

## CRITERIA FOR INVESTIGATORY WORKS BY CORE SAMPLING (TEST HOLES)

### 1. PURPOSE

The purpose of this publication is:

- i. To set a framework for Highway Authorities and Statutory Undertakers whilst carrying out coring activities; and
- ii. To enable individual or joint coring exercises to be carried out and to provide assurances of the integrity of the results obtained

#### 1.1 General

It will be the responsibility of the body initiating the coring activity to ensure that all relevant legislation is complied with

#### 1.2 Reinstatement of test holes

The reinstatement of test holes shall be in accordance with the HAUC publication 'Specification for the Reinstatement of Openings in Highways' as amended by HAUC Advice Note 4 (October 1996).

### 2. SAMPLE SELECTION PROCEDURE

Investigatory inspection sites shall be selected from random samples.

- i. The number of selected sites should be proportional to the level of undertaker's activity subject to a review of performance.
- ii. Where the purpose of the investigatory works is to assess and determine the current performance trends, core samples should be taken within 6 months of completion of permanent reinstatement.
- iii. Where the purpose of the investigatory works is to ascertain whether an undertaker has complied with his duties under the New Roads and Street Works Act 1991, core samples may be taken by the Street Authority and/or the Undertaker, as appear to them to be necessary.

### 3. NOTIFICATION REQUIREMENTS

#### 3.1 Advance Notice of Coring Programme

The Highway Authority and Statutory Undertakers should advise of each phase of their respective joint coring programme, at least 7 days prior to commencing work.

## 4. MONITORING INVESTIGATORY WORKS

### 4.1 Investigatory Works carried out by the Highway Authority

- i The Statutory Undertaker should be invited to monitor Investigatory Works.
- ii All core samples should be assessed and classified as follows:
  - a. Technical Compliance: where the reinstatement meets the requirements of the HAUC specification;
  - b. Technical Non-compliance: where a reinstatement does not meet all the requirements of the HAUC specification and subject to agreement, remedial works may not be necessary; and
  - c. Defects: where a technical non-complying reinstatement would warrant remedial works
- iii The defective reinstatement procedures shall apply to 3(ii)(c) above.
- iv In the event of a technical non-complying reinstatement (3(ii)(b) above), all reasonable costs should be recharged to the Utility in accordance with HAUC procedures.

### 4.2 Investigatory Works Carried Out by Statutory Undertaker

- i. The Highway Authority should be invited to monitor Investigatory Works.
- ii. The defective reinstatement procedures, as it applies to time scales and corrective measures, shall apply to non-complying reinstatements identified by core sampling. However, defective reinstatement charges will not apply under these circumstances.

### 4.3 Statutory Undertakers' Quality Assurance Testing

- i. Statutory Undertakers may carry out Quality Assurance Testing in addition to the above, where appropriate.

#### Note:

All remedial works undertaken, as a consequence of non-complying reinstatement identified by core sampling, shall be subject to the notification requirements of the New Roads and Street Works Act 1991 and completed within the time scales indicated in the Welsh HAUC Advice Note entitled [Principles for Handling Defects](#).

## 5. VALIDATION OF TESTING METHOD AND MATERIAL TESTING

The investigatory works may be undertaken by either the Highway Authority or Statutory Undertaker, or their appointed/nominated representative.

- i. Sample material should be tested for compliance with the relevant British or European Standard appropriate for the material and the "Specification for the Reinstatement of Openings in Highways".
- ii. Analytical testing of materials should be undertaken by a NAMAS accredited Laboratory, approved to undertake such tests in accordance with the procedures of the relevant British or European Standards.

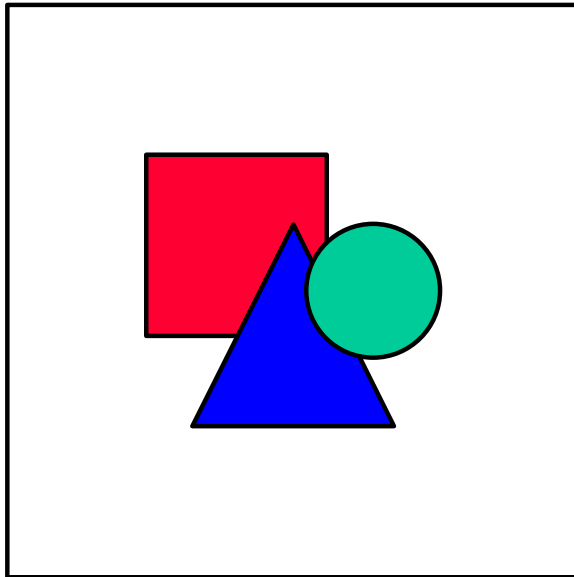
- iii. The advice of an approved NAMAS accredited laboratory may be sought in the event of a dispute or doubt over material specification and compliance, and reinstatement performance.
- iv. Linear measurement of a core sample shall be exempt from ii) and iii) above.
- v. The HAUC Advice Note 1 entitled "Conciliation and Arbitration Procedure" may be initiated in the event of failure to agree.

## 6. PERFORMANCE REQUIREMENTS

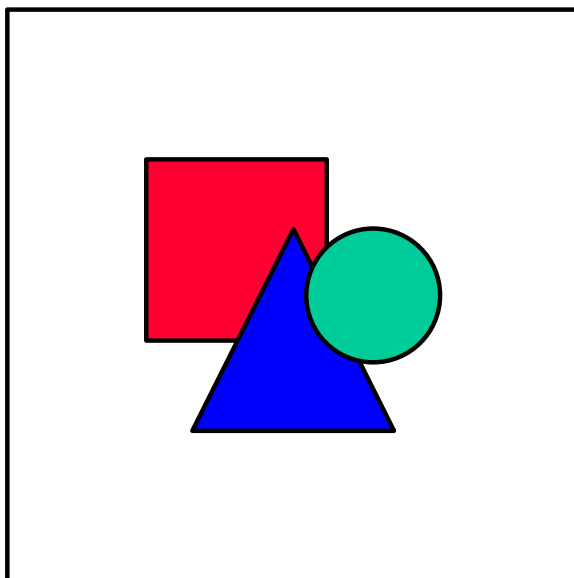
### 6.1 For core samples less than 100mm in diameter:

- i. Overall thickness of surfacing material
- ii. Individual thickness of surfacing material

The following may be determined by mutual agreement:



Correct material



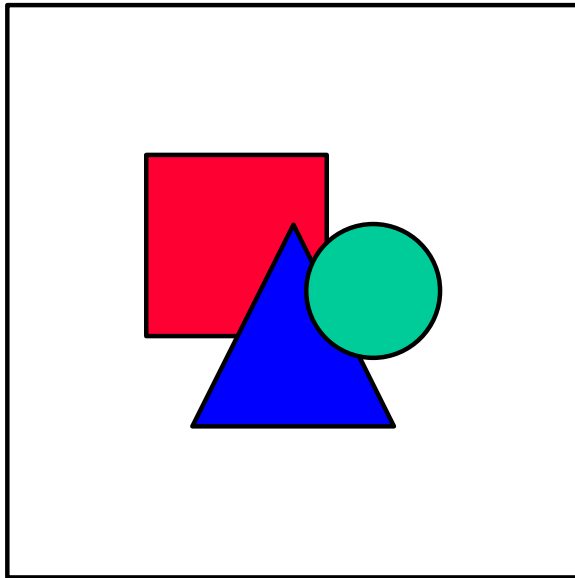
Compaction of surfacing material

### 6.2 For core samples more than 100mm in diameter:

- i. Overall thickness of surfacing material

- ii. Individual thickness of surfacing material
- iii. Correct material, by laboratory test
- iv. Constituent materials determined by laboratory test.

The following may be determined by mutual agreement:



Compaction of surfacing material

**6.3 Note:**

- 1. The Laboratory appointed to undertake testing may require additional cores in order to satisfy and comply with minimal sample size for analytical purposes.
- 2. Analytical tests shall include: binder content; aggregate grading and identification (i.e. limestone/gritstone/granite etc.). If the material source is known, then it is likely that the aggregate PSV values will also be known (applicable to permanent and interim wearing course only).

**7. FREQUENCY AND SITING OF TEST HOLES**

- i. Minimum of 1No. core sample per 20 sq. metres or part thereof; or
- ii. Minimum of 1No. core sample per 100 metre lengths or part thereof.
- iii. Where a non-complying sample has been identified, additional core samples may be taken in order to determine extent of non-compliance, if necessary.
- iv. The position of each core sample shall be agreed on site.

**8. CORE SAMPLE RETENTION PERIOD**

Highway Authority and Statutory Undertaker to be offered the opportunity of viewing the cores on or after the presentation of the results.  
 Non-complying core samples shall be retained until remedial works have been completed in accordance with the reinstatement specification.

## **9. HEALTH AND SAFETY, AND SITE SAFETY AND TRAFFIC CONTROL**

It will be the responsibility of the body initiating the coring activity to ensure that all relevant legislation is complied with.

## **10. PCSM's**

Where core samples are taken from the reinstatement containing PCSM's, the Undertaker shall provide the Highway Authority with the relevant HAUC Certificates of Approval.

## **11. REPORT FORMAT**

Core sample report to be in the format shown in Appendix A

## **12. REPORTING PROCEDURES**

Full report of each core sample taken shall be copied, within one month, to the Highway Authority or Statutory Undertaker respectively.  
A summary report of results should be presented at Local HAUC and Welsh HAUC by the relevant Highway Authority.

### **Core Sampling Appendix A**

**CYNGOR SIR  
CEREDIGION  
COUNTY COUNCIL**

Adran y Priffyrdd, Eiddo a Gwaith, Uned Gweithiau Stryd  
Highways, Property and Works Department, Street Works  
Section

### **CORE SAMPLE ANALYSIS REPORT**



**Material identification : to British Standard**

<b>Binder content</b>	<b>Acceptable* /Non-compliance*</b>
<b>Aggregate grading</b>	<b>Acceptable* /Non-compliance*</b>
<b>Aggregate type</b>	<b>Acceptable* /Non-compliance*</b>
<b>PSV (if Known)</b>	<b>Acceptable* /Non-compliance*</b>
<b>Material Source (if Known)</b>	

**Remarks**

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**Single Course const.\* /Wearing Course/Base Course\* /Other specify) \*:**

**Material identification : to British Standard**

<b>Binder content</b>	<b>Acceptable* /Non-compliance*</b>
<b>Aggregate grading</b>	<b>Acceptable* /Non-compliance*</b>
<b>Aggregate type</b>	<b>Acceptable* /Non-compliance*</b>
<b>PSV (if Known)</b>	<b>Acceptable* /Non-compliance*</b>
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<b>PSV (if Known)</b>	<b>Acceptable* /Non-compliance*</b>
<b>Material Source (if Known)</b>	

**Remarks**

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**Signed..... Date.....**