



HEVASON & CO.

QUALITY MANUAL FOR PRODUCTION OF AGGREGATES FROM WASTE AT DORRINGTON QUARRY

REF: HE/QMP/1.00/2021



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FOREWORD

This document presents the H Evason & Co Quality Manual for the manufacturer of aggregates from inert wastes at the Dorrington Quarry facility. It has been based on the WRAP “Quality Protocol for the production of aggregates from inert waste” further complemented by the Factory Production Control Annexes of the European Standards on aggregates.

This Manual has been developed using the information presented in AggRegain’ Quality Module, in particular the Quality Tool, which contains examples and complementary documents, developed specifically for Inert Waste.

INTRODUCTION

H Evason & Co ("HEC") was founded in 1959 operating out of sites in Dorrington with the Head Office and administration function at Wayford House, Dorrington Shropshire.

HEC operates from the production site at Dorrington Quarry, Shropshire which also forms the administrative office located. The company offers a total recycling service of high quality materials for use in the construction industry and final disposal of inert wastes to their own landfill site operated at Dorrington under an Environmental Permit .

The products made include:-, 65-40mm stone, 40mm-6mm stone, 6mm down grit, 40mm-fines 6F5, 10mm-fine Top Soil, pipe bedding and engineering fills. These offer a sustainable alternative to quarry products and give a zero waste option to help conform to Environmental Standards.

Quality, Cost Effectiveness and Recycling are the main objectives of HEC. The expertly trained personnel, with extensive knowledge and experience in the industry have the required resources to produce large stocks of aggregate to cope with the construction industry demands.

HEC specialises in recycling low grade waste into top quality products. The service is backed up by UKAS laboratory testing for gradings, and chemical analysis, thus assuring total customer commitment and satisfaction.

Quality controls are required for the production of aggregates from waste in order to ensure customer satisfaction and help to demonstrate that the customers waste has been recovered.

In general, a Quality Management System includes four linked processes, namely:

- Management Responsibilities
- Resource Management
- Product Realisation
- Measurement, Analysis and Improvement

In this document, the four processes mentioned above are dealt with in the following sections:

Management responsibilities are described in the first section, together with other staff's responsibilities.

Resource management, i.e. how to manage people, suppliers, equipment and stores, is dealt with in the second section.

Product Realisation is covered in the section titled "Method statement of production", where the input materials, processes and products relevant to each site the QMS relates to should be described.

Measurement, Analysis and Improvement is described in the "Factory Production Control" section which details the controls to be imposed to monitor production and ensure quality of end products.

The principles described in the "Method Statement of Production" and "Factory Production Control" sections are implemented in the Quality tool within AggRegain' Quality Module and in section 5 "Implementation of the Method Statement of Production and the Factory Production Control" of this Manual.

1: MANAGEMENT (AND STAFF) RESPONSIBILITIES

The Management

In general, the management of HEC has the responsibility for introducing and maintaining the Quality Management System, including defining and ensuring the communication of a suitable quality policy and related quality objectives. The managers are also responsible for conducting periodical reviews of the whole system to ensure its continuing suitability and effectiveness.

The management is responsible for ensuring that:

- responsibilities and authorities are defined and clearly communicated within the organisation; and that
- measurable quality objectives and product requirements are established at relevant levels and functions within the organisation.

The management team and responsibility for quality control are set out in the HEC Company Organogram presented below, showing who is responsible for looking after the Quality System, from its implementation to its performance.

The operational staff

All members of staff follow a procedure which is part of the Quality System and therefore will be responsible for the day by day implementation of the QMS.

As a consequence, procedures which are set in the QMS clearly identify responsibilities and tasks for each relevant stage of the production process.

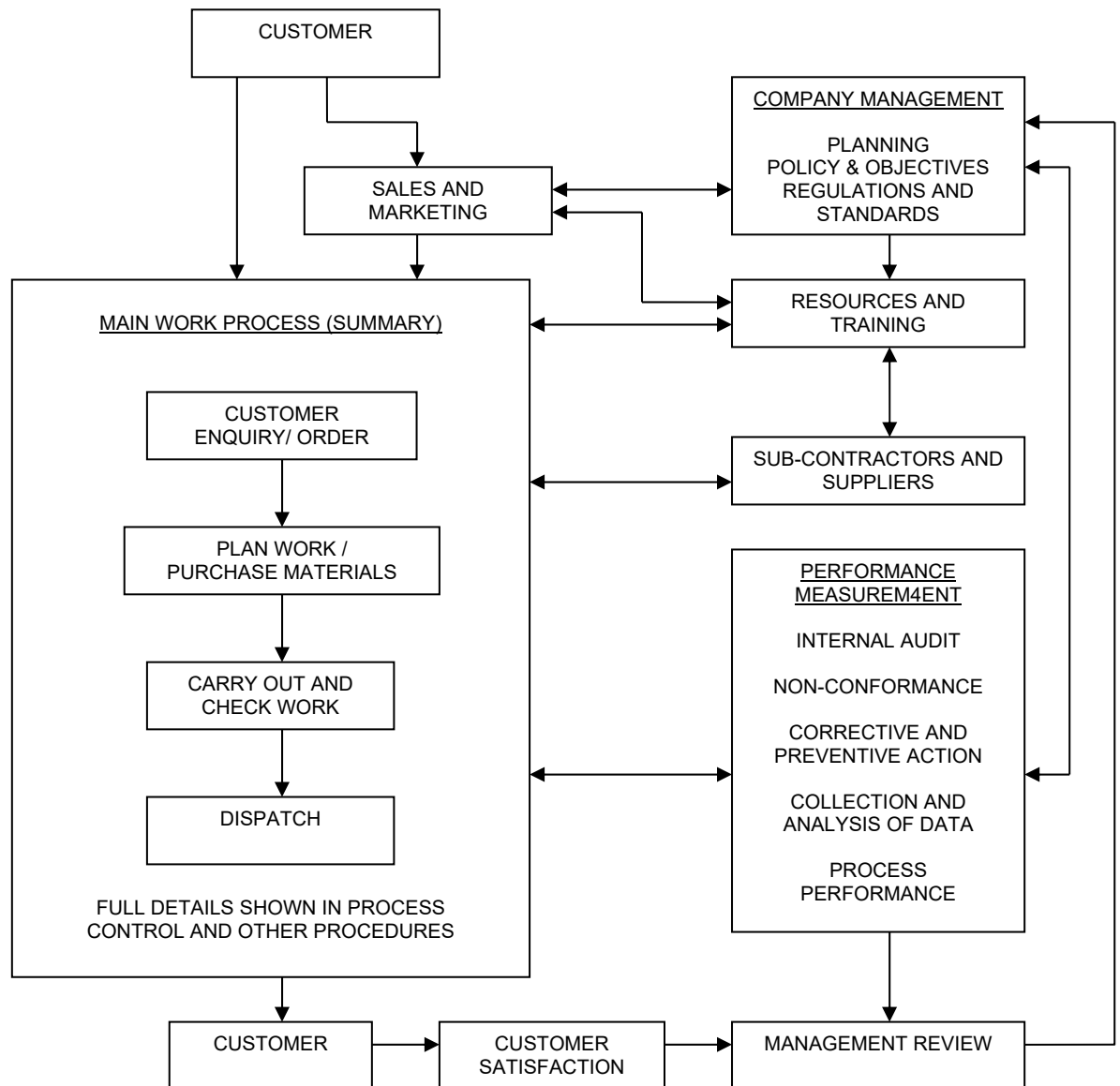
Staff performing work which affects product quality are adequately informed and trained with regards to the relevance and importance of their activities and how they contribute to the achievement of the quality objectives.

Figure 1: Company Organogram

The process

All members of staff follow a procedure which is part of the Quality System and the process is presented at Figure 2.

Figure 2: Process Diagram



2: RESOURCE MANAGEMENT

People

This section provides information on and for the staff working in the organisation and/or site:

- Roles and staff are set out on the Company Organogram presented at Figure 1. Job descriptions are issued to all personnel as part of the initial appointment and site induction and these are available to be inspected at the Company offices. The job descriptions set a description of their responsibilities, and a clear reporting structure;
- Details of the procedures for recruiting and training staff, including identification of staff responsible for identifying the need for and managing the recruitment and training;
- Methods of communication and staff involvement in the Quality Management System are carried out using tool box talks and e mail newsletters.

Operational Responsibilities within HEC

Managing Director – Mark Evason:-

Directs and controls the activities of the business in order to achieve business goals. These include:-
Setting and promoting vision, mission and goals
Management and succession planning of the executive team
Promoting the brand
Inspiring and motivating the organization
Operations Manager.
Plans and delivers campaigns to meet customer requirements.
Manages Production.

Operational Support:-

Mark Evason:

Assists with Management of production.
Directs subcontractors
Ensures environmental compliance.
Senior Site Representative
Safe systems of work

Technical Support:-

Andy Morris:

Product and Raw material sampling and testing
Safety inspections
Environmental Consultancy

Supervisor/ Controller:-

Mark Evason: Operates weighbridge and records
Responsible for Waste Transfer Notes
Checks quality compliance of incoming material
Safety advisor

Personnel, Administration and Accounts:-

Mark Evason – Site Representative for Head Office
Administration Assistant

Subcontract Operatives:-

Provide and Maintain operational plant
Responsible for Quality and Health & Safety compliance
Meeting production requirements

Quality Representative:-

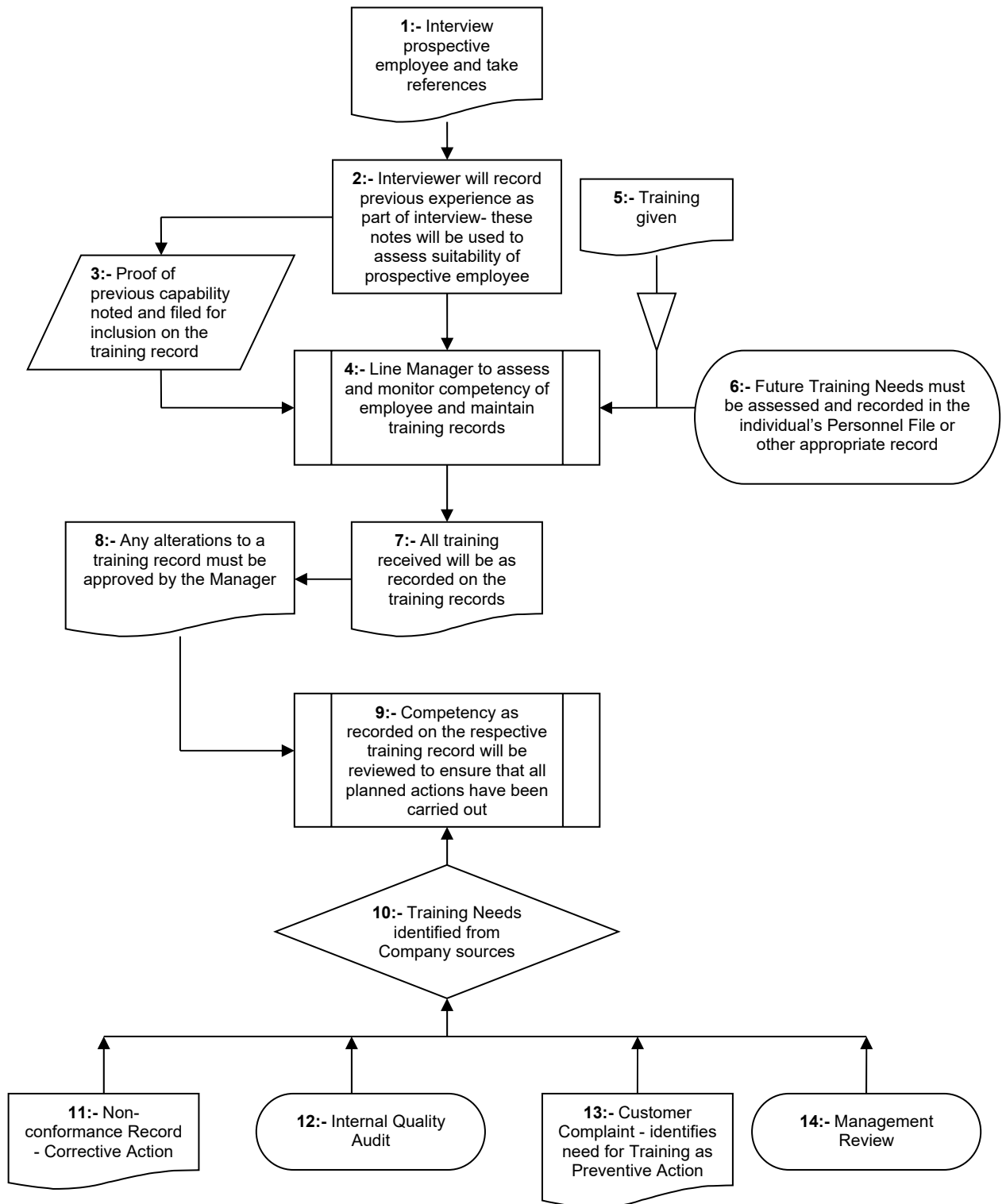
Irrespective of all other operational responsibilities, the Quality Representative is responsible to the Managing Director for Quality Auditing and has the responsibility and authority that includes:-

- a) ensuring that the processes of the quality management system are established and maintained
- b) reporting to top management on the performance of the quality management system, including needs for improvement
- c) promoting awareness of customer requirements throughout the organization
- d) liaison with external parties on matters relating to the quality management system

The recruitment, appraisal and development of all employees (staff and operatives) are processes identified by HEC, to enable the organisation and/or sites to meet the overall Company objectives.

Figure 3 shows the training requirements for the company identified in a flowchart.

FIGURE 3: TRAINING - SUMMARISED FLOWCHART



Suppliers

All suppliers of products or services must be reviewed to ensure that they can meet the HEC's requirements. This review will include (as appropriate):

- a) Past history and performance.
- b) Evaluation of a trial order, samples or activity.
- c) Evidence of registration by a recognised authority.
- d) On site assessment of their capability and quality system.
- e) Comparative test results with the same or similar products.
- f) Recommendation or references from other users.
- g) 100% product verification of all services/products supplied.
- h) Financial viability.

The record of approved suppliers will take the form of a computerised Approved Supplier Listing (SAGE). This list must include any Supplier specified or nominated by the customer.

Supplier approval must be reviewed at least once per year. This will be based on their performance when meeting orders placed with them over the previous year. The results of the review will be addressed at the Management Review.

Any problems must be investigated and where they can not be resolved the supplier will no longer be used.

The Company uses approved suppliers on the Approved Supply List. A copy of the Approved Supply List is available at the site office, which sets out the procedure adopted for acquiring suppliers and/or checking their ability to provide input materials most suitable for the sites/process.

Regulatory requirements apply as follows:

- suppliers must demonstrate that he/she either:
- holds an Environmental Permit; or
- is a registered Waste Broker; or
- is registered for an exemption from permitting;
- the carrier of such material must be a registered Waste Carrier.

The supplier is sent specifications and tolerances of the materials required.

Plant, equipment and stores

Facilities and plant need to be well maintained and in good working order to ensure that the staff can operate safely and efficiently to the quality requirements.

Plant and equipment

All plant and equipment should be sourced from approved suppliers, and records are maintained of identification and details.

The Factory Production Control requires that the organisation should provide for the control, calibration and maintenance of inspection, measuring and test equipment.

Plant and equipment, including testing tools, are also serviced regularly and calibrated where applicable.

Stores

Storage areas for goods such as input materials, equipment and products, have been identified at all sites to ensure that such goods are stored to prevent damage and deterioration and can be maintained in accordance with the supplier's recommendations and regulatory requirements.

3: METHOD STATEMENT OF PRODUCTION

This method statement has been prepared to detail:

- . Materials accepted for processing
- . Processes used
- . Manufactured products relevant to the site.

Materials accepted for processing

The source material used in this process is 'utility spoil'; this is the material that results from the excavation of underground pipework for repair and maintenance consisting mainly of soil, stones, sub-base and weathered asphalt, and imported excavation materials sourced from local works. These materials are classified as inert within the ALS contract, confirmed by historic data on chemical composition and leachability.

Selected construction and demolition wastes are added to the processed spoil to regulate the mineral content of the finished products. Construction waste is incorporated in accordance with EA Framework guidelines. The European Waste Catalogue entries for these construction industry materials are:

Table 1

EWC Code	Definition
17 05 04	Soils and stones including gravel
17 05 08	Crushed rock, sand, clay, road base and planings, track ballast
17 01 07	Mixtures of concrete, bricks, tiles and ceramics

HEC has, over a period of 20 years, established a record of spoil testing confirming that the spoil processed complies overall with the definition of inert materials. However the testing has also established that some spoil may exceed certain chemical standards at times. Segregation of suspect spoil, combined with additional assessment and testing has been introduced to maintain product quality and safeguard the environment. Careful management of the treatment process ensures that products comply with the appropriate British Standards, EA guidelines and customer requirements.

The main potential risks identified are:

- The presence of phytotoxic metals (usually derived from local soils)
- The presence of fresh tarmac based products and derivatives
- The presence of petrochemicals (from leaks and spillages)
- The presence of asbestos based materials (pipe fragments)
- The presence of other non-aggregate materials potentially hazardous to human health (e.g.: metal fragments, litter)

Storage and treatment procedures have been developed to mitigate these risks and ensure that products comply with the required standards.

The products produced include engineering fills and industrial soils. These are carefully controlled to comply with WRAP and HAUC specifications as outlined below:

The materials accepted at the site are set out in the Waste Acceptance Criteria for the sites presented at Appendix B setting out;

- materials accepted at the operations;
- characteristics required for the materials to be accepted, including any levels of undesired and hazardous contaminants.

This information is also used as a basis for the acceptance criteria applied on consignments and as information for suppliers.

As the incoming materials are waste, recognisable definitions (such as the one used in the Waste Transfer Notes, derived from the European Waste Catalogue) are used to identify acceptable input materials. Such wastes are clearly assigned to a feedstock category, as highlighted in section 8 “Weighing and categorising” within this document and exemplified in Step 3 of the Quality tool within AggRegain’ Quality Module.

Contaminants (foreign materials, hazardous waste) that can or cannot be accepted (with applicable limits) are clearly defined as described in section 7 “Receipt of waste materials” within this document and exemplified in Step 2 of the Quality tool within AggRegain’ Quality Module.

Processes used

The primary processes used on all HEC treatment and recycling sites includes;

Crushing

This is the process where material, when delivered to site, undergoes primary bulk reduction from a large mass to a usable size. This is done by means of a crusher (mobile plant). Details of the type of crusher to be used on site are contained in Appendix C.

The jaw crusher to be used, defined as mobile plant as meaning “plant which is designed to move or be moved on roads or otherwise”.

Screening

The basic principle of screening materials on site is to separate materials of pre-defined size groups, each group comprising particles, which will pass through an aperture of a given size but will not pass through a small aperture. The results are normally expressed as “passing” and “retained on” and the purpose for which the material screened is utilised, determines the performance criteria.

Process Flow

The treatment process for spoil which meets the acceptability standard consists of:

- Plastic followed by metal and wood are out-sorted
- Crushing and screening, together with high quality construction and demolition waste to produce <6mm, 6-40mm and 65-40mm
- 6-40mm screened with a magnet, blower and QC staff to remove any remaining pieces of wood, paper, plastic or asbestos (to a standard of <0.1% of each by weight)
- 6mm-dust and 6-40mm.40-65mm stored and blended to produce recycled roadstone

The process flow is presented at Drawing ESID 1.

Equipment List

The detailed equipment list is presented at Appendix C.

Manufactured products

The range of products that produced by HEC at the sites are set out in Appendix D. Please see section 12 “Finished products” of this Manual and Step 6 of the Quality tool within AggRegain’ Quality Module.

4: FACTORY PRODUCTION CONTROL

The Factory Production Control is implemented through section 5 “Implementation of the Method Statement of Production and the Factory Production Control”.

Information

The Factory Production Control (FPC) is defined in the Construction Products Directive as a control system to be introduced by the manufacturers to monitor their production, to ensure that the required product characteristics are achieved and maintained consistently by the output. Every aspect of this control system should be documented in a body of written policies and procedures, and as such is an integral part of the QMS.

More information on the general requirements of the FPC is set out in the Construction Products Directive and a copy is available from the HEC Head Office.

The FPC for production of aggregates is specified in each of the BS EN Standards relevant to aggregates, to ensure that they conform to the relevant requirements of the technical specifications themselves.

Implementation

The FPC is implemented through scheduled controls and tests on measuring equipment, raw materials and constituents, processes, machines and manufacturing equipment and finished products, including material properties in products. Most importantly, the system provides for conformity assessment and for the management of non-conforming products.

Each BS EN Standard on Aggregates describes the FPC and its minimum requirements in terms of:

- . Organization: responsibilities and management of the FPC;
- . Control procedures: manuals on procedures, documents and data control;
- . Management of production: required set of procedures which constitute the FPC (identification and control of materials and any hazardous material content, control of storage and stock conditions, traceability of product throughout the process);
- . Inspection and testing: testing equipment, procedures and frequencies*;
- . records: what needs to be recorded and kept;
- . Control of non-conforming product: actions to be taken on non-conforming products and corrective actions to avoid replication;
- . Handling, storage and conditioning in production areas: arrangements to be taken to ensure maintenance of quality during handling and storage;
- . Transport and packaging: responsibilities of the manufacturer and actions to avoid contamination of the product during those phases; and

- . Training of personnel: procedures to ensure appropriate training of personnel involved in the FPC.

*The set of obligatory minimum test frequencies for characteristics the product must have to conform to the Standard (and to be CE marked), is different for each aggregate type. Please refer to the table below for an overview of the relevant Standards and to section 12 “Finished products” of this document, corresponding to Step 6 of the Quality Tool within AggRegain’ Quality Module.

Table 2: BSEN Standards for Aggregates

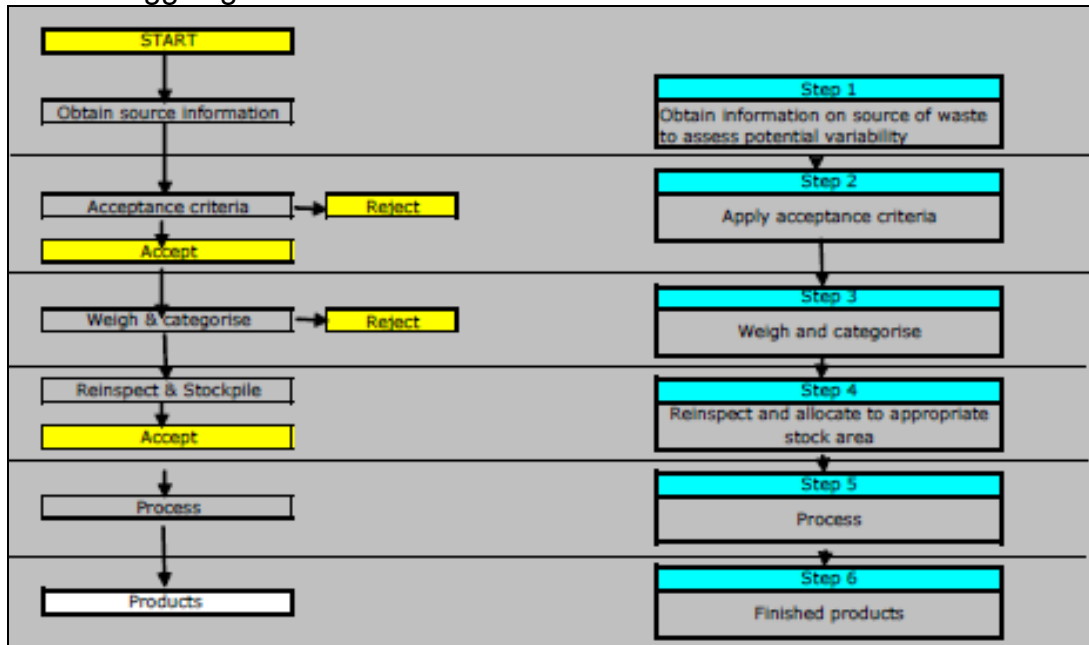
Product	BS EN Standard
General fill	
Capping	
Sub-base	
Aggregates for pipe bedding	

5: IMPLEMENTATION OF THE METHOD STATEMENT OF PRODUCTION AND THE FACTORY CONTROL PROCEDURE

The following sections deal with the implementation of the principles of quality as they apply to a generic process for the manufacture of aggregates from waste.

Each single section refers to a stage of the following flowchart presented at Table 3, as used in the Quality Tool within AggRegain' Quality Module (whose steps are shown on the right of Table 3). Such chart has been based on the flowcharts used in WRAP Quality protocols and has been used as the framework for developing more detailed descriptions of the processes used, as required by the Method Statement of Production:

Table 3: AggRegain Flow Chart



For each stage of the flowchart and corresponding step of the tool, a Quality Manual section has been developed.

Each section contains:

- an outline of the procedures to be set in the system and described in the Manual
- a reminder of the responsibilities for the actions required
- a description of the records to be maintained, with reference to templates with examples available from the Quality Tool within AggRegain Quality Module.

6: INCOMING WASTE MATERIALS

This section refers to the “Obtain source information” stage in the flowchart shown in the “Implementation of the Method Statement of Production and the Factory Production Control” (section 3) and to Step1: “Obtain Information on Source of Waste to Assess Potential Variability” within the Quality Tool, available on AggRegain’ Quality Module website.

This section deals with the information required to obtain on input materials to satisfy the following requirements:

- . Regulations on Waste: Duty of Care
- . Aggregates standard: Factory Production Control

Information to be obtained

HEC are required by law to obtain and maintain certain records on the waste received for inspection by the relevant authorities.

In addition, the Factory Production Control requires that documentation detailing the nature of the raw material and its source. It is the responsibility of HEC to ensure that concentrations of any and all dangerous substances in recycled products are within the limits in force.

Therefore, as a minimum the following information is to be obtained:

- Regulatory information:
 - waste licence or registration of exemption
 - waste carrier/waste broker registration details
- FPC information:
 - Materials details (e.g.: type of waste)
 - Location of arisings (demolition site or plant)
 - Demolition or building contractor details/ supplier details
 - Date of demolition/arising/production

As a minimum, the Regulatory information from the Waste Transfer Notes that must accompany each and every load of waste delivered to you.

Other details may have to be obtained from the “supplier”. All of the information should be available on the WIF Form detailed in the Waste Acceptance Criteria set out in Appendix B.

A copy of a Company Duty of Care note is presented at Appendix E.

The Regulatory information must be available for every load, while the FPC-type information is needed only once per supply (where supply identifies the whole batch of a material originated in a place and that is delivered to you in a number of consignments).

The information is recorded and the records maintained for the statutory period of two years and until a successful surrender application has been made for the landfill site.

Responsibilities

As stated in Section 2 under Resource Management the following people are responsible for collecting environmental and quality data of incoming waste to be used for production of secondary aggregates.

Operational Support; - Mark Evason
Technical Support; - Andy Morris,
Supervisor/ Controller; - Mark Evason

Records to be maintained

The information on the supplies will be recorded and/or filed as appropriate and maintained as it will be required for future inspection and reference. You should provide for this by identifying where and how the information should be kept.

Records of material supplies are to be kept electronically at head office and Duty of Care Transfer Notes, see Appendix E, will be kept for a minimum period of 2 years.

7: RECEIPT OF WASTE MATERIALS

This section refers to the “Acceptance criteria” stage in the flowchart shown in the Implementation of the Method Statement of Production and the Factory Production Control section and to Step 2: “Apply Acceptance Criteria” within the Quality Tool, available on AggRegain’ Quality Module website.

This section covers the acceptance of waste materials at all HEC facilities. Full details are set out in Appendix B.

- . Regulations on Waste: the Duty of Care requires that the waste received at the Dorrington site has a traceable owner and origin and it is transported by authorised people
- . Aggregates standard: the Factory Production Control requires the Company operate a control on materials and any dangerous substances it may contain.

Procedures for the receipt of materials

Arrival

All spoil will be inspected before loading. Loads which are not suitable will be identified and managed separately. Spoil stocks will be tested periodically for compliance with CLEA/SGV and WAC standards.

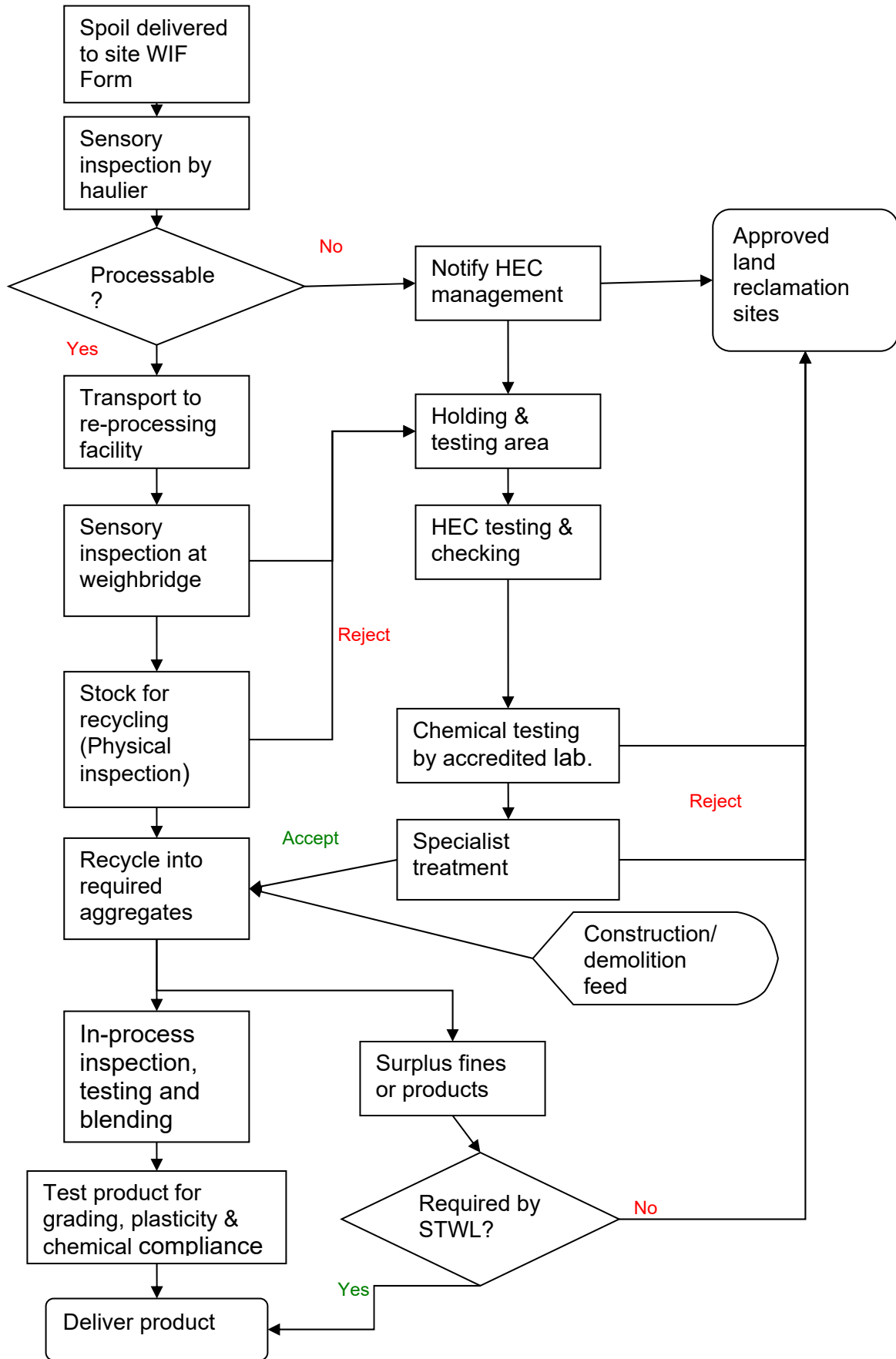
Acceptance and storage

All spoil will be visually inspected before entering the treatment facility. Loads identified as unsuitable will either be rejected or directed to a separate storage area or sent direct to the landfill site. A typical spoil will be physically inspected and tested as required to confirm its suitability for recycling.

An inspection and acceptance procedure flowchart is presented at Figure 4.

All materials will be stored in accordance with the published site plan. Specific inspections for weighbridge acceptance are detailed below.

FIGURE 4: WASTE ACCEPTANCE FLOWCHART



Inspection of utility spoil at Dorrington Quarry

Instructions for drivers

Before loading the driver must check that the load to be collected:

- Is free from significant amounts of fresh tarmac material
- Contains no visible asbestos
- Has no strong odour, particularly of organic materials or petrochemicals
- Contain no significant quantities of plastics, vegetation or paper
- Is reasonably dry

If the load has:

- A strong or unusual odour
- Large amounts of fresh tarmac present
- Large amounts of vegetation, plastic or paper
- Is particularly wet
- Contains visible asbestos cement materials

Do not load. Contact HEC management and request instruction

Large pieces of plastic or wood should be removed, put to one side and brought to the attention of the carrier and or producer of the waste(**Caution: Use PPE**).

Asbestos must be handled in accordance with the agreed protocol

Loading can then proceed as normal.

Inspection of incoming spoil and demolition materials

Instructions for Weighbridge operator

On arrival the weighbridge operator must check that the load to be accepted:

- Is from an approved source and has the required Waste Transfer Note or 'Season Ticket'
- Contains less than 5% fresh tarmac material
- Contains no visible asbestos
- Has no strong odour, particularly of organic materials or petrochemicals
- Contains no significant quantities of plastics, vegetation or paper

Inspection should be carried out using CCTV and, if required, physical examination of the load

Note: Loads from sources which do not have prior approval must not be accepted, unless it is from a known source local to the site

If the load has:

- A strong or unusual odour
- Large amounts of fresh tarmac present
- Large amounts of vegetation, plastic or paper
- Is particularly wet

Photograph the load and record details on the ticket

Direct the driver to offload in the holding and testing area

Inform site personnel

Inform HEC management that an unacceptable load has been received

Inspection of incoming transfer station waste

Instructions for Weighbridge operator

On arrival the weighbridge operator must check that the load to be accepted:

- Is from an approved source and has the required Waste Transfer Note or 'Season Ticket'
- Contains no visible asbestos
- Has no strong odour, particularly of organic materials or petrochemicals
- Contains no significant quantities of plastics, vegetation or paper
- Is not unduly wet

Inspection should be carried out using CCTV and, if required, physical examination of the load

Note: Loads from sources which do not have prior approval must not be accepted

If the load has:

- A strong or unusual odour
- Large amounts of fresh tarmac present
- Large amounts of vegetation, plastic or paper
- Contains asbestos or other solid contaminants
- Is particularly wet

Inform HEC management that an unacceptable load has been received and seek instruction. If accepted the load must be directed to the holding and test area. Acceptance will be subject to acceptance by the customer of increased processing costs.

Accepted loads

All spoil will be visually inspected before entering the treatment facility. Loads identified as unsuitable will either be rejected or directed to a separate storage area. Atypical spoil will be physically inspected and tested as required to confirm its suitability for recycling.

All materials will be stored in accordance with the published site plan.

Rejections

Loads not accompanied by a Waste Transfer Note should be rejected as non compliant with the legislation. You should specify how to deal with waste materials which do not satisfy your site/process specific materials requirements.

In the event that a load is non-conforming then a Non Conformance Form is issued.

The Company Non Conformance Procedure is set out at Appendix F. A specific protocol has been developed for any material containing asbestos and this is presented below as follows;

Dealing With 10% Bonded Asbestos Cement in Spoil and Products Supplied by H Evason & Co

The purpose of this procedure is to enable HEC to have a standard method of dealing with small amounts of 10% bonded Asbestos Cement which can find its way into spoil from suppliers and into products from HEC.

Scenario 1

HEC driver finds Asbestos Cement in spoil before loading onto his vehicles.

Action: HEC driver Informs Supervisor or Contract Manager who removes the Asbestos Cement from the spoil, double bags it and arranges disposal through third party waste management company licensed to transport and dispose of asbestos.

Scenario 2

HEC find Asbestos Cement in spoil whilst unloading at HEC facility.

Action: The Asbestos Cement is isolated, double bagged and disposed of by HEC. HEC notify supplier using their non conformance form and recover the cost of disposal from supplier.

Responsibilities

As stated in Section 2 under Resource Management the following people are responsible for collecting environmental and quality data of incoming waste to be used for production of secondary aggregates.

- Receiving and inspecting the load and accompanying documents

Responsible persons: lorry drivers, weighbridge operator, machine operator at disposal point/recycling facility

- Accepting or rejecting the load

Responsible persons: supervisors, management

Records to be maintained on deliveries

As a Statutory requirement, the Waste Transfer Notes accompanying the wastes received must be kept for at least two years. A record of the deliveries accepted are kept. A record of the loads rejected (with details on the reason for the decision) for future reference is also retained for up to 2 years.

8: WEIGHING AND CATEGORISING

This section refers to the “Weigh and categorise” stage in the flowchart shown in the “Implementation of the Method Statement of Production and the Factory Production Control” (section 5) and to Step3: “Weigh and categorise” within the Quality Tool, available on AggRegain’ Quality Module website.

The Factory Production Control requires your material to be put into stock in a controlled manner in an identifiable location.

Procedures for weighing & categorising of your waste

Once accepted, the waste is weighed and categorised using the internal feedstock categories.

Instructions for Weighbridge operator

On arrival the weighbridge operator must check that the load to be accepted:

- Is from an approved source and has the required Waste Transfer Note or ‘Season Ticket’
- Contains less than 5% fresh tarmac material
- Contains no visible asbestos
- Has no strong odour, particularly of organic materials or petrochemicals
- Contains no significant quantities of plastics, vegetation or paper

Inspection should be carried out using CCTV and, if required, physical examination of the load

Note: Loads from sources which do not have prior approval must not be accepted

If the load has:

- A strong or unusual odour
- Large amounts of fresh tarmac present
- Large amounts of vegetation, plastic or paper
- Is particularly wet

Photograph the load and record details on the ticket

Direct the driver to offload in the holding and testing area

Inform site personnel

Inform HEC management that an unacceptable load has been received

Records to be maintained on the received material

The following information/documentation must be recorded and/or held;

- Weight and feedstock category of the load
- Acceptance or rejection
- Any (internal) documentation reporting the identification of the load (if applicable)

All records are kept centrally at HEC Head Office and are used for invoice purposes.

9: RE-INSPECTING AND STOCKPILING

This section refers to the “Re-inspect and Stockpile” stage in the flowchart shown in the “Implementation of the Method Statement of Production and the Factory Production Control” (section 5) and to Step 4: “Re-inspect and Allocate to Appropriate Stock Area” within the Quality Tool, available on AggRegain’ Quality Module website.

This section covers the stockpiling of waste materials at the HEC treatment facilities.

The Factory Production Control requires material to be put into stock in a controlled manner in an identifiable location.

Procedures for re-inspecting and stockpiling waste

Different feedstock materials are stored separately (to avoid cross-contamination) and in the assigned area. It is a FPC and a QMS requirement. The separation is shown on the Process Flow Diagram presented at Figure 2.

Please refer to section 2 “Resource management” of this manual.

During tipping, operators would be checking the load to confirm the earlier categorisation and against the acceptance criteria:

- If the load is acceptable, it would be pushed up the relevant stockpile of feedstock.
- If the load does not conform to the acceptance criteria, the waste could be re-loaded on the truck straight away and sent back to the owner.

Confirmation of acceptance or rejection

Feedstock material is cleaned at the earliest convenient occasion by hand picking as Good Practice. Before the material is pushed up the stockpile, staff to perform an initial sorting, e.g. handpicking foreign materials such as wood, plastic, metals etc. Containers and or skips are provided for such contaminants, for facilitating their recycling or disposal.

Physical examination of stocked materials

Instructions for Shovel operator and Leading Hand

Following tipping the operator must examine the load for the presence of:

- Large pieces of wood, plastic or metal
- Significant quantities of fresh tarmac

- Signs of unusual or unexpected materials or liquids
- Asbestos

Large pieces of wood plastic or metal should be removed to the appropriate holding area. Asbestos should be removed prior to treatment and stored for disposal in accordance with the appropriate safe working procedure (Caution: Use protective equipment)

If the load does not conform in any other way the operator must:

- Complete a materials non-conformance form
- Remove the load to the designated holding and testing area
- Inform HEC management

Records to be maintained on the received material

The following records are to be kept at HEC Head Office;

- Acceptance or reject
- Any internal documentation reporting the identification of the load (if applicable).

10: PRODUCTION

This section refers to the “Process” stage in the flowchart shown in the “Implementation of the Method Statement of Production and the Factory Production Control” (section 5) and to Step 5: “Process” within the Quality Tool, available on AggRegain’ Quality Module website.

This section covers the production stage - from obtaining the feedstock from the stockpiles and ensuring that your equipment and plants are performing as expected.

The Factory Production Control requires that:

- . input materials, processes and products are suitably defined (see section 3 “Method Statement of Production” within this Manual) and that the frequency and nature of testing/inspection on the input materials, equipment and products in the process control documentation, including provisions for
 - stocked material being checked to ensure that it has not deteriorated during storage;
 - your equipment being calibrated and properly used
 - non-conforming products being properly managed and recorded.

Procedures for the production stage

Method statement of production

Please refer to section 3 “Method Statement of Production” within this Manual. The treatment process for spoil which meets the acceptability standard consists of:

- Plastic followed by metal and wood are out-sorted
- Crushing of the >50mm fractions, together with high quality construction and demolition waste to produce <6mm, 6-40mm and >40 mm
- 6-40mm screened with a magnet, blower and QC staff to remove any remaining pieces of wood, paper, plastic or asbestos (to a standard of <0.1% of each by weight)
- 6mm-dust and 6-40mm stored and blended to produce recycled roadstone

Process control (input materials and equipment)

To be suitable for recycling utility spoil must:

- Contain less than approximately 5% fresh tarmac material

- Have no strong odour, particularly of organic materials or petrochemicals
- Contain no visible asbestos
- Contain no significant quantities of plastics, vegetation or paper
- Comply with EA standards (CLEA/SGV) for inert materials

Waste Acceptance Criteria have been developed to ensure that spoil is suitable for reprocessing see Appendix D. Loads which do not comply with these standards require separate storage and additional treatment. Results of chemical analysis of spoil are available for a number of years, this has established that spoil normally complies with the requirements for inert materials. Spoil which is inert but not suitable for reprocessing (for example as a result of excessive moisture or clay content) is transported to approved, exempt land reclamation projects.

Spoil which is later identified as unsuitable for recycling will be stored separately and will be subject to a specific quality checking procedures and additional treatment as appropriate.

1) Input materials

Input waste sample regimes are set out in the Waste Acceptance Criteria presented at Appendix D. Depending on the quality of the incoming waste and the material end use, more or less strict testing on materials is considered possible.

As a minimum however, HEC ensure that:

- material has not degraded during storage (e.g. it is too wet because it has been exposed to rain, it has been mixed with other material etc.).
- the material is still acceptable.

2) Feed

A detailed process flow diagram is presented at Figure 2.

3) Equipment

Equipment used in the process flow as set out in Figure 2 is detailed in Appendix E.

Responsibilities

As stated in Section 2 under Resource Management the following people are responsible for collecting environmental and quality data of incoming waste to be used for production of secondary aggregates.

- Processing material and putting into stock
Responsible persons: weighbridge operator, machine operator at disposal point/recycling facility
- Accepting or rejecting the load

Responsible persons: supervisors, management

Records

Stock volumes are checked by survey and tonnage process records kept at HEC Head Office.

11: FINISHED PRODUCTS

This section refers to the “Products” stage in the flowchart shown in the “Implementation of the Method Statement of Production and the Factory Production Control” (section 5) and to Step 6: “Finished Products” within the Quality Tool, available on AggRegain’ Quality Module website.

This section covers the control and management of the finished products, from testing of their characteristics to stockpiling.

The Factory Production Control requires that:

- HEC have set out the frequency and nature of testing/inspection on the input materials, equipment and products in the process control documentation, including provisions for
- HEC products being tested for their properties, under the conditions stated in the Factory Production Control section of the applicable relevant European Standard (see section 4 “Factory Production Control” within this Manual for more information and a table with relevant Standards for a number of aggregates types)
- non-conforming products being properly identified and recorded
- HEC products being identifiable up to the point of sale as regards source and type.
- the results of the Factory Production Control are recorded.

Procedures for controlling and stockpiling your products

Process control (products)

The products produced include recycled roadstone, engineering fills and industrial soils. These are carefully controlled to comply with WRAP and HAUC specifications as outlined below:

Table 4: Process Control Testing Specification

Product	Description	Standard	Notes
GSB Type1	Granular backfill	BS EN 13242	See App
6mm-dust	Pipe bedding	BS EN 13242	See App
Engineering fills	A1, 6F3		See App
Industrial soils			See App

Non conformities

The Factory Production Control requires that you provide for product reprocessing, diversion to another application for which the non-conforming product is suitable, or complete rejection (with appropriate labelling). This is carried out by HEC under the Non Conformance Procedure, when material fails any testing either physical or chemical, presented at Appendix H.

Details on the non-conforming products and remedial actions are recorded and any corrective measures to ensure the material is brought back into specification. If material is so far out of specification then it is rejected outright and sent for direct landfilling at approved permitted landfill sites.

Product stockpiling

Products are stockpiled in designated areas. The products produced by HEC and specifications are presented at Appendix F. Products are stockpiled in a controlled manner to avoid cross contamination and deterioration.

Responsibilities

As stated in Section 2 under Resource Management the following people are responsible for collecting environmental and quality data of products and incoming waste to be used for production of secondary aggregates.

Operational Support; - Stephen Waldron

Technical Support Testing and Reporting; - Andy Morris, Sharon Morris

Testing

All products produced are sampled by the Technical Support Team.

Sampling of the processed/recovered product shall be carried out in accordance with BSEN 932-1. The following table sets out the minimum test frequencies, in accordance with the FPC system and detailed in the Table 5 below.

The following laboratories are used for HEC testing compliant with UKAS accreditation, namely:

Staffordshire County Council Highways Laboratory, Stafford
Test Houses Ltd, Ettingshall, Wolverhampton
Bureau Veritas, Leamington Spa

Table 5: WRAP Compliance Recycled Aggregate Testing Schedule

Property Description	BSEN test method	Minimum test frequency
General Description		Every incoming load by visual inspection
Aggregate composition including organics	Visual sorting of the plus 8mm fraction	1 per week
Grading Fines	933-1	1 per week
Content Particle	933-1	1 per week
Shape	933-1	1 per month

Daily process control for site materials is carried out by visual inspection by the plant operatives. Records of non-conformities are recorded in accordance with the procedure set out in Appendix H.

Health and Safety

All company employees are required to be familiar with and conform to the Company Health and Safety policy. This is given in full in the Company Health and Safety Manual, a companion to this document, but in summary:

- The Company operates a formal Management System for planning and monitoring the various aspects of the business. The management of safety is an integral part of the management system.
- All members of staff, contractors and their staff are responsible for their own Health and Safety. Individuals are expected to conform to the appropriate safe working procedures and to bring to management attention any hazards or 'near misses'. Failure to do so will be a disciplinary offence and may result in dismissal.
- In addition all employees are responsible for:
 - Observing the requirements and obligations of the Health & Safety at Work Act 1974 and the other regulations made under the Act in so far as they concern the workplace;
 - Accepting the legal duty, whilst at work, to take reasonable care for the health and safety of themselves and of other persons with whom they are working or who may be affected by their actions;
 - Co-operating fully with management and supervisors in all matters relating to safety, health and welfare and develop a personal concern for accident prevention;

- Putting forward to senior management any suggestions or ideas which they or other employees might have which could improve safety and accident prevention;
- Using all vehicles, plant, equipment and tools in a safe manner. Handling all vehicles, plant, equipment, tools and materials carefully to avoid personal injury and equipment damage;
- Avoiding the use of improvised equipment and tools;
- Reporting all plant and equipment defects to management;
- Using the correct safety equipment provided;
- Conforming to the Company's "Hard Hat Policy" and legal requirements by wearing safety helmets;
- Not taking risks or leaving situations which may be dangerous to others