

Recycled Aggregates and the WRAP Quality Protocol

There is a wide range of aggregates available in the UK for use in construction. Sources include crushed rock won from quarries; sand and gravel extracted from pits; marine dredged aggregates; blastfurnace and steel slags, by products of the iron and steel industry and other metal processes; and recycled aggregates. In 2002, the WRAP (Waste & Resources Action Programme) Aggregates Programme funded by DEFRA was launched to minimise the demand for primary aggregates through promoting greater use of recycled aggregates. This neatly complemented the Mineral Products Association (MPA) strategy to ensure that aggregates are more sustainable.

This information sheet seeks to explain the purpose behind the WRAP Quality Protocol for Recycling Aggregates and to define the advantages gained through its implementation by both the Recycled Aggregates businesses and importantly their customers and the users of Recycled Aggregates.

To ensure demolition waste could be processed into Recycled Aggregate which was of an appropriate quality and conformed to the appropriate European aggregate product Standard, WRAP worked with the industry to formulate a Quality Protocol (QP). This QP, entitled "The Quality Protocol for the production of aggregates from inert waste", was first published and implemented in 2004. It was reviewed and reprinted in 2008 to produce the current edition. This latest version is available for download from the Mineral Products Association (MPA) website at:

http://www.mineralproducts.org/prod_agg_recy01.htm

or from the WRAP aggregain website:

http://aggregain.wrap.org.uk/quality/quality_protocols/index.html

At the time of writing this information sheet, the QP is going through the final stages of a 5 year review process. This involves a full risk assessment taking due account of the Environment Agency requirements to ensure that there will be no risk of pollution of ground waters or any risk to the health of those involved in the production and use of Recycled Aggregates. It is anticipated that the updated QP will be published during the latter half of 2011, subject to Government formalities for its approval.

As a result of the aggregates industry drive towards the recycling of inert demolition wastes in a controlled manner, the quantities of recycled aggregates produced and used in a wide range of construction applications within the UK has progressively increased over the last 30 years. These uses include the manufacture of concrete, concrete products, use in pavement construction and in both private and public funded industrial and housing projects. In 1980 the MPA estimated the use of Recycled Aggregates was 20 million tonnes/yr, in 2007 this peaked at 71 million tonnes/yr falling back in 2008 due to the recession to be just over 50 million tonnes/yr in 2009. However even though this tonnage has decreased, it still currently accounts for 26% of the total aggregates used in the UK.

In summary, the Quality Protocol provides recycled aggregate suppliers with the following:

- A procedure to control the quality of recycled aggregates for sale as construction materials, or as constituents in a product, e.g. concrete, asphalt and unbound mixtures.
- Recommended minimum frequencies of inspection and testing conforming to the requirements of the European Standards for Aggregates (See references below).
- The means for suppliers to provide adequate assurance that their products conform to relevant technical specifications and certified characteristics.

To support the points above and to provide specifiers with confidence that their specifications will be met consistently, producers of recycled aggregates must recover waste material in a way which makes it 'fit for purpose'.

In order to provide guidance on the QP there are a number of supporting documents detailed below which are available for download at:

http://aggregain.wrap.org.uk/quality/quality_protocols/index.html

QP Producers compliance checklist- This is a self-assessment checklist for producers of aggregates wishing to test and demonstrate the conformity of their process to the WRAP Quality Protocol for production of aggregates from inert waste.

QP Guidance note for the producers compliance checklist - The notes provide information on the requirements of the Quality Protocol (QP) for the production of aggregates from inert waste, i.e. the processes and documents that must be set up to provide evidence that the aggregates produced conform to the Protocol, and the relevant standards and specifications.

QP Purchasers/specifiers compliance checklist - This is an assessment checklist for purchasers and specifiers of recycled aggregates wishing to test their suppliers (the producers) for compliance to the WRAP Quality Protocol for production of aggregates from inert waste.

QP Guidance notes to the purchasers/specifiers compliance checklist - The notes provide information on the requirements of the Quality Protocol (QP) for the production of aggregates from inert waste, i.e. the processes and documents that producers must set up to provide evidence that the aggregates produced conform to the Protocol, and the relevant standards/specifications

In addition, best practice guidance sheets are available for download at:

<http://aggregain.wrap.org.uk/publications/index.html>

Recycled Aggregates - Guidance for clients and specifiers - This sheet outlines the key benefits available to clients and specifiers through the use of recycled aggregates, and provides guidance on ways to increase their use.

Recycled Aggregates - Guidance for contractors - This sheet provides advice on their procurement and use tailored towards the needs of Small and Medium-sized Enterprises (SMEs), with suggestions on how to raise the issue of using recycled aggregates with clients and specifiers.

This quote from the WRAP Agg Regain website neatly summarises the benefits of the QP to the producers and purchasers:

“The purpose of a Quality Protocol is to provide a uniform control process for producers, from which they can reasonably state and demonstrate that their product has been fully recovered and is no longer a waste. It also provides purchasers with a quality-managed product to common standards, which increases confidence in performance. Also, the framework created by the Protocol provides a clear audit trail for those responsible for ensuring compliance with Waste Management Legislation.”

An Environment Agency (EA) position statement dated 11th September 2008 entitled “Definition of Waste: Development of Industry Code of Practice” states:

“Aggregates from recovered inert waste produced in accordance with the WRAP - Quality Protocol for the production of aggregates from inert waste, are not likely to be waste.”

Therefore a producer working to and complying with the requirements of the QP for the production of aggregates from inert waste can be confident of compliance with Waste Management Legislation. The purchaser can be confident of receiving quality aggregates meeting both the EA end of waste requirements and the specific requirements of one or more of the European Standards for Aggregates. Ultimately the customer and/or end user can be confident that the final product utilising recycled aggregates is fit for purpose and compliant with appropriate standards and legislation.

References - The European Standards for Aggregates with the National Guidance Documents (Published Documents produced by BSI) referenced alongside.

BS EN 12620 - “Aggregates for concrete.” (PD 6682-1)

BS EN 13043 - “Aggregates for bituminous mixtures and surface treatments for roads, airfields and other trafficked areas.” (PD 6682-2)

BS EN 13139 - “Aggregates for Mortar” (PD 6682-3)

BS EN 13242 - “Aggregates for unbound and hydraulically bound materials for use in civil engineering work and road construction.” (PD 6682-6)

BS EN 13285 - “Unbound mixtures specification.” (Guidance available in the Specification for Highway Works)

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