Transport Malta

TRENCH EXCAVATION AND REINSTATEMENT GUIDELINES

ISSUE 3 (March 2016)

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1. OVERVIEW

1.1. SCOPE AND OBJECTIVE

1.1.1. This guide provides a basic description of the methods and procedure to be adopted during the excavation and reinstatement of all road intervention works.

1.1.2. The objective of this guide is to present a better understanding to street work operatives of how a reinstatement should be undertaken in order to protect the existing road structure, whilst also illustrating how works should be completed **to a standard that ensures a long service life**.

1.1.3. While the methods and procedures listed in this guide take into consideration a number of scenarios, not all possible variations can be covered. If in doubt of any method or procedure listed in this document, always consult with the Authority **before actually starting the intervention works**.

2. DEFINITIONS

2.1. **Effective Length 'L_{Eff}':** Length of proposed trench parallel to the road centre line (refer to **drawing TRC 03**).

2.2. **Depth of Trench 'D':** Proposed depth of trench to be excavated (for overlap dimensions, depth to be taken until rock bed). (refer to **drawing TRG 03 / TRG 04**).

2.3. **Reinstatement Overlap 'r':** Distance of reinstatement overlap between the initial saw cut line and the extremity of the final reinstatement (refer to **drawing TRG 03 / TRG 04**).

2.4. **Buffer Distance 'b':** Distance between final reinstatement cut line, and taken perpendicularly to any existing kerb / footpath / trench line / edge / joint (refer to **drawing TRG 03 / TRG 04 / TRG 05**).

2.5. **Transverse Overlap:** reinstatement overlaps having the width extending perpendicularly (across the road) to the road centre line.

2.6. **Longitudinal Overlap:** reinstatement overlaps having the width extending parallel (along the road) to the road centre line.

2.7. **Existing centre joint / line / trench / edge:** Any existing building lines / kerbs / footpaths / line markings / road infrastructure / road equipment / street furniture / concrete joints / asphalt joints / existing trenches covered by a valid road works permit.

3. GENERAL CONDITIONS

3.1. GENERAL CONDITIONS FOR ALL VALID ROAD WORKS PERMITS

3.1.1. All road works being carried out on a public road shall be covered by a valid road works permit in accordance with the subsidiary legislation S.L. 499.57 – New Roads and Road Works Regulations. (Further information on submission of applications for road works may be found in the 'Guidelines to road permit system (RPS) online permit application').

3.1.2. Prior to application of the permit to carry out works, the contractor shall carry out all the necessary site investigations to ensure that all the information submitted in the application is correct and reliable. In the case that this is done by the project owner, the contractor shall be deemed to have verified the validity and correctness of such investigation upon submission of the application.

3.1.3. The road works permit shall be granted only for the proposed works as submitted through the road works permit application including attached documents and drawings, and is not to be taken as verification by Transport Malta of the contents of the information, including attached documents and drawings as submitted or of the legality of the work itself.

3.1.4. The Authority may reserve the right to take any enforcement action applicable by law for any illegal works carried out.

3.1.5. In the event that any information, including attached documents and drawings submitted through the permit application is found to be fraudulent, false, misleading, incorrect, or does not correspond with the works carried out on site, or that the proposed works as approved by the road works permit are modified without the Authority's permission, the permit issued shall be considered null and void, and the contractor shall be liable to any enforcement action as per subsidiary legislation S.L. 499.57 – New Roads and Road Works Regulations.

3.1.6. The granting of the permit shall be issued safeguarding third party rights, and subject to any other necessary licenses or permits as required by any other law.

3.1.7. All works carried out under a road works permit shall comply with the provisions set in the RID 'Specifications for Road Works' covered under subsidiary legislation S.L. 499.57 – New Roads and Road Works Regulations and in accordance to the road works permit conditions. In case of discrepancy between the two, the latter shall prevail.

3.1.8. The contractor shall be responsible to inform the Authority as soon as any changes are discovered in the ground conditions that will entail a change in extents of the proposed intervention and/or nature of works.

3.1.9. The contractor and/or project owner shall be responsible to inform the Authority at least three (3) days prior to the issuing of the road intervention works permit to request any adjustment / revision from the trench excavation and reinstatement conditions stated in permit on the basis of sound technical arguments. The Authority may accept or refuse the request from the contractor and/or project owner after review of such request.

3.1.10. The contractor and/or project owner shall be responsible to review and understand all the trench excavation and reinstatement conditions stipulated in the valid road works permit and shall be also responsible to review all the conditions set by all stakeholders involved during the feedback period prior to the commencement of works.

3.1.11. Upon commencement of any road intervention works carried out under a valid road works permit, the contractor and project owner shall be responsible to abide by all trench excavations reinstatement conditions stated in the permit issued.

3.1.12. Any changes to ongoing permits shall be covered through an addendum or a new application, as directed by the Authority. Any changes without the Authority's approval shall be dealt with in accordance to article 3.1.4.

3.1.13. The Authority may reserve the right, at any time before or after works related to the permit have commenced, to modify as deemed necessary, any trench permit reinstatement conditions issued for this permit through an Addendum to Permit.

3.1.14. The Authority may reserve the right, at any time before or after works related to the permit have commenced, to instruct the contractor to perform any tests through an approved independent laboratory and submit test results as deemed necessary.

3.1.15. The Authority may reserve the right, at any time before or after works related to the permit have commenced, to hold or withdraw the granted permit. In such cases, the contractor and project owner are bound to render the site safe and to execute all the necessary interventions, including reinstatement, to restore the site to its original conditions.

3.2. ASSESSING THE EXISTING ROAD CONDITION

3.2.1. For proposed trenches with **Effective Length 'L_{Eff}' > 20 metres (*)**:

Intervention Category 1: Less than 30% of existing trenches and/or defects within the Effective Length 'L_{Eff}'.

Intervention Category 2: 30% or more having existing trenches and/or defects within the Effective Length 'L_{Eff}'.

(*) For long trenches, the assessment of the road category shall be carried out in stretches of 100 metres).

3.2.2. For proposed trenches with **Effective Length 'L_{Eff}' < 20 metres**:

Part 1:

Take 30 metres **before** (to the left of) the Effective Length 'L_{Eff}' of the trench;

Intervention Category 1: Less than 30% of existing trenches and/or defects within the Effective Length 'L_{Eff}' and 30 metres.

Intervention Category 2: 30% or more having existing trenches and/or defects within the Effective Length 'L_{Eff}' and 30 metres.

Part 2:

Take 30 metres **after** (to the right of) the Effective Length 'L_{Eff}' of the trench;

Intervention Category 1: Less than 30% of existing trenches and/or defects within the Effective Length 'L_{Eff}' and 30 metres.

Intervention Category 2: 30% or more having existing trenches and/or defects within the Effective Length 'L_{Eff}' and 30 metres.

Part 3:

If **at least one side is considered as an Intervention Category 1**, the proposed trench is to be considered as being **Intervention Category 1.**

If **both sides are considered as an Intervention Category 2**, the proposed trench is to be considered as being an **Intervention Category 2**.

3.3. TRENCH PREPARATION AND EXCAVATION

3.3.1. Prior to the excavation of trenches covered by a road works permit, all surface asphalt layers shall be adequately neatly cut using an asphalt rotary saw and squared off, with no acute angles (refer to **drawing TRG 03 / 04**).

3.3.2. Any areas adjacent to the initial saw cut which crack or settle due to slumping or collapse of material, or if any edges of the pavement are lifted during excavation, an additional saw cut outside the original line of excavation and outside the area of damage shall be required (refer to **drawing TRG 04**).

3.3.3. The contractor shall be responsible to ensure that all temporary shoring and other equipment required to safeguard the integrity and the soundness of the road structure during works covered by this permit, is provided where necessary.

3.3.4. The contractor shall be responsible to ensure that all equipment including machinery used during works covered by a road works permit are well maintained and that such equipment are assembled and used in accordance with its intended use according to the trade requirements.

3.3.5. The contractor and project owner shall be responsible to ensure that all utility plants being installed under a works permit are at an adequate level beneath the official finished road level, not to hinder any future road construction or maintenance works, and in accordance with the provisions set in the RID 'Specifications for Road Works', covered under subsidiary legislation S.L. 499.57 – New Roads and Road Works Regulations.

3.3.6. For road intervention works being carried out in roads that have not been asphalted, the contractor and project owner shall be responsible to obtain all required information concerning finished road levels issued by the relevant authorities.

3.3.7. The contractor is responsible for all the existing street furniture that needs to be removed due to the road intervention works, and shall be adequately stored for future reinstatement upon completion of works, and that storage or exposure of material used for works shall not affect the state and performance of such street furniture.

3.3.8. The contractor shall be responsible to ensure that all unused material is carted away from site to approved dumping sites, and that the work site is well maintained during all phases of work.

3.3.9. The contractor is responsible to ensure that for all materials which are adequately stored on site, the storage or exposure of material used for works shall not affect the performance characteristics of such material.

3.3.10. The contractor shall be responsible to ensure that all works being carried out are in accordance with the provisions set in the relevant subsidiary legislations covering Chapter 504 – Environment and Development Planning Act, and Chapter 424 - Occupational Health and Safety Authority Act.

3.4. TRENCH SURFACE REINSTATEMENT

3.4.1. For all categories (**Refer to drawings TRG 02 / 03 / 04 / 05**);

For reinstatement having one bituminous bound layer;

Reinstatement Overlap 'r' = 0.30m on any side (for the first 2 metres depth) + 0.30m for every additional metre + distance of collapse / cracks / caving-in.

Depth to be measured until solid rock is found.
For reinstatement having more than one bituminous bound layer, the reinstatement shall be **staggered** such that;

Reinstatement Overlap 'r' = 0.15m on any side for every layer (for the fisrt 2 metres depth) + 0.30m for every additional metre (base course only) + distance of collapse / cracks / caving-in.

Depth to be measured until solid rock is found

Reinstatement overlaps are to be calculated according to the largest depth within stretches of works not longer than 20 metres.

All reinstatement shall be adequately sealed using adequate hot bitumen based sealing material.

If the **Buffer Distance 'b'** between the final reinstatement saw cut line and any existing kerb / trench line / edge / joint is less than 0.5 metres, the reinstatement shall extend perpendicular to the nearest kerb / trench line / edge /joint, with no acute angles.

Should there be no existing or proposed kerb / footpath, reinstatement works shall cover up to the edge of the building line / boundary wall as necessary.

3.4.2. For Intervention Category 1: cases 4 / 5 / 6 (Refer to **drawings TRG 06 / 07 / 08 / 09**)

The transverse (across the road) overlaps for the surface asphalt layer are to extend to the nearest parking bay width / centre of wheel path /asphalt joint / centre line / edge / kerb.

The longitudinal (along the road) overlaps for the surface asphalt layer are to extend in a rectangular and orthogonal fashion, with no acute angles.

3.5. REINSTATEMENT IN PAVED AREAS / SOFT AREAS / FOOTPATHS

3.5.1. All trench reinstatement works being carried out in paved areas / soft areas / footpaths shall match the existing paving on site including kerbs, gutters, concrete flags and concrete surfaces, paving blocks and any other type of finish.

3.6. REINSTATEMENT OF STREET FURNITURE AND LINE MARKINGS

3.6.1. The contractor is responsible to ensure that all street furniture and/or line markings removed are reinstalled to their original state upon completion of reinstatement works.

4. PERMIT REINSTATEMENT CONDITIONS (BASIC TEMPLATE FOR ISSUED PERMIT)

4.1. GENERAL CONDITIONS

In addition to the provisions set in Section 3 of the 'Trench excavation and Reinstatement Guidelines' – Issue 3 (March 2016), the following specific conditions apply for this road works permit;

4.2. TRENCH EXCAVATION AND SURFACE REINSTATEMENT CONDITIONS

[EITHER - for roads classified as INTERVENTION CATERGORY 2]

All works carried out under this road works permit shall comply with the provisions of drawings **[TRG 01 / 02 / 03 / 04 / 05].**

[OR - for roads classified as INTERVENTION CATERGORY 1]

All works carried out under this road works permit shall comply with the provisions of drawings **[TRG 01 / 02 / 06 / 07 / 08 / 09].**

4.3. TRENCH INFILL REINSTATEMENT (PIPE SURROUND)

All infilling of trench for the pipe surround shall be backfilled with a **granular or concrete or soil binder mixture** as specified in writing by the service owner.

4.4. TRENCH BACKFILLING REINSTATEMENT

[EITHER – for all construction classes]

Trenches being backfilled with a **concrete or soil binder mixture** shall be reinstated with a 28 day compressive strength of **C5 N/mm^2 [OR] C7.5 N/mm^2**,.

Note:

For specific and urgent cases, the Transport Malta engineer may specify higher grade mixes and specific additives deemed necessary for the execution of works

[OR - for roads falling under construction classes HD – IV]

Trenches being backfilled with **granular material** shall be reinstated to achieve a plate bearing capacity of **120 MN/m^2** in accordance with Chart 1 – Standardisation for pavements with asphalt surfacing of traffic areas, of the 'Specifications for Road Works'.

[OR - for roads falling under construction classes V-VI]

Trenches being backfilled with **granular material** shall be reinstated to achieve a plate bearing capacity of **100 MN/m^2** in accordance with Chart 1 – Standardisation for pavements with asphalt surfacing of traffic areas, of the 'Specifications for Road Works'.

4.5. TRENCH PAVEMENT REINSTATEMENT

[For roads having asphalt concrete surface layers]

All trenches excavated in asphalted roads shall be reinstated using the following layers;

Layer 1 (Granular): [Choose thickness and plate bearing capacities from Chart 1]

Approved **Type 1 sub-base,** thickness **[EITHER] 150mm [OR] 200mm** and having a plate bearing capacity of **[EITHER] 120MN/m^2 [OR] 150MN/m^2 [OR] 180MN/m^2** in accordance with Chart 1 – Standardisation for pavements with asphalt surfacing of traffic areas, of the Specifications for Road Works

[OR]

As the specified backfilling material as approved by the Transport Malta engineer.

[AND – choose layers as necessary]

Layer 2 (Asphalt Concrete):

Approved **Base course** mix, thickness **[xxx mm]**.

Layer 3 (Asphalt Concrete):

Approved **Binder course** mix, thickness **[xxx mm]**.

Layer 4 (Asphalt Concrete):

Approved **Wearing course** mix, thickness **[xxx mm]**.

Layer 4 (Asphalt Concrete):

Approved **Base-wearing course** mix, thickness **[xxx mm]**.

[For roads having concrete surface]

All trenches excavated in concrete roads shall be reinstated using minimum designed concrete grade **[Cxx]** having a thickness of **[xxx mm]**.**[Any necessary reinforcement or joint details to be specified here]**

[For un-formed / rural roads – to be dealt with case by case basis]

All trenches excavated in non-asphalted / un-formed roads shall be reinstated matching the existing type of finish.

4.6. OTHER SPECIFIC CONDITIONS

[Any specific condition to be listed here.]