

Category 2 Standard

S2536 Maintenance of Points

(Formerly S2536)



Please read the Written Notices
attached to this standard

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1 Purpose

- 1.1 This standard defines the minimum routine maintenance requirement for points. It applies to the following types of points on London Underground Limited and includes the following: Four-Foot (bull head and flat bottom); Four Foot shallow depth; Six-Foot; Chairlock; Clamplock (hydraulic, pneumatic and movable angle); Power Facing Spring Trailing; Contactless; Switchlock; Style 63; HW1000; Wide To Gauge Single Switch; Movable Angle Six-Foot; Movable Angle Chairlock; Surelock (Four Foot and Six Foot); Four-Foot Slips (single and double); Single Switch and Swing Nose points.

2 Scope

- 2.1 This standard does not cover the effectiveness of track bonds nor the maintenance of point heaters. These subjects are covered by engineering standards [S2541](#) and [S2543](#) respectively.
- 2.2 The primary user of this standard shall be the Asset Steward.
- 2.3 It is not normally intended to define methods or tests, but where the standard does so it is for particular reasons and the Asset Steward shall adhere to those methods. Workshop overhaul is not covered by this standard.
- 2.4 This standard replaces S2536 A6.

3 Requirements

3.1 Safety considerations

3.1.1 System safety

- 3.1.1.1 Points are safety critical assets. In the event of failure, the safety of train movement may be jeopardised through derailment or collision arising from mis-routeing.

3.1.2 Safety of personnel

- 3.1.2.1 Point mechanisms and other associated equipment are situated in either the four foot way or adjacent to the track. A safe system of work must therefore be devised and followed for all maintenance activities, taking account of statutory requirements and LU rules to guard against the consequent hazards such as electric shock, moving trains and hazardous substances in accordance with the appropriate statutory requirements, Contract QUENSH conditions and the London Underground Rule Book.
- 3.1.2.2 Safety equipment must be appropriate for the task concerned, and maintained in accordance with the appropriate standards.

3.1.3 Environmental safety

- 3.1.3.1 All maintenance activities including vegetation control, disposal of lubricant and wastes, utilisation of energy and materials, shall be carried out in compliance with present statutory safety and environmental legislation, Contract QUENSH conditions and codes of practice. Assets shall be assessed to identify products and wastes that can be reused, re-cycled or rendered harmless and any discharges controlled to minimise their environmental impact during the whole maintenance procedure.

3.2 Operational requirements

3.2.1 Authorisation

3.2.1.1 Competency

- 3.2.1.1.1 Maintenance staff shall be assessed to be competent to work on that asset type in accordance with standard S1203, Competence of Personnel Working on Signal and Control Systems.

3.2.1.2 Task authorisation and certification

- 3.2.1.2.1 Individual tasks involving a disturbance to the function of an asset must be sanctioned in advance and certified on completion through the issue of an Authority to Work Certificate in accordance with S2529, Signalling and Control Systems safety critical processes.

3.2.2 Planning requirements

- 3.2.2.1 Asset stewards shall devise a maintenance regime by which points are maintained in a safe and effective state. The regime shall define the frequency or other criteria for maintenance and the tasks to be carried out. Maintenance activities, including the derivation and upkeep of the documented regime and its implementation, shall be controlled by a management system which shall be subject to programmed review and audit.

Note: Historically the maintenance regime has been time based with a frequency of 6 weeks.

- 3.2.2.2 The Asset Steward shall develop a method of verification to monitor the effectiveness of the maintenance regime.

- 3.2.2.3 The effectiveness of the maintenance regime shall be verified by the Asset Steward:

- a) at regular intervals;
- b) following significant incidents;
- c) in advance of planned changes.

Changes to the maintenance regime shall be managed in accordance with the requirements of S1538, Assurance.

- 3.2.2.4 Execution of duties shall be verified by programmed audit.

- 3.2.2.5 Processes shall be established to enable maintainers to report potential deficiencies in the regime and for these to be considered.

- 3.2.2.6 The asset steward shall ensure that the following permanent way aspects of the points mechanism are correctly maintained:

- a) timber and sleepers are sound and on firmly ballasted foundation or bed;
- b) slide chairs and baseplates are secure without groove and wear, and adequately lubricated;

Note: Recent developments in the use of 'Interflon' lubricant as part of routine point maintenance has demonstrated improvements in managing friction between slide chairs and the underside of switches.

- c) all rail fastenings are in place and secure;



- d) stock and switch rails are correctly gauged for side cut wear, are not damaged or chipped, rest evenly on all chairs throughout the turn-out, that switch rails are in contact with the stock rail throughout the length of planing and lie neutral without spring or bias with point equipment and stretchers disconnected;
- e) stretcher bar insulation is intact;
- f) point anchors are secure to stock and switch rails and correctly adjusted;
- g) tie plates and stops are secure and the insulation sound.

3.2.3 Maintenance requirements

3.2.3.1 Periodic requirements

3.2.3.1.1 Where the following are features of the equipment the asset steward shall ensure, throughout the year, that the following requirements are met:

3.2.3.1.1 All points

- a) toes of switches have no visible damage;
- b) there are no obstructions to movement of the points such as ballast or rubbish;
- c) point mechanism insulation pieces are not damaged and are effective;
- d) wiring and cables are securely terminated and in good condition;
- e) all fixings are tight and secure;
- f) the mechanism is clean and oiled;
- g) all indication contacts are clean and in good condition;
- h) where appropriate, air hoses are free from leaks, connections are tight and air filters clean;
- i) switches rest on chairs for their full length;

Requirement: Gap between rail and slide chairs shall be 1 mm maximum.

- j) switch rail is firmly against the stock rail;

Requirement: a gap of less than 0,5 mm between the switch and stock rails from the toe and the stretcher behind the point motor.

- k) the lead and lag of the switch toes on the first slide chair shall be for:
 - 1) bullhead rail - 3 mm maximum from the edge of the slide.
 - 2) flat bottom rail - 3 mm maximum from a point 9 mm behind the edge of the slide.
- l) switches shall be square to the road;

Requirement: 10 mm maximum;

- m) the WL is effective in restraining the point operating mechanism when driven in either direction under power;
- n) the points fail to lock when driven in either direction under air, when gauges are inserted between the stock and switch rails as defined in Table 3 of Attachment 1;