



THE USE OF AIR COOLED BLASTFURNACE SLAG AS AN UNBOUND AGGREGATE IN THE CONSTRUCTION INDUSTRY

BACMI / ENVIRONMENT AGENCY JOINT GUIDELINES

These guidance notes have been jointly prepared by the British Aggregate Construction Materials Industry and the Environment Agency. The document sets out clear and simple guidance which if followed will minimise the risk of water pollution.

1. INTRODUCTION

Air cooled blastfurnace slag is a by-product of the iron making process. It consists primarily of the silicates and aluminosilicates of calcium and magnesium together with compounds of sulphur, iron, manganese and other trace elements. The solidified slag is usually processed by crushing and screening, then placed in stockpiles prior to use.

In the UK many tens of millions of tonnes of unbound blastfurnace slag have been used in construction projects without any known environment impact and the use of slag as a construction material is regulated by BS 1047. The standard recognises potential for water pollution from sulphur species unless appropriate measures as described below are taken. Concerns about water pollution largely only apply when slag is used as a bulk fill in water logged or poorly drained areas. However, slag is used for a variety of other purposes and good engineering design, appropriate selection of materials and adherence to the specific guidance given below will minimise the risk of pollution.

2. THE ENVIRONMENT AGENCY APPROACH

The Agency recognises that blastfurnace slag can be used as a construction material in many situations without causing water pollution. The Agency is fully aware that blastfurnace slag is a by-product of an industrial process and if not used in the construction industry would have to be disposed of to landfill, with the associated potential to cause water pollution. The Agency approach to the use of blastfurnace slag is to fully accept its use in appropriate circumstances according to the guidelines so as to provide adequate protection to the aquatic environment.

3. SLAG AND THE WATER ENVIRONMENT

BS 1047 recognises that under specific ground conditions such as poorly drained soils, bacterial or chemical action on slag and leachate can give rise to sulphides and other compounds that can be harmful if they enter the water environment. The guidance provided below has been designed to prevent such problems arising.

4. SPECIFIC GUIDANCE

- (i) Materials stored in exposed stockpiles should be utilised in preference to freshly made slag.
- (ii) Unbound blastfurnace slag should not be used in water logged or poorly drained areas.
- (iii) Unbound blastfurnace slag should not be used below the water table.
- (iv) Where unbound slag is used in the construction of large exposed trafficked areas such as vehicle parks and major carriageways good-practice, e.g. compaction and avoidance on ponding, should be followed to minimise ingress of water.
- (v) Situations where the use of large quantities of unbound blastfurnace slag could give rise to water pollution should be identified at the materials selection stage of the construction project and a method statement produced setting out details of how the slag will be stored and handled and the measures taken to protect the aquatic environment.



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For further information and advice either of the listed b

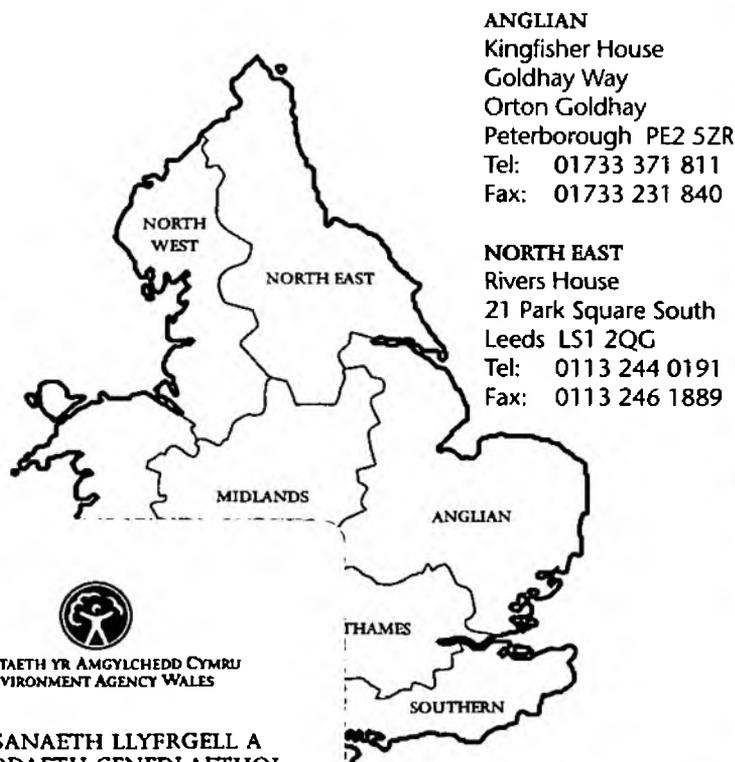
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