heating system shall remain reliable, throughout its 25 year designed working life, but a facility shall be provided to give an indication should the system fail. The Supplier shall advise London Underground of the expected mean time between failures per individual strip heater covering all failure modes except failure of the incoming power supply, together with any maintenance regime upon which this failure figure depends. The Supplier shall also advise London Underground of the expected mean time to repair a failure, once a technician and replacement parts are on site.