
SPECIFICATION FOR

FOOTWAY BOARDS, RAMPS & ROAD PLATES

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FOREWORD

This Specification was approved by the Distribution and Emergency Policy Manager, on 28th October 2004 for use by managers, engineers and supervisors throughout National Grid Gas.

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BRIEF HISTORY

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KEY CHANGES (Identify the changes from the previous version of this document)

Section	Amendments
All	Changes to reflect rebadging to National Grid. Removal of Transco and substitution of National Grid. Change of must to shall

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MANDATORY AND NON-MANDATORY REQUIREMENTS

In this document:

shall: indicates a mandatory requirement.

should: indicates best practice and is the preferred option. If an alternative method is used then a suitable and sufficient risk assessment shall be completed to show that the alternative method delivers the same, or better, level of protection.

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SPECIFICATION FOR FOOTWAY BOARDS, FOOTWAY RAMPS AND ROAD PLATES

1. SCOPE

This National Grid Gas Specification specifies the essential requirements for footway boards, footway ramps and road plates which are proposed to be purchased or hired for use in National Grid Gas.

2. REFERENCES

This specification makes reference to the documents listed below. Unless otherwise stated the latest editions of these documents, including all addenda, supplements and revisions shall apply:-

- Safety at Street Works and Road Works – A Code of Practice ACOP (February 2002.)
- T/PR/FP/DIS 4.1 – Excavation & Reinstatement for Pipelaying (1994).
- T/PM/DIS 3.6 – Management Procedure for Lifting Operations (January 2004).
- Guidelines for the Safe Use of Road Plates (Advantica Report - November 2000).
- T/PR/TE/R1.1 – Engineering Procedure for use of Footway Boards, Ramps & Road Plates.
- SROH, Hand P Book, NRSWA HSE Guidance MISC 480 (November 2002)

3. DEFINITIONS

For the purposes of this specification the following definitions shall apply:-

Footway Board: Board used to temporarily cover open excavations in footway or verge to allow pedestrians to safely walk across.

Footway Ramp: Ramp used for wheelchairs and pushchairs to be able to get onto footway from carriageway.

Road Plate: Metallic plate used to temporarily cover open excavation in carriageway to allow vehicles to safely travel over.

4. BACKGROUND

- Footway boards, ramps and road plates are frequently used in National Grid Gas's operations.
- A revised "Safety at Street Works and Road Works – A Code of Practice (ACOP)" came into effect in February 2002 outlining minimum statutory requirements for footway boards and road plates.
- No such proprietary road plates existed in the UK at time of issue of the ACOP above.
- National Grid Gas needed to ensure specifications are in place for the purchase or hire of footway boards, ramps and road plates to comply with the ACOP's statutory requirements.

5. FOOTWAY BOARD

Footway boards shall only be used on footways to maintain pedestrian traffic along footways, access to premises, cycle tracks and verges or where light vehicle access to premises during excavation works (as per ACOP).

The National Grid Gas Specification for a footway board is as follows:-

5.1 Application

5.1.1 Footway boards used to bridge excavations shall provide at least 1 metre width for pedestrians, but preferably be 1.5 metres wide (as per ACOP).

5.1.2. The maximum width of trench is 700mm and the maximum size of excavation is 700mm x 700mm

5.1.3. The footway board shall have a mechanism to securely anchor the board to surface of footway (as per ACOP).

5.2 Strength

5.2.1 Footway boards shall be strong enough to support pedestrians and light vehicles (as per ACOP) whilst spanning a trench width of 700mm maximum.

5.2.2 The footway board shall be capable of supporting the maximum weight of 400kg and the failure load is 800kg (8kN) when loaded at the centre.

5.2.3 Where used on a vehicle crossover, the whole width of the crossover shall be boarded (as per ACOP). The footway board shall be capable of supporting a vertical wheel load of 4kN over an excavation width of 700mm. Residual deflection shall not exceed 10mm and under load the board shall not deflect more than 45mm. The board shall not demonstrate any outward signs of structural failure. Ultimate failure load shall not be less than 800kg (8kN) loaded at the centre. Able to withstand fatigue from cyclic loading up to at least 2 years without failure in normal use.

5.3 Construction & Materials

5.3.1 The footway board shall be resistant to petroleum-based products such as petrol, diesel, etc. and road salt.

5.3.2 Footway boards shall be made from a material, which is unlikely to become distorted.

5.3.3 The edges of the footway board shall be chamfered to prevent tripping and have an upper surface which is slip-resistant (as per ACOP).

5.3.4 The footway board shall of a material & construction that offers a weight of no more than 21 Kg to comply with current manual handling legislation for single man movement.

5.3.5 The footway board shall be coloured yellow to indicate gas work or for contractors this can be in their corporate colours.

5.3.6 The height at the edge of footway board shall not exceed 4mm, plus or minus 2mm either way. In any event, no vertical edge on the board shall exceed 8mm to comply with the New Roads & Streets Works Act.

5.4 Handling Characteristics

5.4.1 The footway board shall be designed for good handling characteristics such as the ability for an operative to securely grip the board during movement.

5.4.2 Suitable handholds should be included to ensure a suitable grip when lifting/ carrying and consideration should be given to a slotted hole in which a key can be inserted through 90 degrees to aid carrying and provide safer movement. The grip should be designed for a safe as possible grip in wet, muddy or frozen conditions.

5.4.3 These items are considered bulky under HSE guidance MISC480 11/02 and although when being carried they are close to the chest, the upper arms are angled from the trunk in a star fashion, with the resultant obstructions to visibility and movement. This shall be considered in handling design and the markings required in Section 5.5.

5.4.4 The footway board shall have no sharp edges or other protrusions that can injure hands, fingers etc. when lowering, lifting or transporting the footpath board.

5.4.5 Be able to comply with current manual handling legislation.

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5.5 Markings

5.5.1 The date the board was produced shall be clearly visible and the maximum size of excavation the board is suitable for shall also be clearly visible/ labelled.

5.5.2 The markings on the board shall have lettering height between 25 to 40mm and shall include:-

- National Grid Gas (or Contractor's Name) and Manufacturer's Name.
- Month and Year of Manufacture.
- Safe Working Load (e.g. 400kg) or Maximum Centre Point Loading.
- Maximum width of trench in each direction.
- "Not for Use in the Carriageway" or "Not for Road Use"

6. FOOTWAY RAMP

When pedestrians are diverted to temporary footways in the carriageway, suitable ramps shall be provided to enable people using wheelchairs or pushchairs to negotiate kerbs safely to the surface of the footway and/or carriageway (as per ACOP).

The National Grid Gas Specification for a footway ramp is as follows:-

6.1 Application

6.1.1 The footway ramp design shall provide a method to securely anchor the ramp to surface of footway or carriageway, as appropriate, so that it remains reasonably stable for wheelchair & pushchair users to safely use it (as per ACOP).

6.1.2 The design of the footway ramp shall include a platform at kerb level which will allow wheelchair users to turn through 90 Degrees before descending the ramp in a line that is parallel to the kerb (as per ACOP).

6.1.3 The footway ramp shall be designed that, when in position, it shall allow rainwater to run along the gutter (as per ACOP).

6.2 Strength

6.2.1 Footway ramps shall be strong enough to support pedestrians, wheelchair users & pushchairs (as per ACOP).

6.2.2 The footway ramp shall be able to safely support a load of 250 kg.

6.2.3 The ramp maximum deflection under loading shall not exceed 25mm.

6.2.4 The ramp maximum residual deflection after loading shall not exceed 6mm.

6.2.5 Able to withstand fatigue from cyclic loading for at least 2 years without failure in normal use.

6.3 Construction & Materials

6.3.1 The footway ramp shall be resistant to petroleum-based products such as petrol, diesel, road salt and similar liquids/ substances that may be encountered during road works.

6.3.2 Footway ramps shall be made from a material which is unlikely to become distorted.

6.3.3 The edges of the footway ramp shall have a raised edge to prevent wheelchair or pushchair users from slipping over the edge (as per ACOP). No vertical edge on the ramp shall exceed 8mm to comply with the New Roads & Streets Works Act.

6.3.4 The footway ramp shall have an upper surface which is slip-resistant (as per ACOP).

6.3.5 The footway ramp shall slope gently enough to enable wheelchair users and pushchairs to reach the kerb without undue difficulty (as per ACOP).

6.3.6 The footway ramp shall be coloured yellow to indicate gas work or for contractors this can be in their corporate colours.

6.4 Handling Characteristics

6.4.1 The footway ramp shall be designed for good handling characteristics such as the ability for two operatives to securely grip the footway ramp during movement.

6.4.2 The footway ramp shall have no sharp edges or other protrusions that can injure hands, fingers etc. when lowering, lifting or transporting.

6.4.3 The footway ramp shall be light enough to be safely transported, moved and fixed by a maximum of two operatives without manual handling problems that may cause back injuries, etc.

6.5 Markings

6.5.1 The date the ramp was produced shall be clearly visible.

6.5.2 The markings on the ramp shall have lettering height between 25 to 40mm and shall include:-

- National Grid Gas (or Contractor's Name) and Manufacturer's Name.
- Month and Year of Manufacture.
- Safe Working Load (e.g. max. 250kg).

7. ROAD PLATES

Road Plates are used to bridge excavations in order to open the carriageway to vehicular traffic e.g. during traffic sensitive periods or at night or weekends. They shall only be used as a temporary measure to bridge an excavation in the carriageway or in any other location (as per ACOP).

The National Grid Gas Specification for a road plate is as follows (example shown in Appendix B):-

7.1 Application

7.1.1 The road plate shall have a means of securely fixing them to the road surface (as per ACOP).

7.1.2 The road plate (of whatever approved material) shall have the means within the design to enable the road plate to encompass a range of possible fixings such as large screws & rawlplugs, rawlbolts, dowel pins, etc. To avoid trip factors the holes in plates shall be countersunk for the recommended fixing methods that need to be used dependent on the type and quality of road surface.

7.1.3 For steel plates it is recommended that steel plates be a minimum of:-

- ½" or 13mm thick for light vehicular traffic (or domestic situations) up to a maximum trench width of 0.5m.
- ¾" or 19mm thick for heavy vehicular traffic or works in the main carriageway (or non-domestic situations) up to a maximum trench width of 1.0m.
- trench widths over 1m will need design considerations by experts such as Structural Engineers or specialist contracting firms (obtain advice from the supervisor/ manager).

7.1.4 Steel Road Plates shall consider the safe lifting and movement factors in their design such as lifting eyes.

7.1.5 Their installation shall not present a hazard to cyclists or motorcyclists (as per ACOP).

7.2 Strength

7.2.1 Road plates of any National Grid Gas approved material shall be of a thickness capable of withstanding loads commensurate with their location in the carriageway.

7.2.2 Road plates shall be capable of withstanding a vertically applied "accidental" wheel load of 100kN without deforming more than 2.5% of the trench width.

- 7.2.3** Fixings such as steel dowels or pins should be designed to resist a horizontal load of 50kN (derived from BD 37/88). Further information from fixing suppliers such as Hilti & Screwfix.
- 7.2.4** Able to withstand fatigue from cyclic loading for at least 2 years without failure in normal use.

7.3 Construction & Materials

- 7.3.1** The road plate shall be manufactured from a suitable material which is fit-for-purpose and approved by National Grid Gas such as mild steel (grade 43 to BS449), ductile iron or composite fibres (when National Grid Gas approved).
- 7.3.2** The road plate shall have an appropriate skid-resistant upper surface (as per ACOP). That is, a skid resistance equivalent to that of the existing carriageway (reference shall be made in this regard to the NRSWA 1991 Specification for Reinstatement of Openings in the Highway, 2nd. Edition, Section S2.6). This is best achieved on steel road plates by the application of proprietary anti-skid paints/ coatings.
- 7.3.3** Road plates shall be resistant to petroleum-based products such as petrol, diesel and road salt.

7.4 Handling Characteristics

- 7.4.1** The road plate shall be able to be placed, lifted, handled and removed safely.
- 7.4.2** Steel road plates are too heavy to be lifted manually. Appropriate lifting arrangements will need to be used. To allow the safe attachment of suitable lifting shackles to the road plate, lifting eyes need to be incorporated into the plate. These shall be designed at an appropriate distance in from each edge of the steel plate to allow for safe lifting and prevent the lifting accessory tearing through plate edge due to weight of plate. The suggested minimum distance is 50mm from plate edge for ½" and ¾" steel plates. These lifting eyes shall be designed for required lifting accessory such as hook shackles with safety catches and there shall be one eye at least on every plate corner to allow for plate vertical & horizontal movements.
- 7.4.3** The road plate shall have no sharp edges or other protrusions that can injure hands, fingers etc. when lowering, lifting or transporting using correct lifting equipment.

7.5 Markings

- 7.5.1** The date the road plate was produced shall be clearly visible and the maximum size of excavation and vehicle weight the road plate is suitable for shall also be clearly visible/ labelled.
- 7.5.2** The markings on the plate shall have lettering height between 25 to 40mm and include:-
- National Grid Gas, (or Contractor's Name), Month and Year of Manufacture.
 - Weight and Safe Working Load (e.g. ¾" plate wt 470kg and max load 30 tonne).

8. VARIANTS

A contracted supplier/ manufacturer/ hire company shall only propose variants to this specification where the text indicates that variants would be considered by National Grid Gas.

9. CERTIFICATION

All certified records, appertaining to the materials used and to the inspection and testing of all components manufactured, shall be retained by the contracted supplier/ manufacturer/ hire company for one year from the date of purchase or termination of hire. Such records shall be available at the contracted supplier/ manufacturer/ hire company premises for inspection.

10. COMPLIANCE

Dispatch by the contracted supplier/ manufacturer/ hire company of the manufactured item shall signify to National Grid Gas that such items have been manufactured, inspected and tested in compliance with the requirements of this specification.

ENDNOTE**Comments**

Comments and queries regarding the technical content of this document should be directed to:

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