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Transport Infrastructure Ireland

TII Publications



Requirements for Measuring and Pricing of Pavements

CC-RMP-00700
January 2019

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**Updates to TII Publications resulting in changes to
Requirements for Measuring and Pricing of Pavements CC-RMP-00700**

Date: January 2019

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Amendment Details:

Minor grammatical, punctuation and referencing errors amended throughout.

Feature 4 & 5 added to Group II, paragraph 4

Feature 4 & 5 added to Group VI, paragraph 8

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- (f) air entrainment;
- (g) spreading and compaction;
- (h) cutting back, saw cutting, cleaning, preparing and working on or up to existing surfaces and features;
- (i) edge support;
- (j) reinforcement (as CC-RMP-01700 paragraph 25);
- (k) waterproof and separation membranes;
- (l) chippings;
- (m) formwork (as CC-RMP-01700 paragraph 14);
- (n) making joints;
- (o) forming or sawing grooves, cleaning, grit blasting, priming, caulking, temporary and permanent sealing of joints;
- (p) longitudinal, expansion, contraction, warping and construction joint assemblies, including joint filler and crack inducers, tie and dowel bars, dowel bar cradles, caps and sheaths and inspection of dowel bars and corrosion protection to tie bars and coating to transverse reinforcement;
- (q) shaping to cambers, falls and crowns;
- (r) forming sockets, recesses, openings, and bays;
- (s) curing and protection;
- (t) protection and masking and unmasking of kerbs, drainage channels, chamber covers, gully gratings, expansion joints, and the like;
- (u) maintenance of surface;
- (v) taking measures to protect and maintain the pavement from deterioration by the use of constructional plant and the ingress of water and other materials;
- (w) anchorages including excavation and disposal, steel beams, ground beams and thickening of slab;
- (x) measures required for aftercare and opening the road to traffic;
- (y) protective system to steel beams (as CC-RMP-01900 paragraph 5);
- (z) microsurfacing, surface dressing, high friction surfacing and bond coat forming integral parts of the pavement;
- (aa) filler;
- (bb) reclaimed asphalt;
- (cc) admixtures and additives;
- (dd) providing for areas to be kept free of pre-coated chippings;
- (ee) saw cutting and sealing bituminous overlays;
- (ff) bond-breaker tape;
- (gg) treatment to faces of cold upstanding edges prior to laying hot bituminous mixtures;
- (hh) applying sealant to the whole of any freestanding edge on the outside of the finished pavement;
- (ii) sealant to the top surface of base and binder course joints;

- (jj) cold milling, pulverisation and production of in situ Low Energy Bound Mixtures.

Regulating Course

- Unit** **10** The units of measurement shall be:
- (i) bituminous regulating material tonne or cubic metre.
 - (ii) cement bound regulating material cubic metre.

- Measurement** **11** The measurement of bituminous regulating material by tonne shall be calculated from the tonnage of material certified by the Employer's Representative multiplied by the factor stated for the particular aggregate used.

The tonnage certified by the Employer's Representative shall be only that material included on delivery tickets which is incorporated in the Works in the locations and to the extent and thickness required by the Contract. Material in excess of the requirements of the Contract and material used for any other purpose shall not be included within the certified tonnage.

The measurement of bituminous regulating material by cubic metres shall be the volume of material measured to the outlines required by the Contract.

- 12** The measurement of cement bound regulating material shall be the volume of material measured to the outlines required by the Contract.

- Itemisation** **13** Separate items shall be provided for bituminous regulating materials and cement bound regulating materials in accordance with Section 3 of CC-RMP-00010 paragraphs 3 and 4 and the following:

Group Feature

- I 1 Each group or type of bituminous regulating material
- 2 Each group or type of cement bound regulating material
- II 1 Lower base
- 2 Upper base
- 3 Base
- 4 Binder course
- 5 Surface course

Note: Each item description which includes Group I Feature shall relate to the tabulated list of different constituent aggregate types and their factors included in the Bill of Quantities

- Bituminous and Cement Bound Regulating** **14** The items for bituminous and cement bound regulating material shall in accordance with the Preambles to Bill of Quantities General Directions include for:

- Item Coverage**
- (a) base, lower base, upper base, binder course, surface course and concrete slab (as this document paragraph 9);
 - (b) weighing, tickets and copies;
 - (c) material not laid as regulating material.

Surface Treatment

- Units** **15** The unit of measurement will be:
- (i) surface treatment square metre.
- Measurement** **16** The measurement of surface treatment shall be calculated using the width of the top surface to be treated as described in paragraph 7.
- 17** Surface treatment shall only be measured separately when the Contract requires a separate or additional surface treatment to be applied to the pavement. Surface treatment forming an integral part of any specified group or type of pavement shall not be separately measured.
- No deductions shall be made for openings of 1 square metre or less.
- Itemisation** **18** Separate items shall be provided for surface treatment, in accordance with Section 3 of CC-RMP-00010 paragraphs 3 and 4 and the following:
- Group Feature**
- | | | |
|-----|---|---------------------------|
| I | 1 | Microsurfacing |
| | 2 | Surface dressing |
| | 3 | High friction surfacing |
| | 4 | Retexturing |
| II | 1 | Different types |
| III | 1 | Different colours |
| IV | 1 | Different rates of spread |
- Surface Treatment** **19** The items for surface treatment shall in accordance with the Preambles to Bill of Quantities General Directions include for:
- Item Coverage**
- (a) trial areas and trials;
 - (b) making good after sampling and testing;
 - (c) protection of product in transit and while awaiting installation;
 - (d) grading, measuring, reclaiming, mixing and depositing materials;
 - (e) spraying binder and spreading materials and products;
 - (f) rolling deposited materials;
 - (g) pre-treatment, cleaning, preparing and working on or up to existing surfaces and features;
 - (h) bond coat (as this document paragraph 24);
 - (i) chippings and broadcast aggregate;
 - (j) making joints;
 - (k) curing and protection;
 - (l) protection and masking and unmasking of kerbs, drainage channels, chamber covers, gully gratings, expansion joints, and the like;
 - (m) taking measures to protect and maintain the pavement from deterioration by the use of constructional plant and the ingress of water and other materials;

- (n) calibration and certification of equipment and supplying copy of certificate at to the Employer;
- (o) measures required for aftercare and opening road to traffic;
- (p) additives;
- (q) waste management and disposal of material resulting from retexturing.

Bond Coat

- Units** **20** The unit of measurement shall be:
- (i) bond coat square metre.
- Measurement** **21** The measurement of bond coat shall be the surface area to be coated.
- 22** Bond coat shall only be measured separately when the Contract requires a separate or additional bond coat to be applied to an existing surface prior to the construction of the following course or treatment. Bond coat forming an integral part of any specified group or type of pavement or surface treatment shall not be separately measured.
- Itemisation** **23** Separate items shall be provided for bond coat in accordance with Section 3 of CC-RMP-00010 paragraphs 3 and 4 and the following:

Group Feature

- I 1 Bond coat
- II 1 Different materials
- III 1 Different rates of spread

- Bond Coat** **24** The items for bond coat shall in accordance with the Preambles to Bill of Quantities General Directions include for:

- Item Coverage**
- (a) trial areas and trials;
 - (b) making good after sampling and testing;
 - (c) designing and verifying mixes;
 - (d) grading, measuring, mixing and depositing materials;
 - (e) making joints;
 - (f) cleaning surfaces;
 - (g) protection and masking and unmasking of kerbs, drainage channels, chamber covers, gully gratings, expansion joints, road studs, road markings and the like and obtaining clean markings;
 - (h) cutting back, preparing and working on or up to adjacent faces, surfaces and features;
 - (i) admixtures and additives.

Cold Milling

- Units** **25** The unit of measurement shall be:
- (i) milling square metre.
- Measurement** **26** The measurement of milling shall be calculated using the width stated in the Contract. No deductions shall be made for openings of 1 square metre or less.

Milling carried out as part of the production of ex situ Low Energy Bound Mixtures shall be separately measured.

Itemisation **27** Separate items shall be provided for milling in accordance with Section 3 of CC-RMP-00010 paragraphs 3 and 4 and the following:

Group Feature

- I 1 Milling
- II 1 Different thicknesses or depths

Cold Milling **28** The items for milling shall in accordance with the Preambles to Bill of Quantities General Directions include for:

- Item Coverage**
- (a) re-shaping and rolling;
 - (b) shaping to cambers, falls and crowns;
 - (c) multiple handling of material;
 - (d) loading into transport;
 - (e) disposal of material (as CC-RMP-00600 paragraph 39);
 - (f) working around drainage channels, chamber covers, gully gratings, expansion joints and the like;
 - (g) ramps;
 - (h) removing road studs not required for re-use;
 - (i) surface preparation and cleaning;
 - (j) cutting out and removal of material by other means;
 - (k) water supply and damping down;
 - (l) electronic detection sweep, referencing and reports;
 - (m) pulverisation, and regrading of material to be re-used in the production of ex situ Low Energy Bound Mixtures.

Repave Recycle Process

- 29** Not Used
- 30** Not Used
- 31** Not Used
- 32** Not Used

Reinstatement of Paved Areas

Units **33** The unit of measurement shall be:
 (i) reinstatement of paved area square metre.

Measurement **34** The measurement of reinstatement of paved area shall be calculated using the width of the top surface to be reinstated excluding sides and edges.

No deduction shall be made for openings of 1 square metre or less.
 The top surface for the following features shall be the widths or areas described below:

- (a) for drains, sewers, piped culverts, service ducts and filter drains – the width shall be the internal diameter of the pipe plus 600 mm;
- (b) for kerbs, channels, edgings, combined drainage and kerb blocks, linear drainage channel systems and the like – the width of the foundations;
- (c) for chambers, gullies, traffic signs, traffic signals, road lighting columns and the like – the horizontal area of the base slab or where no base slab is required the area of the bottom of the excavation.

Itemisation

35

Separate items shall be provided for reinstatement of paved area in accordance with Section 3 of CC-RMP-00010 paragraphs 3 and 4 and the following:

Group Feature

- I 1 Each type of paved area reinstatement
- II 1 Different thicknesses or depths

Reinstatement of Paved Area

36

The items for reinstatement of paved area shall in accordance with the Preambles to Bill of Quantities General Directions include for:

Item Coverage

- (a) determination of the extent of the reinstatement and agreement with the Employer's Representative;
- (b) sub-base (as this document paragraph 5);
- (c) base, lower base, upper base, binder course, surface course and concrete slab (as this document paragraph 9);
- (d) bituminous and cement bound regulating material (as this document paragraph 14);
- (e) surface treatment (as this document paragraph 19);
- (f) kerbs, channels, edgings and combined drainage, kerb blocks and linear drainage channel systems (as CC-RMP-01100 paragraph 4);
- (g) footways and paved areas (as CC-RMP-01100 paragraph 21);
- (h) scarifying;
- (i) milling (as this document paragraph 28);
- (j) drilling holes;
- (k) bond coat (as this document paragraph 24);
- (l) bringing to correct levels and surface regularly following settlement.

Repairs to Existing Concrete Carriageway

Units

37

The units of measurement shall be:

- (i) thin bonded repairs square metre.
- (ii) joint repairs linear metre.

Measurement

38

The measurement of thin bonded repairs shall be calculated using the plan area of the top surface of each repair patch excluding areas of joint sealant.

39

Thin bonded repairs and joint repairs shall only be measured separately when areas and lengths to be repaired are stated in the Contract.

Itemisation **40** Separate items shall be provided for thin bonded repairs and joint repairs in accordance with Section 3 of CC-RMP-00010 paragraphs 3 and 4 and the following:

Group Feature

- | | | |
|-----|---|--|
| I | 1 | Thin bonded repairs |
| | 2 | Joint repairs |
| II | 1 | Each type |
| III | 1 | Individual areas not exceeding 1 square metre on plan |
| | 2 | Individual areas exceeding 1 square metre but not exceeding 2 square metres on plan and so on in steps of 1 square metre |
| | 3 | In individual lengths not exceeding 1 linear metre |
| | 4 | In individual lengths exceeding 1 linear metre but not exceeding 2 linear metres and so on in steps of 1 linear metre |
| IV | 1 | Different thicknesses or depths |

Thin Bonded Repairs and Joint Repairs **41** The items for thin bonded repairs and joint repairs shall in accordance with the Preambles to Bill of Quantities General Directions include for:

Item Coverage

- (a) determination of the area or length of the repair and agreement with the Employer's Representative;
- (b) base, lower base, upper base, binder course, surface course and concrete slab (as this document paragraph 9);
- (c) removal of any existing joint sealant and caulking material;
- (d) removal of unsound concrete and cutting back reinforcement within the repair area;
- (e) treatment of repair area and surrounds;
- (f) wetting and removal of excess water;
- (g) finishing repair material flush with the level of the surrounding concrete slab and brushing and applying surface texture to match existing;
- (h) reinstatement of sub-base;
- (i) disposal of material (as CC-RMP-00600 paragraph 39).

Geotextiles and Geotextile-related Products

Units **42** The unit of measurement shall be:

- (i) Geotextile and geotextile-related product square metre.

Measurement **43** The measurement of geotextile and geotextile-related products shall be the developed area covered by the product measured to the limits stated in the Contract.

44 Geotextile and geotextile-related products shall be measured separately when the Contract requires a geotextile and geotextile-related product to be installed within the pavement structure either between binder course and base or base and sub-base.

No deductions shall be made for openings of 1 square metre or less.

- Itemisation** **45** Separate items shall be provided for geotextile and geotextile-related products in accordance with Section 3 of CC-RMP-00010 paragraphs 3 and 4 and the following:

Group Feature

- | | | |
|-----|---|--|
| I | 1 | Geotextile and geotextile-related products |
| II | 1 | Different types |
| III | 1 | Different grades |

- Geotextiles and Geotextile related Products** **46** The items for surface treatment shall in accordance with the Preambles to Bill of Quantities General Directions include for:

Item Coverage

- (a) trial areas and trials;
- (b) protection of product in transit and while awaiting installation;
- (c) pre-treatment, cleaning, preparing and working on or up to existing surfaces and features;
- (d) cutting and jointing, sealing and fixing;
- (e) laying products and securing in place;
- (f) bond coat (as this document paragraph 24);
- (g) overlapping product;
- (h) protection and masking and unmasking of kerbs, drainage channels, chamber covers, gully gratings, expansion joints, and the like.

Repair Systems

- Units** **47** The unit of measurement shall be:

- (i) repair systems square metre.

- Measurement** **48** Repair systems shall include permanent repair material systems, localised repair material systems and emergency repair material systems.

The measurement of repair material shall be calculated using the width of the top surface to be treated as described in paragraph 7.

No deductions shall be made for openings of 1 square metre or less.

- Itemisation** **49** Separate items shall be provided for base, binder course and surface course in accordance with Section 3 of CC-RMP-00010 paragraphs 3 and 4 and the following:

Group Feature

- | | | |
|-----|---|-----------------------|
| I | 1 | Repair System |
| II | 1 | Each type of system |
| III | 1 | Base |
| | 2 | Binder course |
| | 3 | Surface course |
| IV | 1 | Different thicknesses |

- | | | |
|----|---|--|
| VI | 1 | In carriageway, hardshoulder and hardstrip |
| | 2 | In emergency crossing |
| | 3 | In lay-by and bus bay |

Repair Systems

50

The items for repair systems shall in accordance with the Preambles to Bill of Quantities General Directions include for:

Item Coverage

- (a) protection of material in transit and while awaiting tipping;
- (b) grading, measuring, reclaiming, mixing and depositing materials;
- (c) cutting back, saw cutting, cleaning, preparing and working on or up to existing surfaces and features;
- (d) disposal of material (as CC-RMP-00600 paragraph 39).
- (e) edge support;
- (f) infra-red treatment to existing surface;
- (g) bond coat (as this document paragraph 24);
- (h) spreading and compaction;
- (i) additional materials required for localised surface repair system;
- (j) making joints;
- (k) taking measures to protect and maintain the pavement from deterioration by the use of constructional plant and the ingress of water and other materials;
- (l) measures required for aftercare and opening the road to traffic;
- (m) filler;
- (n) treatment to faces of cold upstanding edges prior to laying hot bituminous mixtures.

2. References

2.1 TII Publications (Standards) Reference

CC-RMP-00010 Introduction to the Requirements for Measuring and Pricing

CC-RMP-00600 Requirements for Measuring and Pricing of Earthworks

CC-RMP-01100 Requirements for Measuring and Pricing of Kerbs, Footways and Paved Areas

CC-RMP-01700 Requirements for Measuring and Pricing of Structural Concrete

CC-RMP-01900 Requirements for Measuring and Pricing of Protection of Steelwork against Corrosion



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