



HIGHWAY AUTHORITIES & UTILITIES COMMITTEE

Advice Note No. 2018/01

Title

**SPECIFICATION AND OPERATIONAL REQUIREMENTS FOR FOOTWAY BOARDS,
DRIVEWAY BOARDS, FOOTWAY RAMPS AND ROAD PLATES**

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SECTION A - SPECIFICATION FOR FOOTWAY BOARDS, DRIVEWAY BOARDS, FOOTWAY RAMPS AND ROAD PLATES

BACKGROUND

In 2013, the Department for Transport (DfT) revised *Safety at Street Works and Road Works* (the 'Red Book'). However, apart from DfT's Traffic Advisory Leaflet 6/14 *Using road plates at road works*, there is little detailed guidance on bridging excavations. To help address this, the technical specification T/SP/E/42 (originally a Transco specification) has been reviewed and expanded upon. It includes requirements and guidance for temporarily bridging excavations to maintain pedestrian and vehicular access using ramps, boards and plates. It complements the red book.

SCOPE

This section contains the performance requirements for footway boards, footway ramps, driveway boards and road plates.

REQUIREMENTS

A1 Common requirements

The following requirements are common to all of the products covered by this specification.

A1.1 Construction & design

All products should:

- be made from materials that will not distort over time (with or without loading) and be structurally unaffected by prolonged exposure to petrol, diesel, road salt or sunlight;
- be sufficiently robust and durable to withstand normal use including storage, handling and transportation;
- be stable in normal use so that they do not pose a hazard to pedestrians or vehicle users;
- have a skid/slip-resistant upper surface and meet BS 7976 slip test requirements;
- be able to be conveniently and securely handled in wet, muddy or freezing conditions;
- have no sharp edges or other protrusions that could cause injury during normal handling operations; and
- facilitate compliance with HSE guidance leaflet INDG143 on manual handling at work (excludes machine lift only products).

A1.2 Markings

All products should be permanently marked using a letter height of 25 to 40mm. The markings should show the:

- manufacturer's name and contact details;
- month and year of manufacture;
- weight of product and lifting requirements, e.g. one or two man lift, machine lift only; and
- safe working load in kg or tonnes, as appropriate (except for temporary covers).

Individual companies may require an identifier included on the product.

A2 Common requirements - footway boards, footway ramps and driveway boards only

Footway boards, footway ramps and driveway boards should incorporate fixing methods that ensure the product stays securely and safely in place in normal use. Fixing methods vary but essentially, once these components have been installed, they should stay securely and safely in place until they need to be removed. The decision as to what is required will therefore depend on the site-specific conditions and risks.

All such elements must be stable in normal use so that they do not pose a hazard to people passing over them, either on foot or using a vehicle. Normal use would also include accidental actions that might cause displacement (e.g. kicking, heavy braking). If vandalism or theft can be reasonably foreseen, then additional precautions will be necessary.

Ultimately, it is for competent personnel on site to satisfy themselves that the fixing methods used are appropriate for any given site.

Fixing methods may be mechanical or they could comprise a suitable non-slide edging material between the product and the road surface. However all boards/ramps should incorporate holes for mechanical fixing in the event that the site specific risk assessment (SSRA) requires this method.

To avoid creating a trip hazard, these products should have no vertical steps in the direction of travel greater than 6mm.

Deflection testing should be undertaken using a 250mm diameter circular pad loaded in the centre of the product. The product should not be secured during the test.

A3 Footway boards

Footway boards should only be used on footways, cycle tracks and verges or to provide occasional light vehicle (1) only access to domestic premises. The application footway boards for vehicle access should always be subject to a SSRA



A3.1 Performance criteria

When loaded at the centre, footway boards should be capable of supporting a working load of 400kg with a deflection of no more than 5% of the maximum allowable span over the design life of the board. The ultimate failure load should not be less than 800kg.

A3.2 Construction & design

See paragraph A1.1

(1) Based on the loading provided in A3.1 a light vehicle in these circumstances is considered to be 1600kg or less which is equivalent to a typical family car.

A3.3 Markings

In addition to the requirements of paragraph A1.2, the board markings should:

- indicate the maximum width of trench in each direction.
- include the legend “Not for Use in the Carriageway” or “Not for Road Use”

A4 Footway ramps

Footway ramps are used to allow pedestrians, mobility scooter and wheelchairs users, and people with pushchairs to negotiate kerbs or other changes in level.

A4.1 Performance criteria

When loaded at the centre, the ramp should be capable of supporting a working load of 250kg with a deflection of no more than 5% of the maximum allowable span over the design life of the ramp. The ultimate failure load should not be less than 500kg.

A4.2 Construction & design

In addition to the requirements of paragraph A1.1, ramps should:

- be fixed in position and at least 1 metre wide (1.2 metre wide if possible);
- be constructed from materials strong enough to support pedestrians and mobility scooter users;
- have edging to prevent wheelchairs, etc. slipping over the edge;
- slope gently enough to enable people using manual wheelchairs to mount the kerb without undue difficulty.
- allow for rain water to run along the gutter.

A4.3 Markings

See *paragraph A1.2*.

A5 Residential Driveway boards

Residential driveways boards can be used to maintain vehicle access to premises during excavation works.



A5.1 Performance criteria

When loaded at the centre, driveway boards should be capable of supporting a working load of 875kg with a deflection of no more than 5% of the maximum allowable span over the design life of the board. The ultimate failure load should not be less than 1750kg.

A5.2 Construction & design

See *paragraph A1.1*.

A5.3 Markings

In addition to the requirements of paragraph A1.2, the board markings should:

- indicate the maximum width of trench in each direction.
- include the legend “Not for Use in the Carriageway” or “Not for Road Use”

A6 Temporary covers over excavations

Where an unattended site contains an open excavation within 2 metres of a temporary or permanent footway, consideration should be given to either;

- putting temporary covers over the excavation; or
- providing an enhanced barrier around the excavation;

unless a site specific risk assessment shows that such additional protection is not justified.

Temporary covers should be capable of preventing a person from falling into the excavation. These covers should resist being displaced by wind. As such, they might require ballasting or some other method for fixing them in place.

A6.1 Construction & design

There is no currently available specification for temporary covers or fall arrest systems. Current practice is to use a board or plate to provide temporary cover.

Any innovation in this area should ensure that there is robust data and testing to demonstrate fitness for purpose of the system.

A temporary cover is not intended to allow access over an excavation but it should be capable of preventing pedestrians or wheelchair users etc., from falling into an excavation should they accidentally breach the barrier system. These covers should resist being displaced by wind and as such, might require ballasting or other methods for fixing them in place.

A6.2 Markings

Any system developed should include markings to:

- indicate the maximum span in each direction
- include the legend “Not designed for trafficking - fall arrest only”

A7 Road plates

Road Plates are used to temporarily bridge excavations in order to open the carriageway to vehicular traffic, typically during traffic sensitive periods or at night/weekends. For information on performance, construction and design of road plates, reference should be made to DfT Traffic Advisory Leaflet 6/14 *Using road plates at road works*, available at:

<https://www.gov.uk/government/publications/using-road-plates-tal-614>



A7.1 Markings

In addition to the requirements of paragraph A2.2, the markings on the road plate should include the maximum size of excavation for the plate.

A8 Certification

All certified records appertaining to the materials used (e.g. steel, composite) and the inspection and testing of all manufactured components should be retained by the supplier/manufacturer/hire company for at least one year from the date of purchase or termination of hire. Such records should be available at the supplier/manufacturer/hire company premises for inspection or be provided with the product at point of hire/purchase.

A9 Compliance

Suppliers, manufacturers and hire companies providing road plates should notify the user that they have been manufactured, inspected and tested in accordance with the requirements of this specification.

SECTION B - OPERATIONAL REQUIREMENTS FOR FOOTWAY BOARDS, DRIVEWAY BOARDS, FOOTWAY RAMPS AND ROAD PLATES

SCOPE

This section contains the operational requirements for the use of footway boards, driveway boards, footway ramps and road plates.

REQUIREMENTS

B1 Related documents

Reference	Title
Department for Transport	Safety At Street Works And Road Works – A Code Of Practice
Department for Transport TAL 6/14	Using road plates at road works

B2 Footway boards, driveway boards and footway ramps

B2.1 General

All boards and ramps should comply with the specification (section A).

Apparatus	Definition
Footway boards	Footway boards should only be used to maintain access along footways, footpaths, cycle tracks and verges, pedestrian access to premises or for occasional light vehicle access to domestic premises.
Footway ramps	Footway ramps are used to allow pedestrians, mobility scooters, wheelchairs and pushchairs, etc., to negotiate kerbs or other changes in level.
Driveway boards	Residential driveways boards can be used to maintain vehicle access to premises during excavation works. They should never be used in the running lanes of a carriageway.
Temporary covers	Although not covered in this guidance, temporary covers may be required where an unattended site contains an open excavation within 2 metres of a temporary or permanent footway.
Road plates	Road Plates are used to temporarily bridge excavations in order to open the carriageway to vehicular traffic, typically during traffic sensitive periods or at night/weekends

Footway boards, driveway boards and footway ramps should be used in accordance with the manufacturer's instructions particularly with regard to fixing methods, maximum trench width and allowable load.

Boards must be long enough to provide the necessary support beyond the edges of an excavation (this should be clearly indicated on the board).

Where boards or ramps are placed adjacent to an open excavation, the excavation must be appropriately guarded. Ramps need to be sited so that there is sufficient room for wheelchair and mobility scooter users to negotiate them at the top and bottom of the level change.



In accordance with a site specific risk assessment (SSRA), appropriate safety clothing should be worn when placing, securing or moving boards and ramps. This may include safety footwear, gloves & high visibility clothing. Works should be designed to ensure that no person is required to work underneath a footway board, driveway board or road plate.

Footway boards used for bridging excavations:

- must extend the full width of any temporary footway;
- must be strong enough to support pedestrians and mobility scooters and, where light vehicle access is needed, the weight of those vehicles;
- must be made from material that is unlikely to become distorted;
- must cover the whole width of any vehicle crossover;
- must have chamfered edges to prevent tripping;
- should have a slip-resistant surface;
- must be rigidly fixed with sufficient length on either side of the excavation to provide the necessary support. On non-bitumastic surfaces, the use of bitumastic material should be avoided, as the surfacing will be affected after works are completed;
- must only be used where the sides of the excavation under the boards are stable or suitably supported; and
- must be fenced to prevent falls where the edges of the boards are adjacent to an excavation.

Driveway boards should cover the full width of any vehicle crossover. Where footway or driveway boards are interconnected to accommodate a long excavation, there should be no gap between them and they should be properly connected. Manufacturer's instructions for interconnecting boards or ramps should be followed where applicable.

Footway boards and driveway boards must not be used in the running carriageway in any circumstances (including cul-de-sacs and other low trafficked locations) they are not designed for road traffic loading.

B2.2 Storage

Boards and ramps should be stored in designated hard-surfaced areas clear of all other plant & equipment with easy access, especially where mechanical lifting equipment is needed. Manufacturer's guidance for storage should also be followed.

All damaged or broken boards should be kept separate from usable stock and recycled as soon as practicable to avoid incidental use.

B2.3 Fixing

It is important that boards and ramps stay securely in place until they need to be removed. They must also remain stable so that they do not pose a hazard to people or vehicles passing over them. There should be no trips along any edge used by pedestrians. The measures required to satisfy these requirements will depend on the type and volume of traffic being accommodated, the type of boards/ramps being used (e.g. some incorporate effective anti-slip technology) and the working environment.

If vandalism or theft can be reasonably foreseen, additional precautions may be necessary. A SSRA should determine whether fixings are required and which method will be appropriate for the site circumstances. The following factors should be included in the SSRA:

- Weather
- Gradient
- Type of surfacing material
- Volume of people
- Potential vulnerable people, e.g. blind, elderly, etc.
- Volume and type of vehicles (incl. mobility scooters, wheelchairs, etc.)
- Speed and weight of vehicles
- Potential for vandalism

Where boards or ramps are physically fixed, this should be done in accordance with the manufacturer's or the supplier's recommendations. Appropriate fixings (e.g. screws, rawlplugs, raw bolts, Hilti-nails – subject to risk assessment) should be used. When using screws or bolts a plant location survey must be undertaken prior to penetrating the surface material. On completion of the works, drill holes must be permanently reinstated using appropriate materials. Alternative fixing methods might include:

- using a mastic material as recommended by the manufacturer/supplier;
- using a material on the underside of the board or ramp that prevents it from sliding on the surface where it is placed;
- using a heavy rubberised (self-stabilising board);
- using a self-securing board, i.e. one designed to secure against the inside of the trench underneath the board;
- fitting it into a suitable recess in the footway/kerb.

B2.4 Inspection and maintenance

A competent person responsible for the site should ensure that boards and ramps are regularly inspected for damage or movement:

- before work starts on site;

- regularly during the works; and
- before leaving the site each day.

A site specific risk assessment should detail the requirements for monitoring and inspecting boards and ramps on unattended sites. Inspections should take into account signs of fatigue, damage or cracking, the condition of the slip-resistant surface, and that the boards or ramps are adequately fixed so that they do not become displaced or loose.

Any damaged boards or ramps must not be used and should be removed from site as soon as is practicable. If there is any doubt as to the level of acceptable damage, the manufacturer should be consulted.

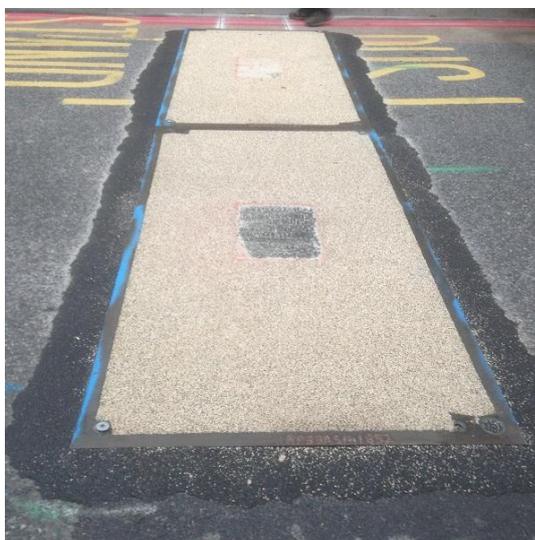
B3 Road plates

B3.1 General

This section should be read in conjunction with the DfT's Transport Advisory Leaflet 6/14 *Using road plates at road works*, as amended November 2016. The leaflet covers a range of road plate types.

Road Plates are mostly used to bridge excavations to keep the carriageway open to vehicular traffic. They are particularly useful for maintaining traffic flows during traffic sensitive periods, overnight or at weekends. They should only be used as a temporary measure. All road plates should comply with the *Specification of performance requirements for footway boards, footway ramps, driveway boards and road plates*.

In general, road plates should be used for the shortest practicable period. They should be monitored as recommended by the manufacturer/supplier or according to a site specific risk assessment.



B3.2 Road plate selection

Table 1 is taken from TAL 6/14 and provides some guidance on steel plate sizes. For situations that are not covered here or where there is any uncertainty over the appropriate plate size, advice should be sought from the supervisor/manager or supplier/manufacturer/hire company.

Table 1 - Typical minimum plate thicknesses in mm

Plate width (m)	Free span (m)										
	0.7	0.8	0.9	1.0	1.2	1.4	1.6	1.8	2.0	2.4	2.8
1.0	22	24	25	27	30	32	35	37	40	43	47
1.25	20	21	23	24	27	29	31	33	35	39	42

Note that composite road plates complying with Specification of performance requirements for footway boards, footway ramps, driveway boards and road plates are marked with the maximum trench width and the maximum centre point loading in tonnes or kg.

B3.3 Risk assessment

A site specific risk assessment should be undertaken by a competent person to determine whether the trench sides are inherently stable or require additional support, taking into account the type of road plate, the method of fixing and the volume and type of traffic. The assessment should identify monitoring and inspection requirements for attended and unattended periods and it should cover lifting and placing operations. Special consideration should be given to any lifting operations over exposed plant and pipework. In all cases measures to protect plant from damage in the event of lifting equipment failure should be considered and documented as applicable.

Traffic management arrangements required due to the use of the plates must be included in the SSRA.

B3.4 Storage

Steel road plates may be stored flat in small stacks separated by suitable wood supports to provide sufficient clearance for attaching slings, etc. Stacking should, where possible, be limited to 3 plates high to avoid unnecessary handling or movement of the plates. Proprietary road plate sections should be stored, where possible, in approved storage containers.

Damaged plates or those with worn anti-skid surfaces should be stored separate from usable stock and secured against use.

B3.5 Lifting and handling

Plain steel road plates can be very heavy (for example, the smallest plate in Table 1 weighs around 200 kg) so in most cases they will need to be lifted and positioned by mechanical means. Road plates should be provided with suitable lifting points to allow them to be attached to lifting plant in a safe and stable manner. Owing to the difficulties in controlling large plates, particularly in windy conditions, it may be necessary to increase the size of the safety zone to eliminate the risk of plates swinging over live carriageways or footways.

Manual handling of steel plates may be necessary to obtain access to plate lifting points, for example. Where this is necessary, it should be carried out by a minimum of 2 operatives working together; using approved chisel-ended steel lever bars of sufficient length to lift the load.

Operators must not use picks, shovels or spades for lifting road plates. Wooden blocks or wedges should be placed below plates as appropriate to prevent them from slipping during these operations. Under no circumstances should limbs, fingers or hands be positioned beneath an unsecured plate for longer than is absolutely necessary. Where this is required to secure lifting equipment, the operation should be planned in such a way as to minimise the risk of crushing.

Loading, unloading and placement of steel road plates is covered by the Lifting Operations and Lifting Equipment Regulations 1998 (LOLER), which requires all such operations to be planned and carried out in a safe manner using sufficiently strong, stable and suitable lifting equipment. See the Health & Safety Executive website (<http://www.hse.gov.uk/pubns/indg290.htm> and /or <http://www.hse.gov.uk/msd/manualhandling.htm>) for further advice

B3.6 Fixing

Road plates can be recessed into the road surface or surface mounted with ramped edges. They must be securely fixed to:

- prevent horizontal movement under braking and acceleration or from impact loading on protruding edges or ramps;
- resist uplift caused by dynamic rebound and flexure of the plates under wheel loading;
- prevent rocking; and
- withstand acts of vandalism or attempted theft.

Any raised edge should be ramped with suitable material to avoid creating a hazard for vehicles or pedestrians.

Although it is possible to create a plate recess using hand tools, it is likely to be quicker and neater to use a mini planer. Forming a recess using this method tends to reduce the amount of bedding material required as less virgin material is disturbed.

Steel plates should be prevented from rocking or rattling during use. This can be achieved using a suitable bedding material that can resist movement or settlement during use such as a 10 to 20 mm thick layer of 6 to 10 mm bituminous material. The bedding material should be at least 200 mm wide, starting at least 100 mm in from the edges of the trench to avoid over loading the walls. Unbound material is not suitable for the purpose of bedding a road plate.

Chemical and expanding type fixings are widely available for attaching plates securely to concrete substrates. However, most plate installations are in fully flexible pavements and the effectiveness of the fixings depends more on the condition of the pavement than the fixings themselves. A road plate installation will tend to be more stable the less its performance depends on the fixings, and recessed plates perform well in this respect.

Generally, fixings should be placed as far away from the edge of the trench as possible. This helps reduce the effect of forces transmitted through the fixings (e.g. shear, pull-out) and particularly in the case of expanding bolts, the effect of forces created by the fixings themselves.

On transverse trenches, road plates are well aligned to take dynamic loads. On longitudinal trenches, the load travels across the individual plates and the potential for them to rock is greater. This is more likely to be a problem with smaller plates - load sharing devices that limit rocking may be required.

Other proprietary systems, e.g. composite, must be fixed in accordance with the manufacturer's recommendations.

Any open excavation adjacent to a road plate must be signed and guarded appropriately.

B3.7 Inspection and maintenance

Road plates should be inspected prior to installation, during use and on removal. The SSRA will determine the frequency and the potential need for additional inspections.

The inspection should include plate condition, checking for cracking, yielding, corrosion or damage, and that the anti-skid is in good condition. Any items that fail inspection must be replaced, repaired or removed from use.

If there is any doubt as to the level of acceptable damage, advice from the manufacturer should be sought.

B3.8 Transportation

Plates must be fully secured during transport to avoid any movement. They should not be placed on top of loose materials and they should always be located flat on the bed of a vehicle unless the vehicle has been purposely adapted otherwise.

Special attention must be given to obtaining easy access to lifting points during loading/unloading to avoid the risk of trapping limbs, fingers or hands. Suitably robust wood spacing blocks must be used if stacking is employed.

End