

Quality Protocol for Production of Recycled Aggregates



Contents

Foreword

Section		Page
1.0	Production Site and Products	1
2.0	Acceptance Procedures	2
3.0	Factory Production Control System	5
4.0	Testing Regime	9
5.0	Plant, Equipment and Stores	11
6.0	Documentation	12

Appendices

- Appendix A: Example of Rejection Notice
- Appendix B: Register of Deliveries
- Appendix C: Method of Production Diagram
- Appendix D: Operating Procedures for Mobile Plant
- Appendix E: Loading Authority Ticket
- Appendix F: Maintenance Schedule for Mobile Plant
- Appendix G: Glossary

Foreword

Complete Utilities Ltd has been operating for over 20 years undertaking civil engineering ground works for the Country's major utilities companies. The company operate to the highest environmental standards and manage operations as sustainably as possible, minimising waste and maximising use of recycled materials.

As part of their operations Complete Utilities Ltd recycles inert waste into Type 1 unbound sub base to meet the specifications of Highways Authorities and Utilities Committee (HAUC) and Highways Agency with reference to the Specifications for Reinstatement of Openings in Highways, Manual of Contract for Highway Works and the Specification for Highway Works.

To provide clients with assurances that the recycled materials produced meet the appropriate requirements Complete Utilities Ltd has developed this Quality Protocol, in accordance with the Waste & Resources Action Programme (WRAP) guidelines.



1.0 Production Site and Products

1.1 Site of Production

This Quality Protocol has been produced for the production of recycled aggregates by Complete Utilities Ltd at their site at Overton Farm, Maisemore, Gloucester, Gloucestershire.

1.2 Regulatory Details

1.2.1 Planning Permission

Planning permission reference 08/00597/CM granted by Gloucestershire County Council on the 29th July 2008 provides for the recycling of inert wastes at Overton Farm.

1.2.2 Waste Regulation

Complete Utilities Ltd has an environmental permit, reference no. EPR/FB3935RX dated 16th April 2012.

1.2.3 Waste Carrier Details

Complete Utilities Ltd is a registered waste carrier, registration no. CBDU98055.

1.3 Products

1.3.1 The recycled aggregate products produced at Overton Farm are:

1. Type 1 Unbound Sub base



2.0 Acceptance Procedures

- 2.1 To ensure that only inert materials suitable for recycling are accepted on site the following procedures will be maintained at Overton Farm.
- 2.2 Vehicles arriving at the site with material shall only be accepted with a completed Waste Transfer Note.
- 2.3 The Waste Transfer Note must detail:
- The name of the producer or carrier of the waste
 - The location where the waste was produced
 - An accurate description of the waste
 - The European Waste Category Code for the waste
 - Pre-treatment status of the waste
 - Any other information required by the Duty of Care legislation
- 2.4 On arrival the site operator will check the waste transfer note complies with the accepted European Waste Category Codes below (see section 2.11). Non complying waste will not be accepted and the vehicle should leave without depositing its load.
- 2.5 The load will then be visually inspected by the site operative to ensure it complies with the description and European Waste Category coding. The site operator will then undertake a visual inspection to confirm the load complies with the waste transfer note description and coding and also that there are no visible amounts of foreign materials.
- 2.6 Any loads which do not conform to the description or coding will not be accepted and the vehicle should leave without depositing the load. A Rejection Notice (Appendix A) will be completed and given to the driver or supplier with a copy kept by the company. The rejection notice shall state why a load was rejected for processing detailing the reason for non compliance, e.g. wrong European Waste Category code, excessive levels of foreign materials etc.



- 2.7 When a load is accepted the vehicle will then be directed over the weighbridge and a weighbridge ticket issued. The vehicle shall then be directed to the storage area to deposit its load.
- 2.8 At the storage area loads will have a further visual inspection. The inspection shall confirm that the deposited load complies with the waste transfer note description and EWC coding and also that any visible amounts of foreign materials do not exceed the maximum tolerances of 1%.
- 2.9 Unsuitable deposited loads not meeting the acceptance criteria will be rejected and a rejection notice completed. The rejected load will either be directly reloaded and removed from site or placed in the reject area for later removal from site.
- 2.10 For all accepted loads the Site Operator shall initial the Waste Transfer Notes and enter the loads details in the Register of Deliveries (Appendix B). Waste Transfer Notes, Weighbridge Tickets and Rejection Notices shall be kept in the main office for a minimum period of 6 years.
- 2.11 Accepted European Waste Categories
Material which complies with the following European Waste Category (EWC) Codes will be processed into recycled aggregate.

EWC	Description
17.01.01	Clean Concrete
17 01 02	Bricks
17.01.03	Tiles and ceramics
17.01.07	Mixed Concrete, brick, tiles and ceramics
17.03.02	Bituminous Material not containing dangerous substances
17.05.04	Inert Soil & Stones including gravel
17.05.08.	Crushed rock, sand, clay, road base, and track ballasts and planings





2.12 Foreign Materials

Foreign Materials include wood, plastics, asbestos, rubber, metal, plaster, organic material. The maximum acceptable level of foreign material in any load is 1%.

2.13 Suppliers

2.13.1 All suppliers will be informed of the Waste Acceptance Procedures to ensure that they only supply acceptable material. They will be informed that if they supply unsuitable loads which do not conform to the Waste Acceptance Procedures their material will be rejected and not accepted on site.

2.13.2 Suppliers need to demonstrate that they are a registered Waste Carrier.



3.0 Factory Production Control System

3.1 Administration and Responsibilities

3.1.1 Management

The responsibility for maintaining the Factory Production Control (FPC) System will be held by the Managing Director. Direct responsibility for the daily operations under the FPC will be the Recycling Site Manager.

3.1.2 Management (Managing Director) will undertake an annual review of the FPC as appropriate in response to changes in aggregate specifications, legislation, and use of new plant or production techniques. The purpose of the review is to ensure that the Quality Protocol is operating effectively with the production of a consistent quality recycled product. In addition there will be 6 monthly internal audits by the Recycling Site Manager which will include the review of all test result data.

3.1.3 Management (Office Manager) will ensure that the Quality Protocol, and any up dates or reviews, is communicated to all staff involved in the production of the recycled aggregate products. A full and up to date copy of the Quality Protocol will be kept on site and at the main office at all times.

3.1.4 The Office Manager will be responsible for maintaining all records relating to the production of recycled aggregate covering:

- Waste Transfer Notes
- Weighbridge Tickets
- Register of Deliveries
- Rejection Notices
- Test Sampling and Result Records
- Mobile plant maintenance and inspection records



3.1.5 Operational Staff

All members of staff involved in any stage of the production of recycled materials will be fully conversant with the contents of the Quality Protocol. Site staff will be given training by the Recycling Site Manager in respect of their duties under the FPC and will be responsible for implementing the FPC as relevant to their daily work activities.

3.1.6 Sub Contractors

Any sub contractors involved in the production process will be supplied with a copy of the Quality Protocol and must comply with the FPC as relevant to their work.

3.2 Method of Production

3.2.1 A flow diagram of the main steps in the Method of Production is provided in Appendix C.

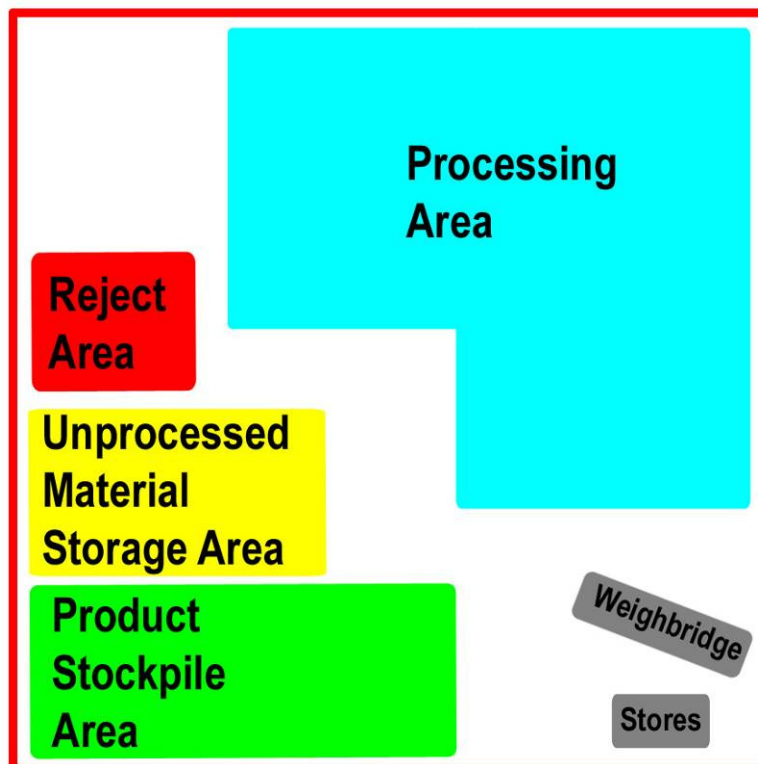
3.2.2 After acceptance of materials in accordance with the details outlined in section 2 above materials will be deposited in the unprocessed material storage area, see schematic layout plan.

3.2.2 In accordance with the waste acceptance procedures mentioned in section 2 above, reject loads not immediately removed from site will be placed in the Reject Area. Material in this area will be kept separate from all other stockpiles of materials to avoid any cross contamination.

3.2.3 The site operator will examine the deposited material in the storage areas and remove any foreign material by hand. A bin will be maintained on site for the storage of any such material prior to its removal from site to an appropriate disposal site.



Figure 1: Schematic Layout of Processing Operations at Overton Farm, Maisemore, Gloucestershire



3.3 Processing

3.3.1 Stockpiles of Material to be Processed

All material which has been accepted on to site will be stockpiled prior to processing. Stockpiled materials shall be inspected on a daily basis by the site staff to ensure there are no issues that could affect product quality. The inspection will look to at conditions such as contamination or moisture levels. Where the condition of the stockpile is such that the material would not be suitable for processing it shall be removed to the reject area and the details of the rejected material recorded.

3.3.2 Material will be removed from the stockpile and processed through the screen. The material which passes the 600mm grid will be fed into the Agg-Wash. The oversize from the screen will be sent through the crusher and will then be fed into the Agg-Wash



3.3.3 Operating procedures for all plant on site is contained in Appendix D.

3.4 Production of Type 1

3.4.1 The material from the wash plant will be mixed on a 1:1:1:1 ratio and will be stockpiled as Type 1.

3.5 Testing

Product testing shall take place in accordance with the testing regime outlined in section 4 below.

3.6 Non Conforming Products

The site manager shall be responsible for inspecting products on a daily basis. Where appropriate 'non conforming' products may be directed for reprocessing or rejected to the reject area. Where it is necessary to take corrective action for non conforming products, including delivered product found to be non conforming, details will be fully recorded. The site manager shall review the processing operations and take actions as necessary to address the problems.



3.9 Storage of Product

Each product shall be clearly marked and kept separate from other products and materials to prevent contamination. The site manager shall inspect all stockpiling areas on a daily basis and where there is any issue affect product quality, e.g. cross contamination or excessive moisture levels, corrective action shall be taken as appropriate e.g. reprocessing or rejection of product.

3.10 Supply of Recycled Product

All vehicles collecting product shall first weigh in whereupon they shall be given a Loading Authority Ticket, see Appendix E. The site operator will load the product and complete the relevant details on the loading authority ticket. The vehicle will be weighed again and the weight recorded. The loading authority ticket must also confirm whether the vehicle leaving the site is sheeted.

3.11 Training

All personnel involved in the process will be trained to conform with the Protocol and other relevant legislation. All training records will be kept and maintained at the general office. Only suitably qualified and trained staff will be allocated assigned tasks in the Protocol.



4.0 Testing Regime

- 4.1 The testing regime has been developed reflecting the nature of the waste materials accepted and the rate of throughput at the site. Product performance compliance testing will be carried out at varied frequencies depending on the product and test. A test schedule will be prepared and maintained by the office manager and a copy kept on site.
- 4.2 Daily product records will be kept by the site operatives and samples will be sent for testing in accordance with the test schedule. All samples will have the following details recorded: sample preparation date, test type and name of production facility.
- 4.3 The sampling, including the preparation of samples, shall be undertaken by an independent consultant with the samples sent to a UKAS accredited laboratory. Results of the testing will be kept at the general office and the site manager shall undertake a review of the test results every six months.
- 4.4 To ensure the product specifications comply with the current Highways Agency Specification for Highway Works the testing regime has been developed taking account of the guidance for these materials. Details of the tests and testing frequencies are provided below.

4.5 Testing Regime for Type 1

	Test	Frequency
1	Constituents analysis	Monthly
2	Particle Size Distribution (Grading)	Monthly
3	Plastic Limit	Annual
4	Los Angeles abrasion	Annual
5	Frost Heave	Annual
6	Magnesium Sulphate Soundness	Annual
7	Chemical Analysis – PAH & Phenol	Annual
8	TRRL Sulphates	Annual



5.0 Plant, Equipment and Stores

5.1 The mobile plant used to process material includes:

- Powerscreen Commander Feeder
- Powerscreen Agg Wash MRP 50
- Warrior 1400 Dry Screen
- RM 60 Rubble Master Crusher
- Loading Shovel
- 360⁰ excavator

5.2 Additionally other hand tools and equipment, including testing equipment, will be kept on site and stored in the maintenance shed.

5.3 The site manager will be responsible for ensuring all plant is maintained in a good working condition with regular inspections, testing and maintenance undertaken in accordance with manufacturer's specifications and a maintenance schedule, see Appendix F.



6.0 Documentation

6.1 The following documentation shall be maintained as part of the Quality Protocol procedures

- Waste Transfer Notes
- Weighbridge Tickets
- Register of Deliveries
- Rejection Notices
- Production Records
- Non Conforming Records
- Sampling Result Records
- Loading Authority Tickets
- Mobile plant maintenance and inspection records
- Waste Exemption Registration

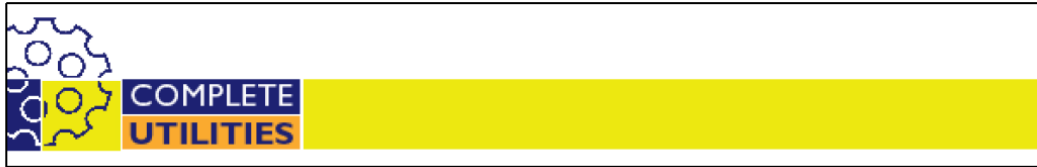
6.2 Record Keeping

All records shall be kept by the general office for a minimum period of three years. All records shall be made available to the customer on request.



Appendix A Example of Rejection Notice





Rejection Notice

Recycling Depot Address: Complete Utilities Ltd Overton Farm Maisemore Gloucestershire

The waste load has been deemed as failing the acceptance criteria for recycling aggregates.

Customer delivering load:
Company contact advised of load failure:
Date:

Details of Load

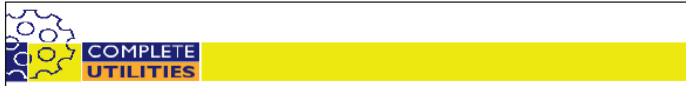
Date:	Time:
Name:	Signed:
Comments/Reason for Rejection:	

*** Copy for Supplier and One copy for company records*



Appendix B Register of Deliveries





**REGISTER OF DELIVERIES AND
COLLECTIONS**

SHEET NO:	WEEK COMMENCING MONDAY:
SUPPLIER OF WASTE:	WASTE CARRIER REG:
TYPE OF WASTE LICENCE:	WASTE BROKER REG:
TONS CARRIED OVER FROM PREVIOUS WEEK:	

RECORDS OF DELIVERIES							RECORDS OF COLLECTIONS			Signed on behalf of customer
WTN No	Date	Waste Type and EWC Code	Address Waste Produced	Quantity by weight IN	Accepted or Rejected	Rejection Note No	Date	Product type	Quantity by weight OUT	

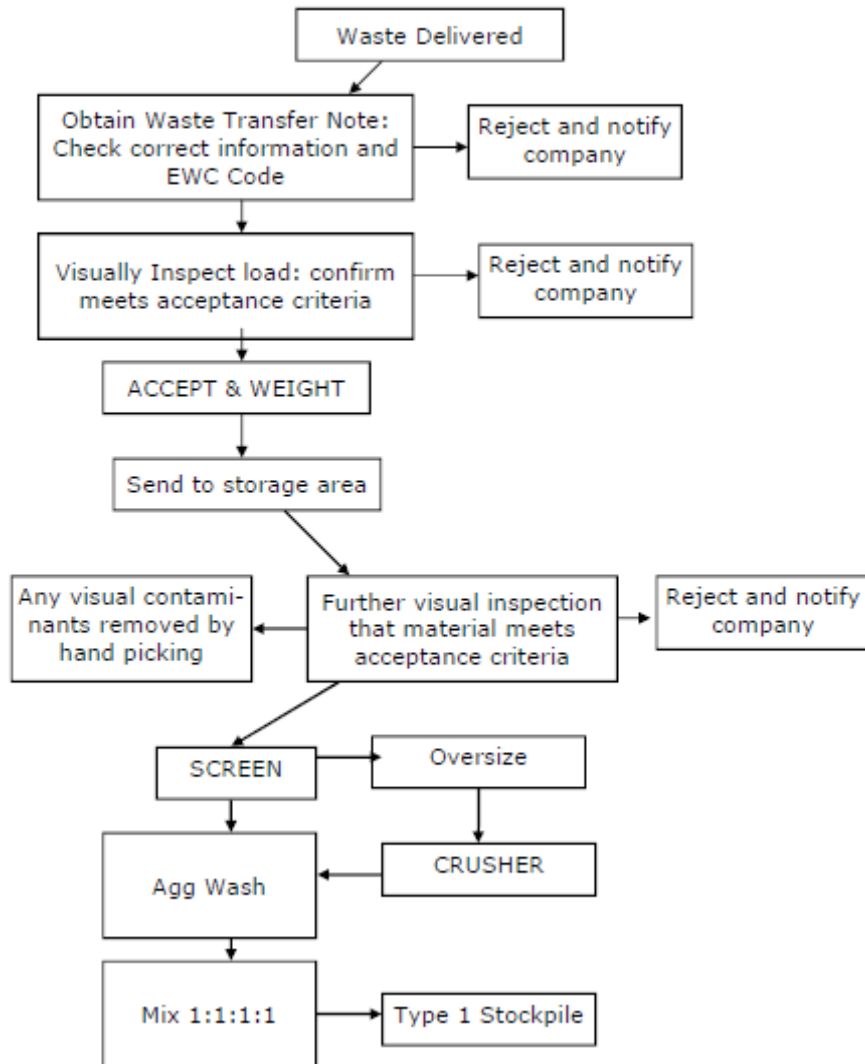


Appendix C Method of Production Diagram





Method of Production Diagram



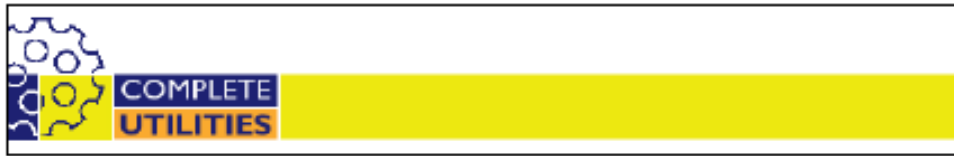
Appendix D Operating Procedures for Mobile Plant



Appendix E Loading Authority Ticket



Loading Authority Ticket - Recycled Aggregate



Customer:
Collected From: Complete Utilities Ltd, Overton Farm, Maisemore
Date:

Empty Weight:
Product:
<input type="text" value="Type1"/> <input type="text" value="Other"/>

Final Weight After Loading:

Is Vehicle Sheeted?	<input type="text" value="Yes"/>	<input type="text" value="No"/>
----------------------------	----------------------------------	---------------------------------

Signed on Behalf of Complete Utilities Ltd:
Print Name:
Signed on Behalf of Customer:
Print Name:

Quality Statement: This recycled aggregate product was produced under a Quality Protocol operated by Complete Utilities Ltd in accordance with the WRAP guidance.

** One copy to Supplier and one copy to company*



Appendix F Maintenance Schedule for Mobile Plant



Appendix G Glossary



Appendix G

Glossary

Compressive strength

The capacity of a material to withstand axially directed pushing forces. When the limit of compressive strength is reached, materials are crushed.

Frost Heave Susceptibility

The term frost heave is referring to the phenomena where a road will actually "heave", i.e. rise up above its normal level due to the action of frost.

The test is primarily intended as a method to establish whether an aggregate from a particular source is likely to be frost susceptible when used in road pavement construction.

Grading

The testing for grading is to establish the size distribution of a material.

Los Angeles Test

The purpose of the test is to determine the strength of the aggregate and how easily it breaks apart.

Magnesium Sulphate Soundness

A test to establish the weathering properties of an aggregate.

Sub-base

A range of aggregate types used to provide structural support below roads and also for buildings.

TRRL Sulphates

Testing to establish the level of sulphate content.



Type 1

A specification for granular materials used as sub-base, as defined by the Specification for Highway Works, clause 803.

800 Series

The grouping of specifications, within the Highways Agency's Specification for Highway Works (SHW), for aggregates used in sub-base.

