

AGREED WORKING PROCEDURES



CORING ADVICE NOTE

The attached Coring Advice Note was agreed.

Copy attached.

Cross Reference Information:

NRSWA 1991 : 72
Code of Practice : INSPECTIONS / SEHAUC SPECIFIC
Regulations : No. 1688 (INSPECT. FEES.)
SEHAUC Meeting: : 8th March 2013

Signed:

Utility Chairman

Authority Chairman

This item is registered under the SEHAUC administration reference:

SE/ 72 / 040

Secretary

Date 08/1/13

SOUTH EAST HIGHWAY AUTHORITIES & UTILITIES COMMITTEE IMPLEMENTING A STRUCTURED CORING PROGRAMME WITHIN THE SOUTHEAST REGION

New Road and Street Works Act 1991

1. Introduction

Following the South East regions decision not to recognise the HAUC(UK) advice note No 2012/01 we have reviewed our process in line with the national document.

This Good Practice Guide provides guidance for the implementation of a structured coring programme as part of a compliance audit regime in respect to reinstatements following any works in the public highway.

A structured coring programme is defined as a predetermined random sample of reinstatements, which represent a Work Promoters typical works activity on the highway, notified to the Works Promoter or Street Authority in advance of programme commencement.

A consistent approach to investigatory sampling and testing, and in particular coring, will provide a comparative measure of compliance with the applicable version of the Specification for the Reinstatement of Openings in Highways. The analysis of comparative data can be used as a driver for positive change and may also provide valuable asset management information.

Undertaking a structured programme of core sampling, testing, analysis and reporting using the principles recommended in this Good Practice Guide will generate comparative data which can be collated and shared, with confidence.

It is recognised that Street Authorities or works promoters may consider it necessary to carry out other coring programmes which are targeted in order to investigate specific concerns relating to reinstatement and compliance. These targeted coring programmes are not covered within this document. However, the processes and principles of this document should be followed when undertaking such programmes.

All references to British and European standards, Codes of Practice and other document references contained within this document refer to those documents current at the time of publication or their subsequent revisions.

IMPLEMENTING A STRUCTURED CORING PROGRAMME

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1.0 History

1.1 Since the inception of the New Roads and Street Works Act 1991, (NRSWA), and its associated Regulations and Codes of Practice there has been a statutory requirement that all excavations conducted in the public highway as part of street works must be reinstated to the requirements contained in the Specification for the Reinstatement of Openings in Highways, (SROH), current at the time of reinstatement. The responsibility for complying with those requirements lies with the Works Promoter.

1.2 Street Authorities carry out inspections of work promoter's work to determine compliance with the SROH and to determine general performance. These inspections include visual inspections in line with Section 72 of NRSWA and/or detailed investigatory sampling and testing.

1.3 A visual inspection will look primarily at the surface characteristics of a reinstatement and will compare them against the intervention levels as detailed within the SROH.

1.4 The long term performance of a reinstatement is dependant, not only on the surface characteristics but also on the underlying properties of that reinstatement and the correct placement of the reinstated materials.

2.0 Background

2.1 Street Authorities are placing a greater emphasis on asset management and asset protection. This has led to a gradual increase in the number of Street Authorities engaging in structured coring programmes of reinstatements.

2.2 This shift in focus, along with local variations in the implementation and interpretation of coring programmes and their results, has resulted in a number of challenges and questions from Works Promoters.

2.3 SEHAUC has produced this Good Practice Guide based on the HAUC(UK) document and regional good practice to provide clarity, promote consistency, maximise the benefits to be gained from such programmes and to reduce the potential for dispute.

2.4 It is recommended that the principles established in this Good Practice Guide be adopted by all parties implementing a structured coring programme. This includes Street Authorities and Works Promoters.

3.0 Introduction

3.1 Reporting results from coring programmes will increase the awareness of compliance/non-compliance with the SROH or any locally agreed specification throughout the industry.

3.2 Some of the benefits associated with a structured coring programme are;

- A better understanding of overall compliance with the specification.
- An opportunity to share results in order to drive continuous improvement
- A mechanism to promote best practice initiatives and to improve competence
- To develop key performance indicators through nationally recognised data-sets
- Management and protection of the highway asset

3.3 This Good Practice Guide gives guidance for undertaking a structured coring programme including;

- Site selection process
- Scale and detail of programme
- Notification of intention to undertake a coring programme
- Core extraction, labelling, transportation and storage
- Core testing and recording
- Analysis and reporting
- Section 72 defect notices and remediation
- Cost recovery
- Flowchart showing the coring process.

4.0 Programme size

4.1 Each Street Authority or Works Promoter can determine the scale of its own structured coring programme. The sample size should however reflect the variable workload and relative performance of each Works Promoter and the asset management aspirations of the Street Authority.

4.2 A sample size of 2% of suitable permanent reinstatements registered by each Works Promoter during the chosen sample period is recommended as the optimum number with which to achieve a representative sample size, or a minimum of ten cores, whichever is the greater (see also note accompanying 5.3).

4.3 The results achieved from a sample size of less than that shown in 4.2 should not be reported for use as comparative data at national or regional level.

5.0 Sample selection and identification.

5.1 The selection of sites for inclusion in a structured coring programme is an important process with the aim being to gain a representative sample of a Works Promoter's reinstatements.

5.2 Suitable reinstatements for inclusion within a structured coring programme should be extracted from the Street Works Register. Typically the sample will be selected from those reinstatements that would be considered as either B sample inspections or C sample inspections except where imminent surface treatment works make earlier coring necessary. The area of selected reinstatements should represent a Work Promoters typical works activity.

5.3 Where Utilities instigate coring the sample size would be initially 2% of reinstatements that will be cored, taken from works undertaken within the last 23 months, although the more recent works would indicate the level of current compliance. It is to be encouraged to select sites as soon after registration as possible to ascertain current performance.

It is envisaged that within 2 years this approach would provide a full sample record of the works undertaken and therefore minimise the need for a Street Authority random coring programme. Where Street Authorities intend to undertake their own coring programmes they should take into account any like for like Utility coring when considering the size and scope of the own programme.

NOTE: - The benefits set out in 3.2 are likely to be maximised where coring is undertaken in line with category B sample inspections.

5.4 Reinstatements should typically be selected from those placed in flexible carriageways and footways, but may also be selected from those placed in composite and rigid roads. Reinstatements selected may include reinstatements placed using permanent cold-lay surfacing material.

NOTE: - where sampling is to take place in either composite or rigid construction, a core should also be taken from the adjacent existing construction layers for comparative analysis.

5.5 A sample distribution in proportion to the number of registered carriageway and footway reinstatements should be considered.

5.6 All reinstatements included within a structured coring programme must be visually compliant with the performance requirements of the SROH. Those reinstatements inspected as part of the sample process that are agreed not to be visually compliant with the SROH must not be included as part of a structured core programme until remediation is completed. (Refer also to 6.3 and Appendix A1)

5.7 Where permanent cold-lay surfacing materials are identified, those reinstatements should not be wet flushed cored until at least 6 months after the date of registration, (Ref SROH -A.8.3)

5.8 Where positive traffic management is required to extract any core sample, this should be determined at the time that the sample is identified and referenced on the notification of the structured coring programme.

5.9 It is recommended that, at the time of sample identification, the sample should be identified by;

- Marking the reinstatement clearly with a “paint mark” (this is not necessarily the core location)
- Taking appropriate photograph(s) showing the position of the reinstatement in the street and the “paint mark”

5.10 The reinstatements selected for inclusion in a structured coring programme should be clearly identified within the programme format by;

- Identifying the NRSWA reference number
- Detailing the location
- Recording an accurate grid reference, preferably by GPS location
- Detailing the dimensions of the reinstatement and its position within the highway, (e.g.: c/way or f/way)
- Recording the Road Classification, (types 0 – 4), for carriageway reinstatements

5.11 The reinstatements selected for inclusion in a structured coring programme should be selected from within those areas where the existing adjacent surfaces are of a generally sound condition.

6.0 Programme notification

6.1 It is considered essential to inform Works Promoters or the Street Authority of the intention to undertake a coring programme, giving at least one month's advance notification. Where Utilities undertake their own coring programmes they should also serve notices/permits where appropriate.

6.2 A list of all sites to be sampled should be included with the notification of intention to carry out a structured coring programme.

6.3 In advance of the notified structured coring programme start date, Works Promoters should inform the Street Authority of any anomalies with identified sites, for example where those reinstatements

- Do not relate to the associated works reference.
- Do not relate to works that your company have completed.
- Are not considered to be a permanent reinstatement.
- Are visually non-compliant with the SROH.
- Do not fairly represent your typical works activity

Such anomalies should be notified to the Street Authority within a reasonable period, typically 10 working days in advance of the start date of the structured coring programme.

7.0 Core extraction and recording

7.1 All sampling and testing shall be carried out by a laboratory holding current UKAS accreditation covering the specified method of sampling & testing, unless otherwise agreed and documented between all parties. (Ref SROH – S2.7.1).

7.2 All core samples shall be nominal 100/150mm diameter with a maximum tolerance of 100mm - 2mm (making a core of 98/148mm in diameter acceptable).

7.3 When carrying out core extraction, works sites must be set out in accordance with the requirements of the “Safety at Street Works and Roads Works” Code of Practice current at the time including, where appropriate, traffic control measures. The coring rig should normally be considered as mobile works and would be subject to SL&G inspections with any inadequacies being associated to the original works, unless a separate works notice has been submitted for the coring works.

7.4 Before carrying out core extraction, a risk assessment must be completed including the identification and location of underground apparatus.

7.5 If a selected site exhibits an obvious visual defect this should be actioned through the routine defect regime and not investigated.

7.6 It is recommended for structured coring programmes that no part of any core should be within 75mm of the edge of a reinstatement or within 100mm of any surface apparatus. Usually only one core shall be extracted per reinstatement. However, for long trenches it is suggested that one core be taken for each linear 200m. Cores should be initially assessed on site and core extraction should halt once 3 cores have passed or one core fails. The extent of reinstatement failure and remedial actions will be determined at a later stage.

NOTE: - Cores not extracted in accordance with 7.6 should not be used as comparative data at national or regional level.

7.7 The extraction process must be in accordance with the principles of BS12697 – Part 27. The coring machine must be maintained perpendicular to the surface and any dust must be suppressed using appropriate methods.

7.8 Cores must be extracted from the hole and removed from the core barrel with care so that no material is lost or the core damaged or distorted in any way.

7.9 Cores should be taken through the full depth of the bound layers. For Type 1 and Type 0 roads, where the required reinstatement depth is greater than 300mm, specific information on the depth of the apparatus must be obtained in advance of coring and form part of the site risk assessment.

7.10 Cores should be placed in individual sealed pre-labelled containers with relevant details recorded on a “sample detail form”. If the core breaks up on extraction all recovered material should be placed in the sample container.

7.11 The core/cores should be transported to the appointed laboratory for testing in a suitable container as to prevent damage or material loss to the core and stored in accordance with British Standard requirements so that the quality of the sample is not compromised.

7.12 Preliminary analysis of extracted cores should not take place on site unless agreed by both parties. Cores should be transported to a materials laboratory for full analysis.

Note: exceptions for large reinstatements see paragraph 7.6 where a visual assessment should be made to determine if continued cores are required.

7.13 All core holes should be reinstated in accordance with the SROH - S11.6 and the site left in a clean and tidy condition. All arisings must be cleared from site. The core must not be used as reinstatement material.

7.14 Works Promoters and/or Street Authorities should be afforded the opportunity to attend site during the structured coring programme to view the core sampling process (see also 6.1).

8.0 Testing and interpretation of cores

8.1 Works Promoters and/or Street Authorities should be afforded the opportunity to attend the appointed materials laboratory during the structured coring programme to view the core testing and analysis processes.

8.2 The appointed materials laboratory must have current UKAS accreditation covering the specified methods of testing.

8.3 Core samples shall be tested for compliance against the specification for depth and air voids appropriate to the edition of the SROH current at the time that the reinstatement was placed or the locally agreed specification.

8.4 Core samples may also be assessed to determine whether the correct materials were used for the reinstatement. The presence of contamination, lack of bond between layers, etc should also be noted & recorded.

8.5 Reinstatements are considered to be non compliant where the core(s) tested prove that there is a failure to meet the minimum standards required under the SROH.

8.6 Depth Measurement

Each core sample shall be measured to determine the thickness of the individual layer(s) (and lifts where appropriate) as well as the overall depth of the recovered core. All depth measurements should be carried out in accordance with BS EN12697. Cores shall be limited to one per reinstatement with preference towards carriageway sites. Where an opening includes both carriageway and footway reinstatements preference shall be given to the carriageway site.

Measurements must be taken in a well lit environment and should be taken with the specimen (either the intact core or the individual layer(s) standing firmly on its upper face in a vertical position. As an alternative, the specimen may be laid on a level surface in a horizontal position and rolled as necessary to permit the taking of all measurements.

Measurements must be taken using a calibrated steel rule or approved jig or other device with 1mm graduations. A minimum of four measurements of depth (thickness) evenly spaced around the perimeter of each specimen must be recorded. All measurements shall have a limit deviation of ± 1 mm in accordance EN 12697: Part 36: 2003.

The depth of the specimen will be calculated from the average of the measurements taken and expressed to the nearest 1 mm.

The results will be categorised as per the table below

Category	Non-compliance description	Extent of non compliance
Overall Thickness (OT)	FAIL (OTA)	0-10mm
	FAIL (OTB)	11-30mm
	FAIL (OTC)	31-50mm
	FAIL (OTD)	51-70mm
	FAIL (OTE)	>70mm
Layer Thickness (Surface Course) (SC) from nominal values	Within Tolerance (SCA)	0- -5mm
	FAIL (SCB)	-6-10mm
	FAIL (SCC)	-11-15mm
	FAIL (SCD)	-16-20mm
	FAIL (SCE)	>-20mm
Layer Thickness (other Bound Material) (BM)	Within Tolerance (BMA)	0-10mm
	FAIL (BMB)	11-30mm
	FAIL (BMC)	31-50mm
	FAIL (BMD)	51-70mm
	FAIL (BME)	>70mm
Air voids content in excess of Table S10.1 of Specification.	FAIL(AVA)	0-2%
	FAIL (AVB)	>2%- 6%
	FAIL(AVC)	>6%

8.7 Air void measurement

Air voids laboratory testing of a construction layer, e.g., surface or binder course should not be carried out if:

- Testing demonstrates that the sample does not comply with the required depth specification (see 8.6).
- Assessment determines that the wrong material has been used in the reinstatement.

An initial visual assessment on Air Voids should always be undertaken and will be reported as follows

- Where no obvious voids present – report as “sound.”
- Where voids are small, widely spaced and unlikely to fail void testing – report as “lightly voided” (CLV).
- Where both small and large voids are present but with no evidence of inter-connectivity, testing is required to confirm compliance – report as “voided” (CV).
- Where large interconnected voids are present and certain to fail if tested – report as “highly voided” (CHV).

Following non acceptance of the Air Void visual assessment at a review meeting the Air voids will be determined in accordance with the SROH as follows.

The in-situ air voids content shall be calculated in accordance with EN 12697- 8. For routine testing the maximum density shall be determined in accordance with EN 12697 – 5 Procedure A: Volumetric procedure.

Alternatively and with agreement of all parties the maximum density may be determined using the mid-point of the supplier’s declared grading & binder content for that mix.

In all cases the core bulk density shall be determined in accordance with EN 12697 – 6, Procedure C: Bulk Density – Sealed specimen.

The maximum density and core bulk density shall be used to determine air void content in accordance with EN 12697 – 8. The result for each reinstatement shall be the average of all results obtained on the cores taken from that reinstatement.

Where the size of the reinstatement exceeds 6sqm, core samples may be extracted in accordance with the SROH - S10.2.3 (4) and the average air void content shall be calculated for that reinstatement. The reported result will comprise the mean value of all individual results from the cores sampled from that reinstatement but shall also show all the individual results leading to the summary.

9.0 Reporting mechanisms and comparative data-sets

9.1 On completion of a structured coring programme a summary report should be produced by or on behalf of the Street Authority or Works Promoter undertaking the programme and circulated as appropriate.

9.2 The collection of comparative data is an important aspect of performance compliance monitoring. Individual summary reports will be tailored to individual writing styles but should include the table below.

Works Promoter 1	Works Promoter 2	Etc Etc	
			Total c/way sites.
			Total c/way compliant sites
			Total c/way non compliant sites
			C/way percentage compliant
			Total f/way sites
			Total f/way compliant sites
			Total f/way non-compliant sites
			F/way percentage compliant
			Total Numbers of sites cored
			Total Compliant
			Total Non-Compliant
			Total Percentage Complaint
			Analysis of non-compliance
			Surface course air void non-compliant
			Binder course air void non-compliant
			Combined surface course and binder course air void non-compliant
			Total air voids non-compliant
			Surface course depth non-compliant
			Binder course depth non-compliant
			Bound base (road base) depth non-compliant
			Combined surface course/binder course/bound base (road base) depth non-compliant
			Total depth non-compliant
			Combined depth and air void non-compliant
			Incorrect material used
			Incorrect polished stone value
			Presence of contamination / poor bond etc

9.3 Summary reports should include an appendix of the relevant UKAS laboratory analysis test data sheets.

9.4 Works Promoters should act on and respond to the information presented in the summary reports.

9.5 Summary reports issued on completion of a structured coring programme are additional to any information contained as part of a NRSWA Section 72(3) notice.

9.6 A full report of the findings would be made available to all parties once available, this can be in the form of access to the result web page or by email or CD. Results are to include copies of the core certificates and all photographs taken. Open access to the web results is recommended to promote an open door policy.

Depending on the results meetings with the Street Authority may be required to discuss the findings. Utility companies will self -defect all reinstatements where the Utility coring programme core results reveal a non-compliance. Wherever possible remedial works will be notified as part of the original works reference. Where this is not possible a separate notice shall be raised with a cross reference to the original works. The core reference shall be included in the works description.

If the level of compliance is such that an adjustment of the core sample percentages is required then the following table will be used to replace the initial sample rate for future core programmes.

Pass Rate	Random sample %	Minimum actual sample %
76% and above	5	2
75 – 51 %	20	10
50% and below	50	20

10.0 Defect notification and remediation

10.1 Core samples that are not compliant with the requirements of the SROH are also non-compliant with the requirements of Section 71(1) of the NRSWA. Where core samples identify non-compliance with the requirements of the SROH then the whole of the area reinstated is deemed to be non-compliant for defect notification purposes.

10.2 The Street Authority should issue a Notice to the Works Promoter, under Section 72(3) of the NRSWA identifying the non-compliance and the required remedial action. UKAS Laboratory report sheets should be issued with the Section 72(3) Notice to confirm the non-compliance. The date of the Street Authority assessment of the results shall be deemed to be the “date of the inspection” for the purposes of the defect report and thus becomes day one with regard to the S72(3) process.

In instances where an Utility carries out a coring programme and presents the results of that programme to the Street Authority, the Street Authority will not issue ‘defective reinstatement’ notifications where the results show a reinstatement to be defective, however, the Utility will have three months to correct any non-dangerous defect. A notice must be served on the Street Authority to undertake the remedial works, failure to do so after 3 months may result in a defect inspection from the Street Authority.

10.3 The detail of any remedial works and the timescales appertaining to any remedial reinstatement must be agreed with the street authority. Consideration may be given to the social and environmental impact of any remediation; however this should not be detrimental to the integrity of the reinstatement or of the highway. In the case of a proven non compliant reinstatement it is the discretion of the Street Authority to determine the requirement for remedial works and this may include assessing the quality of the reinstatement relative to the condition of the adjacent surfaces. (Ref SROH S12.1.2). Where the agreed extent of remedial action has not been undertaken, the Street Authority may carry out any level of investigation to ascertain the full extent of compliance.

10.4 Where a non-compliant reinstatement is identified then the guarantee period appertaining to that reinstatement is deemed not to have started.

10.5 Where non-compliance is not agreed by the Works Promoter a mechanism for escalation should be agreed by both parties. Where resolution is not reached refer to the HAUC (UK) dispute resolution process.

10.6 Core samples should be retained for a minimum period of 1 month after issue of report / defect notification unless agreed otherwise by all parties. Where non-compliance is not agreed any cores should be retained until the matter is resolved.

11.0 Cost recovery

11.1 The recovery of costs incurred as a result of investigatory works is covered under Section 96 of NRSWA and the appropriate Regulations.

Invoices for those costs should be calculated in accordance with the above regulations and invoiced in a transparent manner. An example of how this can be achieved is shown in Appendix A3.

Costs may only be recovered where non-compliance has been proven.

Appendix A1 – Example standard letter of notification

Address 1

Address 2

Address 3

Address 4

Contact 1

Contact 2

Date (minimum 1 month in advance of date of programme commencement)

Dear Sir or Madam

New Roads and Street Works Act 1991

Notification of intention to carry out a structured coring programme

Please find attached a schedule of reinstatements that will be sampled as part of a structured coring programme to take place commencing.....In accordance with best practice recommendations all reinstatements to be sampled have been marked for identification purposes.

All reinstatements have been selected based on street works notices as submitted by your company.

Should your company consider that any of the sample reinstatements as identified:

- Do not relate to the associated works reference.
- Do not relate to works that your company have completed.
- Is not a permanent reinstatement.
- Are visually non-compliant with the SROH.

Then you must inform this authority no later than 10 working days before this core programme commences.

It is recommended that a representative of your company attends each reinstatement during this structured coring programme to view the core sampling process.

It is also recommended that a representative of your company makes arrangements to attend the appointed UKAS accredited materials laboratory during this coring programme to view the core testing and analysis processes.

The details for our UKAS accredited material laboratory are attached.

Yours Faithfully Etc etc

Appendix A2 – Examples of Certificates of sampling

NEW ROADS & STREET WORKS ACT 1991

Reinstatement Record - Coring

HAMPSHIRE COUNTY HIGHWAYS LABORATORY
 Sandridge Road, Mottisfont, Southampton, SO21 1BB
 Tel: (01963) 774502



LAB No.:		TARGETED/RANDOM:	
SITE:		REF:	
PRECISE LOCATION:		UTILITY:	
		REINSTATEMENT SIZE:	DATE CORED:
			CORED BY:
REINSTATEMENT CATEGORY:			
LAYS		MATERIAL DESCRIPTION	
No.	THICKNESS (mm)	COMMENTS	
	DEPTH (mm)	SUB-BASE	ADDITIONAL COMPACTION (mm)
	DISTAL:		
	PROX:		
COMPLIANCE:			
ADVICE:			
REMARKS:			



SIGNED: FOR COUNTY HIGHWAYS LABORATORY
 DATE:

Strata Coring Ltd - Core Sample Report



Strata Ref No. Core Size mm
 Sample Date Date Of Issue



Strata Coring Ltd
 Fintec Park
 461 London Road
 High Wycombe
 Bucks HP11 1EL

Tel / Fax 01494 447 006

Client Client Contact Client Ref No. Programme Ref No.

Address Core Location Road Type Road Class
 Trench Width(m) Trench Length(m) Reinstatement Area

8 Point Measure for Surface and Binder Course depths (millimetres)

SC1	SC2	SC3	SC4	SC5	SC6	Surface Average	Material	Voids	NRSWA Result
<input type="text" value="60"/>	<input type="text" value="60"/>	<input type="text" value="60"/>	<input type="text" value="60"/>	<input type="text" value="60"/>	<input type="text" value="60"/>	<input type="text" value="60.00"/>	<input type="text" value="DBM10"/>	<input type="text" value="NONE"/>	<input type="text" value="PASS"/>
BC1	BC2	BC3	BC4	BC5	BC6	Binder Average	Material	Voids	
<input type="text" value="80"/>	<input type="text" value="80"/>	<input type="text" value="80"/>	<input type="text" value="77"/>	<input type="text" value="76"/>	<input type="text" value="75"/>	<input type="text" value="78.00"/>	<input type="text" value="DBM20"/>	<input type="text" value="NONE"/>	<input type="text" value="PASS"/>
Total 1	Total 2	Total 3	Total 4	Total 5	Total 6	Total Average			
<input type="text" value="140"/>	<input type="text" value="140"/>	<input type="text" value="140"/>	<input type="text" value="137"/>	<input type="text" value="136"/>	<input type="text" value="135"/>	<input type="text" value="138.00"/>			<input type="text" value="PASS"/>

Base Material

Comments / Depth Requirements NRSWA 1991 Second Edition 2002

Recommendations

Failure Details

Existing / Additional Core Ref

Classification 1 Classification 2 Classification 3



Core Photograph



1st Site Photograph



2nd Site Photograph

THIS CERTIFICATE / REPORT SHALL HAS BEEN PREPARED AND ISSUED IN ACCORDANCE WITH PROCEDURES 3.1 AND 3.2 OF THE STRATA CORING LTD QUALITY MANUAL AND SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT WRITTEN APPROVAL OF STRATA CORING LTD. END OF REPORT.

Authorised By
 DIRECTOR, STRATA CORING LTD

Appendix A3 – Example formula for the recovery of costs.

A3.0 Introduction

3.0.1 As a measure of transparency a street authority may consider using the following formula to calculate any applicable costs incurred as a result of extracting, testing and analysing non compliant core samples. This formula will result in an average cost per core and should be agreed between all parties as a replacement for individual core costs.

A3.1 Recovery of costs

3.1.1 Where a non compliance with the Specification is identified then the recoverable costs per core may be calculated using the following formula;

$$\text{Cost per core} = \frac{A+B+C+D+E+F+G}{\text{Total number of core samples taken (including compliant cores)}}$$

A Identifying potential sample – One hour for a single operative, (published street authority hourly recharge rate).

B Confirming sample – One hour per site (or street if multiple cores in a single location) for a single operative multiplied by the number of visually compliant sites to be sampled, (published street authority hourly recharge rate).

C Notify Utilities of core programme, (standard letter) – One hour for a single operative, (published street authority hourly recharge rate).

D Extraction and testing of core samples and production of lab reports. – as invoiced by UKAS accredited laboratory.

E Assist UKAS technician in extracting cores - Single operative for “X” days at 7.4hrs per day, (published street authority hourly recharge rate).
(X = duration of the core extraction element of the total program)

F. Standard Traffic management undertaken by the operatives for the purpose of the coring programme.

G Production of completed programs Core Performance Report - Four hours for a single operative (published street authority hourly recharge rate).

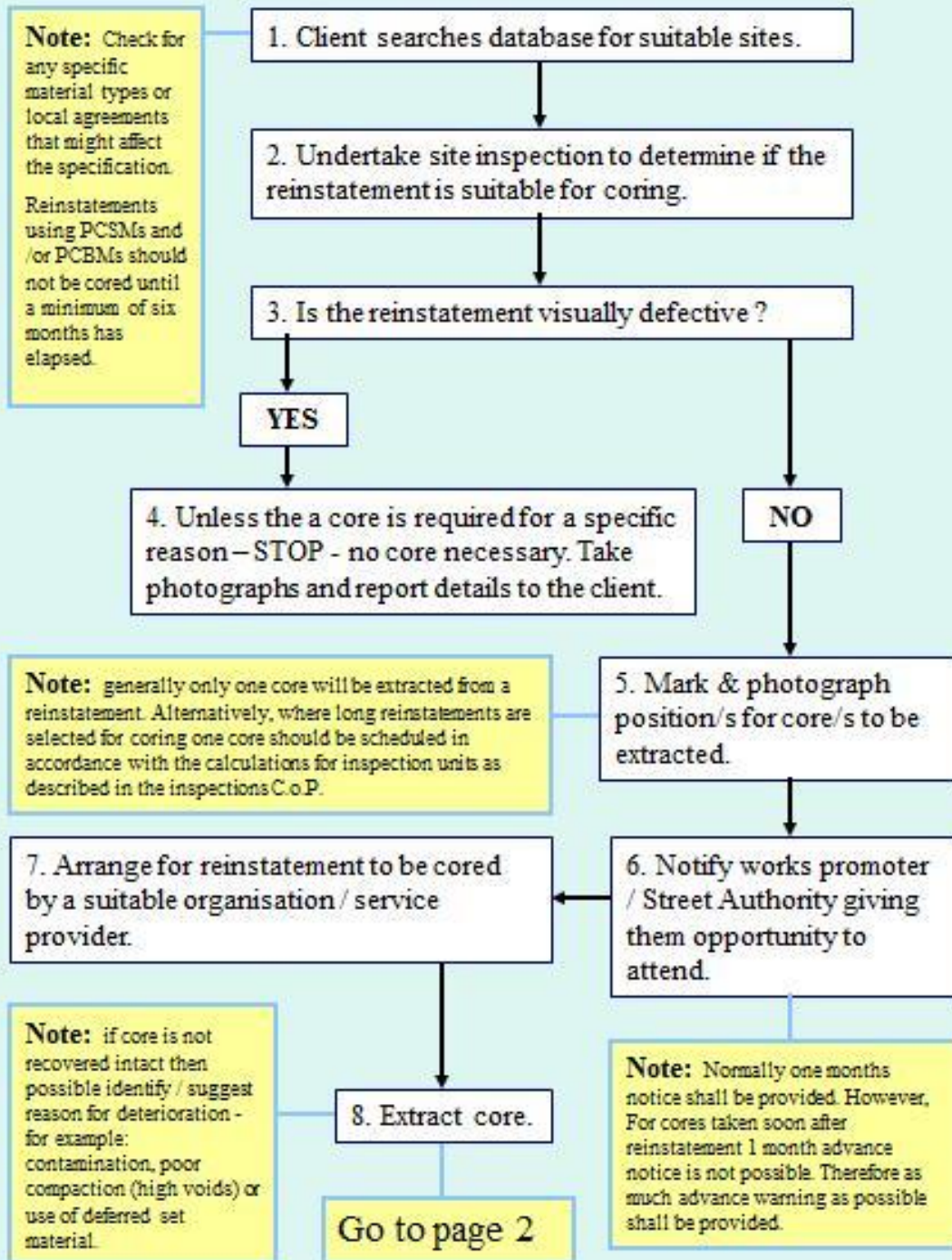
Note: The formula does not require all the elements (A-G) to be undertaken and should only include those elements which result in a direct or actual cost.

Additional Costs outside the above formula.

Costs for any identified additional traffic management on failed cores – as invoiced by traffic management contractor.

Where the coring programme is discussed at a review meeting, cost of meeting may be agreed in place of individual D1 charges.

CORE SELECTION / EXTRACTION



CORE TESTING

10. Undertake check on sub-base compaction.

Note: test on sub-base compaction is a non-standard test undertaken for information only.

11. Photograph core on site and package core securely for transport to the laboratory.

Note: for long reinstatements with multiple cores, undertake preliminary assessments on site (as per Action 14) as cores are recovered. Cease coring as soon as a single core fails or three cores are deemed compliant.

12. Reinstat core hole.

13. Deliver cores to an appropriately accredited laboratory.

For disintegrated cores measurement of depth should be made on site using the sides of the core hole.

14. As soon as possible after delivery, photograph core and test for;

- material depth/thicknesses
- material type
- air voids (visual assessment only),
- Use of surface course materials as a binder course in a reinstatement greater than 2m² or a trench wider than 300mm.

Further assessments may be made as required / agreed.

Notes About Air Voids

- Where no obvious voids present – report as “sound.”
- Where voids are small, widely spaced and unlikely to fail void testing – report as “lightly voided” (CLV).
- Where both small and large voids are present but with no evidence of inter-connectivity, testing is required to confirm compliance – report as “voided” (CV).
- Where large interconnected voids are present and certain to fail if tested – report as “highly voided” (CHV).

15. Laboratory logs results on standard core report, including photographs of core and sends to client ASAP.

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CORE ASSESSMENT / REPORTING

