

**Local Air Pollution Prevention and Control, LAPPC**

**A 2  
P E R M I T**

Ref No.: SR 050602

Guidance :- PG 2/4 , PG 2/6 , IPPC SG7

**Issued by:**

**Dacorum Borough Council**

**Civic Centre, Marlowes, Hemel Hempstead, Herts HP1 1QG**

**Pollution Prevention and Control Act 1999**

**Pollution Prevention and Control (England & Wales) Regulations**

**2000 , (as amended)**

**Part 2 of schedule 3 of the PPC Regulations, SI 2000/1973**

Previously LAPC Authorised, Original application received : 27<sup>th</sup> September 1991

This IPPC Permit issued December 2005

**TO: Bovingdon Brickworks Ltd, 1 Sherbourne Road, Acocks Green, Birmingham B67 6AB** (hereinafter referred to as "the operator")

**RE: Bovingdon Brickworks, Leyhill Road, Bovingdon, Hetfordshire HP3 0NW**  
**Grid Reference TQ 003 033** (the premises in which the authorised process is carried out are identified on the plan A2/01/02 attached to and forming part of this Permit) (hereinafter referred to as "the premises")

Signed:  ..... Date: .....

**Tim Button**  
**Environmental Health Manager**  
(Officer appointed for this purpose)

The named company is permitted by Dacorum Borough Council (hereinafter referred to as "the regulator") to operate a prescribed process designated for local control within the meaning of Local Air Pollution Prevention & Control Act 1999 (LAPPC) namely:

CERAMIC PRODUCTION

Section 3.6 Part A(2)a

Directly Associated Activities –(None)

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## **Introductory Note**

The following Permit is issued under Regulation 10 of the Pollution Prevention and Control (England and Wales) Regulations 2000 (S.I 2000 No.1973), as amended, (“the PPC Regulations”) to operate a scheduled installation carrying out an activity, or activities covered by the description in section 3.6 A2 (a) in Part 1 to Schedule 1 of the PPC regulations, to the extent authorised by the Permit.

Aspects of the operation that are not regulated by conditions in this Permit are subject to the condition implied by regulation 12(10) of the PPC Regulations, i.e. the Operator shall use the best available techniques for preventing, or where that is not practicable, reducing emissions from the installation.

In some sections of the Permit, conditions require the Operator to use Best Available Techniques (BAT), in each of the aspects of the management of the installation, to prevent, and where that is not practicable, to reduce emissions. In determining BAT, the Operator should pay particular attention to relevant sections of the IPPC Sector Guidance note (SG7), appropriate Horizontal Guidance, and any other relevant guidance. Techniques include both the technology used and the way in which the installation is designed, built, maintained, operated and decommissioned.

Note that the Permit may require the submission of certain information to the Regulator, and in addition, the Regulator has the power to seek further information at any time under Regulation 28 of the PPC Regulations provided that the request is reasonable.

## **Public Registers**

Information relating to Permits, including the application, is available on public registers in accordance with the PPC Regulations. Certain information may be withheld from the public registers where it is commercially confidential, or if it is in the interest of national security to do so.

## **Variations to the Permit**

The Regulator may vary the Permit in the future, by serving a variation notice on the Operator. Should the Operator want any of the conditions of the Permit to be changed, a formal application must be submitted to the Regulator (the relevant forms are available from the Regulator).

## **Surrender of the Permit**

Before this Permit can be wholly or partially surrendered, an application to surrender the Permit shall be made by the Operator. For the application to be successful, the Operator must be able to demonstrate to the Regulator that there is no pollution risk and that no further steps are required to return the site to a satisfactory state.

## **Transfer of the Permit or part of the Permit**

Before the Permit can be wholly or partially transferred to another Operator, an application to transfer the Permit has to be made jointly by the existing and proposed Operators. A transfer will not be approved if the Regulator is not satisfied that the proposed Permit holder will be the person having control over the operation of the installation, or will not comply with the conditions of the transferred Permit. In addition, if the Permit authorises the Operator to carry out a specified waste

management activity, the transfer will not be approved if the Regulator does not consider the proposed Permit holder to be a 'fit and proper person' as required by the PPC Regulations.

**Talking to us**

Please quote the permit number if you contact the Regulator about this permit. To give a notification under a condition, the Operator should contact the Environmental Health Manager or any other number notified in writing by the Regulator for that purpose

## **Overview of the installation and the scheduled activities**

The installation comprises a site for the manufacture of ceramic products (namely clay bricks) and is considered to represent a stationary technical unit as defined in Chapter 3, Section 3.6, Part A2(a) of Schedule 1 to the PPC Regulations, 2000.

To support this classification the following points should be noted:

- A reducing atmosphere is not used.
- The kiln production capacity is less than 75 tonnes per day.
- The kiln capacity is greater than 4m<sup>3</sup>.
- The setting density is greater than 300 kg/m<sup>3</sup>.

There are 6 Scotch kilns on site which are intermittent type batch kilns and each of the kilns has a net rated thermal input (averaged weekly) of less than 2MW. The status of such kilns is defined in paragraph 2.2 of the Sector Guidance Note.

## **Installation and Activities**

The activities carried out at the installation comprises of the manufacture and distribution of approximately 7 million clay bricks per year using predominantly Reading Beds clay extracted from the adjacent Pockets Dell quarry. Both standard and special shaped bricks are manufactured. The standard bricks are manufactured in accordance with British Standard 3921 which is currently in the process of being superseded by the European standard for clay bricks BS EN 771-1. The special shaped bricks are manufactured in accordance with BS 4729. The products are of a traditional nature typical of the local area.

The overall production process precisely follows the stages shown in Figure 3.1 of the Sector Guidance Note to which reference should be made.

The raw material preparation and forming stages are split into two elements depending on the products being manufactured as follows:

- The majority of production has the clay mix ground and prepared in the “new” preparation plant and the bricks are formed in a soft mud moulding machine to produce a product with a “handmade” appearance. This represents in excess of 90% of current production.
- The balance of production has the clay mix ground and prepared in the original preparation plant and the products (both standard shaped bricks and special shaped bricks) are formed essentially by hand using a traditional Berry machine or by hand throwing.

Following clay preparation and brick forming, all products follow the same route through the drying and firing stages prior to final inspection and packing ready for storage and dispatch.

The raw material mix includes various seams of clay and silt from the nearby Pockets Dell quarry, a local soft sand added to control the plasticity of the clay and an anthracite material which is added as approximately 3% of the mix to give colour development during subsequent firing. These component materials are stored in stockpiles at the rear of the works.

The first stage of the process is that the required mix of the clay, sand and anthracite is created in the raw material storage area using the front loading shovel to proportion the ingredients and carry out a primary mixing operation. Water is added at this stage to start to increase the moisture content of the mix part way towards the very high levels needed for the moulding operation and this water also assists in controlling fugitive dust emissions from the raw material storage area. This pre mix of materials is typically sufficient to give 2 or 3 weeks forward supply of material. The total requirement for raw material is approximately 20,000 tonnes per year.

In the “new” preparation plant (installed in 1988) the clay mix is fed by loading shovel into a box feeder which feeds a preparation line comprising a roller crusher, a wet pan mill and two sets of high speed rolls in which the clay passes vertically downwards between two counter rotating rollers with a fixed gap. The second set of rolls has a smaller gap of 3 mm between the rolls to give the final particle size required at the forming stage. Further water is added in the wet pan mill again to increase the moisture content towards the 28% typically needed at the moulding stage.

The prepared clay is then conveyed to a rotary silo and table feeder for onward transfer to the soft mud moulding machine.

The main moulding machine is an Aberson soft mud machine installed in 1990 which consists of a press tower filled with prepared clay which includes paddles to force the clay mix into moulds and a horizontal mould circuit in which a set of brick moulds travel round a continuous loop performing a series of operations. Each mould contains 7 pockets to allow 7 bricks to be formed for each cycle of the press tower. The filled mould passes under the press tower and then has any surplus clay cleaned off mechanically before a perforated metal pallet is placed manually on top of the mould. The mould is then inverted and the pallet supporting the formed bricks is conveyed away to the next stage of the process. The empty mould then passes through a washing stage, a drying stage and a sanding stage prior to being inverted again and passing under the press tower to be filled again.

The moulding machine runs at a speed of 12 cycles per minute which equates to an output of 84 bricks per minute or a maximum of 5,040 bricks per hour. The machine runs until sufficient pallets have been loaded to fill a complete drier car frame which holds 420 bricks. When each drier car is full the car is manually moved away to enter the drying stage. The moulding machine will typically produce sufficient formed products to fill 10 drier cars per hour. Foreseeable emissions from the forming operation include the discharge of water from the mould washing stage and control of airborne sand from the mould sanding operation.

In the separate handmaking area the prepared clay mix is ground through similar machinery and then conveyed to one of three Berry type machines. In these

machines a variety of different shaped moulds can be used to produce bricks of special shapes. Typically each mould has 3 pockets and the operation of sanding, filling and emptying the moulds is essentially a manual operation. Again the formed products are loaded onto pallets and placed into drier cars for progress through the drying stage. A small proportion of products are moulded entirely by hand using single brick moulds. A different type of dry sand is used to assist the demoulding of the hand made products.

In the drying stage the products are dried using gas fired heaters. The forming moisture content of approximately 28% is reduced down to a moisture content of less than 5% at which stage they are sufficiently strong to be handled and transferred to the kilns for firing. The drying capacity includes two modern chamber dryers (each holding 44 dryer cars) and 15 older tunnel driers holding between 15 and 18 dryer cars each. There is also an additional drying area used for slower drying of larger special shaped units. Emissions from the dryers comprise combustion products from the gas heaters and water evaporated from the bricks being dried.

The dried products are conveyed to the kilns by fork lift truck and the empty drier cars and pallets are then returned to the forming areas also by fork lift truck. In the kiln chambers the bricks are stacked by hand into a defined structure which provides sufficient airspace to allow the subsequent firing process to take place.

The kilns are of the traditional Scotch Kiln type most commonly found in the Chilterns area and traditionally used to produce the local Bucks Multi type of facing brick. Four of the kilns have a capacity of 70,000 bricks and the other two have a capacity of 100,000 bricks. The kilns are loaded, fired and unloaded in sequence such that at any time each of the kilns will be at a different stage in the cycle. Once the kiln chamber has been filled with the required quantity of dried bricks a refractory door is placed over the filling point and sealed with refractory material such that the four walls of the kiln are enclosed. The top of the kiln is completely open to the atmosphere but is covered by a temporary wooden pitched roof to keep the products dry in the first stage of the firing process.

The kilns are fired by a number of burners firing into formed cavities down each side of the kiln and at low level. These burners are currently fired using gas oil. The temperature in the kiln is progressively increased according to a defined profile until a maximum temperature of around 1,200 degrees centigrade is reached. This temperature is maintained for a period of typically 10 hours and then the burners are turned off to allow the kiln to cool back to ambient temperature. The full cycle takes typically 10 to 14 days to complete. To the extent that the emissions to air from the kilns pass directly to atmosphere without passing through an exhaust chimney, there are certain characteristics of the firing process which are analogous to the firing of "clamp" kilns and reference should be made in this respect to paragraphs 3.43 to 3.50 in the Sector Guidance Note.

Following cooling the door is removed from the kiln and the products are unloaded by hand and formed into packs ready for fork truck movement to the stockyard and subsequent dispatch by road. The different product types are created by mixing products from different locations in the kiln stack which show different levels of colour development depending on the temperatures that they have been subjected to in the firing process.

No drying of sand is generally carried out on site as the sand is supplied either moist or dry depending on the use to which it is to be put.

The overall output of the installation therefore comprises a wide range of product types in terms of colour, size and shape. However the bulk of the output is in size formats of 215 x 102.5 x 65 mm or 215 x 102.5 x 50 mm which are the standard formats used in UK construction.



**Components of Process:**

<b>Location</b>	<b>Quantity</b>	<b>Description</b>
Clay Yard	2	30 ton Sand Silos
Clay Yard	1	3" Wickham Pump
Main Yard	1	Flygt Pump (Large)
Main Yard	4	Bulk Storage Tanks (Fuel and Oil)
Main Yard	3	Box Feeders
Main Yard	2	Main Feed Conveyors
Main Yard	8	Propane Gas Cylinders
Main Yard	6	Scotch Kilns
Main Yard	1	Dust Extractor
Stockyard	1	Kibbler Roller
Stockyard	2	Conveyor Belts
Stockyard	5	Varly Oil Pumps
Stockyard	2	Oil Heaters
Stockyard	2	Oil Tanks
Clay Prep Shop	2	Stone Ejection Rollers
Clay Prep Shop	2	High Speed Rolls

Clay Prep Shop	7	Conveyors
Clay Prep Shop	1	Arc Welder
Clay Prep Shop	1	Gas Boiler
Machine Making Shop	1	Aberson Brickmaking Machine, including conveyors, control gear and dust extractor
Machine Making Shop	1	Electric Transfer Car and 2 Transfer Cars
Machine Making Shop	2	Warman Pump
Hand Making Shop	1	Transfer Car
Hand Making Shop	2	Berry Machines
Hand Making Shop	1	Stone Ejection Roller
Hand Making Shop	1	Wooten Roll Grinder
Hand Making Shop	1	Dust Extractor
Dryers C.D.S	2	Chamber Dryers (CDS)
Dryers C.D.S	2	Gas Flow Meters
Dryers Continuous	2	Transfer Cars
Dryers Continuous	2	Gas Burners (inc. controls, fans and ducting)
Kilns	6	Kilns
Kilns	40	Burner Jets
Plant Static	1	Fluidair 34 Compressor

Plant Static	1	Fluidair Rotapack 100 Compressor
Plant Static	1	Broomwade Compressor
Plant Static	1	Submersible Pump
Plant Static	3	Low Pressure Compressors

**Installation Boundary:**

All areas required for the brickmaking process are included. Areas used for maintenance, administration and welfare facilities have also been included. Please see A2/01/03. The boundary is shown on A2/01/02.

## Conditions

### 1. General

#### 1.1 Permitted activities

The Operator is permitted to carry out the activities and/or associated activities specified in table A below:

<b>Table A</b>		
<b>Activity listed in Schedule 1 of the PPC regulations / Associated activity</b>	<b>Description of specified activity</b>	<b>Limits of specified activity</b>
Section 3.6 A2 (a) – The manufacture of ceramic products (brick) by firing in kilns	<ul style="list-style-type: none"> <li>▪ Storage of clay and raw materials</li> <li>▪ Forming including mixing and shaping</li> <li>▪ Drying</li> <li>▪ Firing in gas oil fired kilns</li> <li>▪ Packing and storage of product</li> <li>▪ Ancillary site plant and equipment.</li> <li>▪ Utilities, technical, engineering and admin support.</li> </ul>	Receipt of raw materials to dispatch of finished product. From receipt of fuel to dispensing to plant and equipment
Associated activity of the storage, treatment or disposal of waste materials	Handling, storage and treatment/disposal of wastes from the installation	From the generation of waste to final disposal off site

Where waste on site is subject to activities that are exempt from control under the Waste Management Licensing Regulations 1994, then wastes controlled in 1.1 shall be clearly identified and kept separate from such exempt waste activities and a record shall be kept of where such exempt activities are conducted.

#### 1.2 Installation

The activities authorised by this Permit shall not extend beyond the installation boundary, that being the land shown as edged in red on the site plan A2/01/02 of schedule 2 to this Permit, and described in the Permit application.

#### 1.3 Overarching management condition

Without prejudice to the other conditions of this Permit, the Operator shall implement and maintain a management system, organisational structure and allocate resources that are sufficient to achieve compliance with the limits and conditions of this Permit. The management system shall include a specific Environmental Management System (EMS), which shall provide an effective technique for ensuring that all pollution prevention and control techniques are delivered reliably and on an integrated basis, and shall include but not be limited to:

- A documented preventative maintenance schedule, covering all plant, equipment whose failure could lead to significant impact on the environment;

- Documented procedures for visual monitoring of emissions;
- Records of checks made (the logbook) shall include the time, date, result and name of person undertaking the assessment, and where required, the location of the assessment;
- Records of breakdowns of key plant and abatement equipment capable of causing significant pollution (to be analysed by the Operator in order to eliminate common failures), and;
- A documented training system for all relevant staff, (including awareness of the Regulatory implications of the Permit, awareness of all operating procedures, awareness of all potential environmental impacts under normal and abnormal circumstances, prevention of accidental emissions and action to be taken when accidental emissions occur, and awareness of the procedures for dealing with a breach of the Permit conditions).

#### 1.4 Improvement program

The Operator shall complete the improvements specified in Table B by the date specified in that table, and shall send written notification of the completion of each requirement to the Regulator within 14 days of the completion of each such requirement. Where a report is required, this shall also be sent to the Regulator by the date specified in the table:

<b>Table B</b>	
Requirement	Compliance date
To evaluate all fuel oil storage facilities against the requirements of the Control of Pollution (Oil Storage) (England) Regulations 2000 and its good practice guidance.  The Operator's proposals following this study shall be submitted to the Regulator for approval within 8 weeks of completion of the study	1 <sup>st</sup> April 2006
To complete and implement the Environmental Management System detailed in the Permit application, and to meet the requirements of the overarching management condition (condition 1.3), to the satisfaction of the Regulator.	1 <sup>st</sup> April 2006

Where the Operator fails to comply with any requirement by the specified date in Table B, written notification of such failure shall be sent to the Regulator within 14 days of that date.

#### 1.5 Operational changes

The Operator shall seek the Regulator's written agreement to any operational changes to this Permit, by way of variation, and shall include:

- (a) A description of the nature of the proposed change;
- (b) Any increases in the storage of raw materials;
- (c) The nature and quantity of any emission;
- (d) Details of the technology being applied to reduce such emissions, and associated emissions monitoring;
- (e) Any other relevant information.

Minor modifications are permissible as long as they do not contravene the operational requirements of the application or the Permit, do not affect releases to air, and are notified to the Regulator 14 days prior to making that change.

Any such change shall not be made until agreed in writing by the Regulator. From the implementation date, the Operator shall operate the Permitted installation in accordance with that change, and the relevant provisions of the application shall be deemed to have been amended.

#### **1.6 Pre-operational conditions**

There are no pre-operational conditions attached to this Permit.

#### **1.7 Off-site conditions**

Hertfordshire County Councils Planning permission reference 4/0225-99 should be complied with in regards to extraction of brick clay at all times.

## 2. Operating Conditions

### 2.1 In-Process controls

The Permitted installation shall, subject to the conditions of this Permit, be operated using the techniques, and in the manner described in the documentation submitted in the Permit application, or as otherwise agreed in writing by the Regulator in accordance with conditions of this Permit.

### 2.2 Point source emissions to air

The limits for emissions to air for the parameters and emission points set out in table C shall not be exceeded.

<b>Table C</b>				
<b>Emission point reference</b>	<b>Parameter</b>	<b>Limit mg/m<sup>3</sup></b>	<b>Monitoring frequency</b>	<b>Monitoring method</b>
	Oxides of nitrogen	Not applicable		
	Particulate matter	No visible emissions	At least daily when kiln(s) in operation	Operator observations
	Oxides of sulphur: (expressed as SO <sub>2</sub> )	As per air quality objectives in the Air Quality Regs 2000		
	Chlorides (expressed as HCl)	Not applicable		
	Fluorides (expressed as HF)	Not applicable		

Emissions to air from the specified sources in plan A2/01/03 shall only arise from the specified emission points in the following table D.

**Table D**

<b>REF</b>	<b>SOURCE</b>	<b>COMMENTS</b>
A1	CHAMBER DRYER	WATER VAPOUR AND COMBUSTION PRODUCTS
A2	CHAMBER DRYER	WATER VAPOUR AND COMBUSTION PRODUCTS
A3	CHAMBER DRYER	WATER VAPOUR AND COMBUSTION PRODUCTS
A4	CHAMBER DRYER	WATER VAPOUR AND COMBUSTION PRODUCTS
A5	TUNNEL DRYERS	WATER VAPOUR AND COMBUSTION PRODUCTS
A6	DUST EXTRACTOR FOR MOULD SANDING	FILTERED AIR
A7	DUST EXTRACTION FOR HANDMAKING AREA	FILTERED AIR
A8	DUST EXTRACTOR FOR BRICK CUTTING	FILTERED AIR
A9	SAND SILO FILTER	FILTERED AIR
A10	SILO VENT	UNFILTERED AIR
W1	DISCHARGE FROM MOULD WASHING	WATER CONTAINING CLAY AND SAND PARTICLES

Low Sulphur Gas Oil shall be used as the primary fuel for the kilns.

Kiln exhaust gasses should, where possible, achieve an exit velocity of greater than 15 m/sec during firing to achieve adequate dispersion of atmospheric pollutants. Where this cannot be achieved or is variable, emissions should not cause a breach of National Air Quality Objectives or Environmental Benchmarks.

Additional monitoring should be carried out in agreement with the regulator.

### **2.3 Point source emissions to surface water and sewer**

The schedule of point source emissions to surface water are shown in Plan A2/01/04

There are no significant emissions to water from the brick making process as any water added during the forming stage is evaporated during the drying stage or the first part of the kiln firing process. There is no connection to the mains sewer system; cesspits are used at the installation.

The emission of Trade Effluent to a sewer is not Permitted unless the Operator is in possession of the relevant Trade Effluent Discharge Consent from the local water company.

There is no run off to controlled waters outside the site boundary

### **2.4 Point source emissions to groundwater**

No emission from the Permitted installation shall give rise to the introduction into groundwater of any substance in List I (as defined in the Groundwater Regulations 1998 (S.I. 1998 No. 2746)).

No emission from the Permitted installation shall give rise to the introduction into groundwater of any substance in List II (as defined in the Groundwater Regulations 1998 (S.I. 1998 No. 2746)) so as to cause pollution (as defined in the Groundwater Regulations 1998 (S.I. 1998 No. 2746)).

For substances other than those in List I or II (as defined in the Groundwater Regulations 1998 (S.I. 1998 No. 2746)) the Operator shall use BAT to prevent, or where that is not practicable, to reduce emissions to groundwater from the Permitted installation.

### **2.5 Fugitive emissions to air**

The Operator shall use BAT so as to prevent, or where that is not practicable, to reduce fugitive emissions of substances, including particulates, to air from the Permitted installation, and in particular from:

- Storage areas and open surfaces (including uncovered outdoor stockpiles)
- Outdoor plant and equipment
- Buildings (including roof louvers)
- Pipes, valves and other transfer systems

### **2.6 Fugitive emissions to surface water, sewer, groundwater and land**

The Operator shall use BAT so as to prevent, or where that is not practicable, reduce fugitive releases of substances to surface water, sewer, groundwater and land from the Permitted installation.



The Operator shall notify the Regulator, as soon as is reasonably practicable, of any information concerning the state of the site which affects or updates that supplied to the Regulator as part of the site report submitted as Section 3 (site Condition Report) of the Permit application.

The Operator shall notify the Regulator in writing of any area or zone within the boundary of the installation that has been subject to below ground remediation since the issue of the Permit. Subject to agreement in writing from the Regulator, any necessary analysis of sub-soil to re-establish baseline pollutant levels shall be undertaken.

## **2.7 Odour**

All emissions to air from the installation shall be free from offensive odour, as perceived by the Regulator, beyond the installation boundary. The Operator shall not be taken to have breached this condition if the Operator has used BAT to prevent, or where that is not practicable, to reduce such odorous emissions.

## **2.8 Emissions to Land**

No emission from the Permitted installation shall be made to the land forming the Permitted Installation.

## **2.9 Raw Materials**

### **2.9.1 Selection**

The Operator shall maintain an inventory of the principal raw materials used, which shall include details of the quantities used and an assessment of their environmental impact.

- The inventory shall carry out a periodic review of raw materials used at least once every six years, or where changes to the raw materials have been made. Where a review identifies an acceptable less polluting raw material option, the Operator shall substitute that material within the review period.
- Quality procedures to control the specification of raw materials used shall be implemented and maintained, in order to minimise any environmental impact, and these procedures, along with the inventory shall form part of the Environmental Management System required by this permit.

No waste or recovered oil shall be used in any part of the process. Anthracite used in the process shall have a sulphur content no greater than 1% by mass when analysed in accordance with British Standard 1016:1991.

Fuel oil used on site shall comply with the Sulphur content of Liquid Fuels (England and Wales) Regulations 2000 (S.I 1460), or as amended by changes in legislation. A statement from the fuel supplier demonstrating the sulphur content of Gas Oil shall be made available to the Regulator upon request.

### **2.9.2 Handling, storage, mixing and transfer**

All equipment related to delivery, storage, mixing or transfer of raw materials shall be serviced in accordance with the manufacturers instructions, and this shall form part of the Environmental Management System.

A visual assessment of all plant shall be undertaken daily. The extent of any emission and the steps taken to rectify the emission shall be recorded in the logbook.

Any faults or defects found shall be recorded in the logbook, along with the action taken to rectify that fault or defect.

Buildings where such dusty operations are undertaken should be designed such that entrances and vents will as far as possible not be the source of fugitive emissions.

The receipt, handling and storage of materials likely to generate particulate matter shall be carried out in such a way that emissions of particulate matter to the air are minimised. In particular, storage of sand shall be in three-walled bays sheeted over when not in use.

Any spillage's or accumulations of materials likely to generate particulate matter occurring at the premises shall be cleared up promptly. The substances should be cleared up, stored and handled so as to prevent emissions to the air prior to dispatch of the said material off the premises (if the material is not to be re-used in which case it shall be returned to storage in compliance with the preceding Condition). Spillage's and accumulations described in this Condition shall be cleared up and handled in such a manner that they do not contribute to emissions to the air.

All batching and mixing plant and equipment shall be visually inspected externally at least daily. Any significant faults or defects found shall be recorded in the logbook along with the action taken to rectify that fault or defect.

Dust control water sprays shall be employed to control fugitive dust where and as required.

Additives/oils/lubricants and all other process related solutions shall be stored in an area designed or located such that any leakage or spillage in that area is contained or controlled so as to prevent, or where that is not practicable, minimise the risk of significant pollution.

Fuel oil shall be stored in an area designed or located such that any leakage or spillage in that area is contained.

Site roads that are hard surfaced shall be swept as necessary using vehicles fitted with dust collection facilities in order to minimise the emission of dust.

### **2.9.3 Waste minimisation (optimising the use of raw materials)**

Using information gathered from the periodic review of raw materials used in the process, the Operator shall investigate any opportunities for reducing waste and maximising recycling should be assessed and, where appropriate, should be carried out in accordance with a timescale approved by the Regulator. This shall form part of the Environmental Management System.

The Operator shall carry out a waste minimisation audit at least every six years. The methodology used and an action plan for optimising the use of raw materials should be submitted to the Regulator within 2 months of completion of the audit. Specific improvements resulting from the recommendations of audits should be carried out within a timescale approved by the Regulator.

### **2.9.4 Water Use**

The Operator shall carry out a periodic review of water use (water efficiency audit) at least once every 6 years, or where there is significant change to the water use at the

installation. Using this information, opportunities for reduction in water use should be assessed and, where appropriate, should be carried out in accordance with a timescale approved by the Regulator. This shall form part of the Environmental Management System.

### **2.9.5 Waste storage and handling**

The Operator shall maintain and implement a system which ensures that a record is made of the quantity, composition, origin, destination (including whether this is a recovery or disposal operation) and where relevant, removal date of waste that is produced at the permitted installation.

The Operator shall design, maintain and operate facilities for the storage and handling of waste such that there are no releases to water or land during normal operation, and that emissions to air and the risk of accidental release to water and land are minimised.

The waste handling arrangements shall form part of the Environmental Management System and shall be periodically reviewed in order to demonstrate that the best environmental options are being used for dealing with waste from the installation.

### **2.9.6 Waste re-use, recovery, recycling or disposal**

The Operator shall continue to implement the waste recovery, recycling and disposal arrangements detailed in the Permit application, which shall form part of the Environmental Management System.

## **2.10 Energy Efficiency**

### *Background Note:*

The Company are a participant in a Climate Change Levy Agreement administered by British Ceramic Confederation under sub sector BCC01, which covers manufacture of non fletton bricks and other heavy clay products. The Company are identified on the current Reduced Rate Certificate under reference BCC01/MCLMH/00001.

The installation is part of a multi site company, it should be noted that the CCA targets relate to the whole operation and that, in the Agreement, there is no requirement for separate targets for individual sites. The site energy performance influences group performance and as such is bound under this Agreement.

The Company have an Underlying Agreement (PP3.02) with DEFRA .This identifies the following milestone period targets for specific energy consumption expressed as kWh (primary) per tonne of saleable fired product

TARGET PERIOD	TARGET SEC
1 <sup>ST</sup> OCTOBER 2001 – 30 <sup>TH</sup> SEPTEMBER 2002	841.1
1 <sup>ST</sup> OCTOBER 2003 – 30 <sup>TH</sup> SEPTEMBER 2004	827.6
1 <sup>ST</sup> OCTOBER 2005 – 30 <sup>TH</sup> SEPTEMBER 2006	814.9
1 <sup>ST</sup> OCTOBER 2007 – 30 <sup>TH</sup> SEPTEMBER 2008	778.2
1 <sup>ST</sup> OCTOBER 2009 – 30 <sup>TH</sup> SEPTEMBER 2010	766.3

The Operator shall ensure that that all plant and equipment forming the installation is designed, operated and maintained to optimise the use and minimise the loss of energy as far as is reasonably practicable.

The Operator shall maintain and update annually the Energy Plan as detailed in the Permit application. The effective management of energy efficiency matters shall be maintained as part of the Environmental Management System.

The Operator shall comply with the Climate Change Agreement in place at the installation, and in doing so shall:

- Make available to the Regulator on request the results of all external audits as part of the annual energy report;
- Make available to the Regulator on request records of all internal audits, which shall be retained on site, and
- Make available to the Regulator on request a copy of each certificate indicating the payable rate of Climate Change Levy within 4 weeks of receipt.

### **2.11 Accidents**

The Operator shall maintain the accident management procedures, which shall form part of the Environmental Management System.

The plan shall be reviewed at least annually, or as soon as practicable after an accident, whichever is the earlier, and the Regulator notified of the results of the review within 2 months of its completion

In the case of abnormal emissions arising from an accident, the Operator shall:

- Investigate immediately and undertake remedial action as soon as practicable;
- Promptly record the events and actions taken, and
- Ensure the Regulator is made aware, as soon as practicable.

### **2.12 Noise and Vibration**

The Operator shall use BAT to prevent, or where that is not practicable, minimise emissions of noise and vibration from the permitted installation. The Operator shall maintain systems for the control of noise and vibration referred to in the Permit application. (Refer to table E)

<b>Table E</b>			
<b>Potential Source</b>	<b>Normal Operation</b>	<b>Abnormal Event</b>	<b>Comments</b>
Loading raw materials into processing using mobile plant	Insignificant	Insignificant	Main operation enclosed within factory building
Moving product through the process using fork lift trucks	Insignificant	Insignificant	Forklift movements, Production hours only
Clay preparation and forming equipment	Insignificant	Insignificant	Operation entirely enclosed within factory building
Fans and combustion systems serving dryers and kilns	Insignificant	Significant	Noise is monitored and maintenance action taken in good time.
Brick handling and packing equipment	Trivial	Insignificant	Entirely enclosed inside factory building
Transport of product to stocking areas	Trivial	Insignificant	Forklift movements, Production hours only
Loading delivery vehicles	Trivial	Insignificant	Loading mainly During Office Hours only
Movement other delivery vehicles.	Trivial	Trivial	Minimal number of deliveries.

All clay preparation equipment shall be properly lubricated and maintained to minimise noise or vibration.

All exhaust inlets and vents should be properly maintained to prevent corrosion or damage affecting their acoustic properties.

Noise impact must be considered when positioning any new or altered exhaust, inlet or vent.

Fans that have a direct external connection should be properly maintained, with particular attention to balance and bearings. The fans should also be turned off if practicable when not in use.

### **3. Monitoring**

#### **3.1 Emissions to air**

All monitoring shall be undertaken in accordance with schedule 1, unless otherwise agreed in writing with the Regulator.

Emissions from all Scotch Kilns tops shall be colourless, with exception for the evolution of steam and shall be free from significant visible smoke during normal operation. A record of any abnormal emissions shall be recorded in the logbook along with its cause and action taken to rectify the problem. On no occasion shall any emission exceed the equivalent of Ringlemann shade 1, as detailed in British Standard BS 2742:1969. A record of any such emission shall be recorded in the logbook, along with its cause, and action taken to rectify the problem. The details of the person undertaking the monitoring and the date and time shall also be recorded, along with the location where the observation was made.

An assessment of all emissions shall be undertaken at least daily to ensure that final releases are colourless, free from persistent visible emissions, odour and free from droplets.

Visual and olfactory assessments of emissions to air from the kilns shall be made not less than twice a day including at the beginning of each firing. Assessments shall be carried out at source of the emissions and at the site boundary, downwind of the process or such other position as may be agreed by the authorising authority every assessment shall be carried out for a minimum of 5 minutes.

A visual assessment of dust on roadways and yards within the site, and of dust from all other sources on site shall be carried out not less than once per day.

A record of assessments and of corrective action taken shall be made in the logbook required to be kept in accordance with this permit. The record shall include the time and date of the assessment, the result, and the name of the person undertaking the assessment.

The logbooks shall be kept available for inspection by the regulator on the premises occupied by the process, and shall contain at least the previous 2 years' records.

### **3.2 Emissions to Controlled Waters**

All monitoring of emissions to controlled waters shall meet the specification as detailed in Schedule 2. Records of any monitoring, including analysis reports shall be made available for inspection by the Regulator.

### **4.0 Closure and decommissioning**

The site closure plan shall be implemented on final cessation or decommissioning of the Permitted activities or part thereof.

The site closure plan shall be prepared in accordance with the Permit application, and will refer to the site report submitted as Section 3 of the Permit application. The Operator shall minimise any pollution risk, including the generation of waste, on closure and decommissioning by:

- The maintenance of a record of any events, which have, or might have, impacted on the condition of the site along with further investigation or remediation work carried out. This shall include and be a development of the initial site condition report submitted as section 3 of the Permit application; and
- Ensuring that the installation is decommissioned so as to avoid any pollution risk in returning the site of operation to a satisfactory condition.

The site closure plan shall be submitted to and approved by the Regulator before implementation.

The Operator shall give at least 30 days written notice to the Regulator before implementing the site closure plan.

## 5. Records

The Operator shall ensure that all records required to be made by this Permit and any other records made by it in relation to the operation of the Permitted installation shall:-

- be made available for inspection by the Regulator at any reasonable time;
- be supplied to the Regulator on demand and without charge;
- be legible;
- be made as soon as reasonably practicable;
- indicate any amendments which have been made and shall include the original record wherever possible; and
- be retained at the Permitted installation, or other location agreed by the Regulator in writing, for a minimum period of 4 years from the date when the records were made, unless otherwise agreed in writing.

Where they concern the condition of the site of the installation, be kept at the Permitted installation, or other location agreed by the Regulator in writing, until all parts of the Permit have been surrendered.

## 6. Reporting

All reports, and written and or oral notifications required by this Permit, and notifications required by Regulation 16 of the PPC Regulations shall be made or sent to the Regulator using the contact address indicated on page 1 of this Permit.

The Operator shall, unless otherwise agreed in writing, submit reports of the monitoring and assessments carried out in accordance with the conditions of this Permit.

Where the Operator has a formal environmental management system applying to the Permitted Installation which encompasses annual improvement targets, the Operator shall, no later than 31<sup>st</sup> January each year, provide a summary report of the previous years progress against such targets.

The Operator shall, within 6 months of receipt of written notice from the Regulator, submit to the Regulator a report assessing whether all appropriate preventative measures continue to be taken against pollution, in particular through the application of best available techniques at the installation. The report shall consider any relevant published technical guidance current at the time of the notice which is either supplied with or referred to in the notice, and shall assess the costs and benefits of applying techniques described in that guidance, or otherwise identified by the Operator, that may provide environmental improvement

## 7. Notifications

The Operator shall notify the Regulator **without delay** of:-

- The detection of an emission of any substance, that has caused, is causing, or may cause significant pollution and that exceeds any limit or criterion in this Permit, specified in relation to the substance;

- The detection of any fugitive emissions that has caused, is causing or may cause significant pollution, unless the quantity emitted is so trivial that it would be incapable of causing significant pollution;
- The detection of any malfunction, breakdown or failure of plant or techniques which has caused, is causing or may cause significant pollution; and
- Any accident, which has caused, is causing or may cause significant pollution.

The Operator shall give written notification as soon as practicable (and at least 30 days) prior to any of the following:

- Permanent cessation of the operation of part or all of the Permitted installation;
- Cessation of operation of all or part of the Permitted installation for a period likely to exceed 1 year; and
- Resumption of the operation of part or all of the Permitted installation after a temporary cessation of activities as above.

The Operator shall notify the following matters to the Regulator in writing within 14 days of their occurrence:

- Any change in the Operators trading name, registered name or registered office address;
- Any change to the particulars of the Operators ultimate holding company (including details of an ultimate holding company where an Operator has become a subsidiary);
- Any steps taken by the Operator going into administration, entering into a company voluntary arrangement, being wound up or bankruptcy;
- Any death of any of the named Operator (where the Operator consists of more than one named individual).

Where the Operator has entered into a Climate Change Agreement with the government, the Operator shall notify the Regulator within one month of:

- Any decision by the Secretary of State not to re-certify that Agreement.
- A decision by either the Operator or the secretary of state to terminate that agreement.
- Any subsequent decision by the Secretary of State to re-certify that Agreement.



## 8. Interpretations and Explanatory Notes

6.1 In relation to this Permit, the following expressions shall have the following meanings:

<i>“Application”</i>	means the application for this Permit, together with any response to a notice served under Schedule 4 to the PPC Regulations and any operational change agreed under the conditions of this Permit.
<i>“PPC Regulations”</i>	Means the Pollution Prevention and Control (England and Wales) Regulations S.I. 2000 No.1973 (as amended) and words and expressions defined in the PPC Regulations shall have the same meanings when used in this Permit save to the extent they are explicitly defined in this Permit.
<i>“Permitted Installation”</i>	means the activities and the limits to those activities described in this Permit.
<i>“Monitoring”</i>	includes the taking and analysis of samples, instrumental measurements (periodic and continual), calibrations, examinations, tests and surveys.
<i>“MCERTS”</i>	means the Environment Agency’s Monitoring Certification Scheme.
<i>“Sewer”</i>	Means sewer within the meaning of section 219(1) of the Water Industry Act 1991.
<i>“Fugitive Emission”</i>	means an emission to air or water (including sewer) from the Permitted installation that is not controlled by an emission limit imposed by a condition of this Permit.
<i>“Groundwater”</i>	means all water that is below the surface of the ground in the saturation one and in direct contact with the ground or subsoil.
<i>“Regulator”</i>	means any officer of Dacorum Borough council who is authorised under Section 108(1) of the Environment Act 1995 to exercise, in accordance with the terms of any such authorisation, any power specified in Section 108(1) of that Act.

**“BAT”**

means the most effective and advanced stage in the development of activities and their methods of operation which indicates the practical suitability of particular techniques for providing in principle the basis for emission limit values designed to prevent, and where that is not practical, generally to reduce emissions and the impact on the environment as a whole.

For those purposes:

"available techniques" means those techniques which have been developed on a scale which allows implementation in the relevant industrial sector, under economically and technically viable conditions, taking into consideration the cost and advantages, whether or not the techniques are used or produced inside the United Kingdom, as long as they are reasonably accessible to the Operator;

"best" means, in relation to techniques, the most effective in achieving a high general level of protection of the environment as a whole;

"techniques" includes both the technology used and the way in which the installation is designed, built, maintained, operated and decommissioned. Schedule 2 of the Regulations shall have effect in relation to the determination of best available techniques.

- 6.2 Where any condition of this Permit refers to the whole or parts of different documents, in the event of any conflict between the wording of such documents, the document with the most recent publication date shall be taken to be the most appropriate document to be used.
- 6.3 Any person who is aggrieved by the conditions attached to a Permit can appeal to the Secretary of State for Environment, Food & Rural Affairs. Appeals must be received by the Secretary of State no later than 6 months from the date of the decision (the date of the Permit).

Appeals relating to installations in England should be received by the Secretary of State for Environment, Food & Rural Affairs. The address is as follows;

The Planning Inspectorate  
Environmental Appeals Administration  
Room 4/19 – Eagle Wing  
Temple Quay House  
2 The Square  
Temple Quay  
Bristol, BS1 PN

The appeal must be in the form of a written notice or letter stating that the person wishes to appeal and listing the condition(s) which is/are being appealed against. The following five items must be included;

- a) A statement of the ground of appeal;
- b) A copy of any relevant application;
- c) A copy of any relevant Permit;
- d) A copy of any relevant correspondence between the person making the appeal ("the appellant") and the Council;
- e) A statement indicating whether the appellant wishes the appeal to be dealt with.
  - by a hearing attended by both parties and conducted by an inspector appointed by the Secretary of State; or
  - by both parties sending the Secretary of State written statements of their case (and having the opportunity to comment upon one another's statements).

At the same time, the notice of appeal and documents (a) and (e) must be sent to the Council, and the person making the appeal should inform the appropriate Secretary of State that this has been done.

- An appeal will not suspend the effect of the conditions appealed against; the conditions must still be complied with.
- In determining an appeal against one or more conditions, the Act allows the Secretary of State in addition to quash any of the other conditions not subject to the appeal and to direct the local authority to either vary any of these conditions or to add new conditions.

## Schedule 1

### Emission monitoring.

Process	Air	Water	Land
Raw material storage & loading	Fugitive emissions from stockpiles, bunkers Vehicle movements & Silo operation.	Spillage of liquid additives	Spillage of liquid additives.
Raw material preparation	Dust emissions from clay preparation and vehicle movements.	None	None
Drying	Exhaust of water vapour and warm exhaust gases	None	None
Firing	Exhaust of combustion products and evolved compounds from brick firing	None	None
Sorting and packing	Fugitive Dust	None	Waste packaging.
Stockyard and dispatch	Vehicle emissions Dust from hard standing.	Vehicle fuel / oil Leakage	Damaged packaging materials.
General activities	Dust from Maintenance Activity	Spillages of oils and fuels	Spillages of oils and fuels. Used refractory materials. Scrap metal and other waste from maintenance activities.

## Schedule 2

### Emissions to Controlled Waters (if applicable)

Parameter	Consent limit / requirement
General requirement	Shall at no time contain any matter to such an extent as to cause the controlled water to be poisonous or injurious to fish, fish spawn or food of fish
Suspended solids	Shall at no time contain more than:  10mg/l suspends solids in emissions to controlled waters outside the installation boundary
Biochemical oxygen demand (BOD <sub>5</sub> )	Shall at no time take up more than:  5mg/l dissolved oxygen in 5 days at 20°C in emissions to controlled waters outside the installation boundary
Oil and grease	No visible oil or grease
New or altered outlets	The outlet shall be so constructed and maintained that samples may be readily taken.  The outlet shall be used for the discharge of surface water only

### Schedule 3 Emissions release points

Ref	Source	Abatement Plant (Where Applicable)	Height	Discharge				Constituents	Comments
				Impact		Odour			
				Normal Operation	Abnormal Event	Normal Operation	Abnormal Event		
K1	Scotch Kiln 1	Not Applicable	4.1 m	Minor Significance	Significant	None	Trivial	Products of combustion HF, SOx, NOx. Varies Over Firing Cycle. Water Vapour at start	Intermittent Kiln less than 2 MW
K2	Scotch Kiln 2	Not Applicable	4.0m	Minor Significance	Significant	None	Trivial	Products of combustion HF, SOx, NOx. Varies Over Firing Cycle. Water Vapour at start	Intermittent Kiln less than 2 MW
K3	Scotch Kiln 3	Not Applicable	4.1m	Minor Significance	Significant	None	Trivial	Products of combustion HF, SOx, NOx. Varies Over Firing Cycle. Water Vapour at start	Intermittent Kiln less than 2 MW
K4	Scotch Kiln 4	Not Applicable	4.0m	Minor Significance	Significant	None	Trivial	Products of combustion HF, SOx, NOx. Varies Over Firing Cycle.	Intermittent Kiln less than 2 MW

								Water Vapour at start	
K5	Scotch Kiln 5	Not Applicable	4.0m	Minor Significance	Significant	None	Trivial	Products of combustion HF, SOx, NOx. Varies Over Firing Cycle. Water Vapour at start	Intermittent Kiln less than 2 MW
A6 – A8	Chamber Dryer Exhausts	Not Applicable	3 m	Trivial	Trivial	None	Trivial	Water vapour, Small amounts of Products of combustion	
A9	Mould Sander Extraction LEV		3.5	Insignificant	Minor Significance	None	Trivial	Sand Particulates	Small amounts
A10	General Air Ventilation		3.5	Trivial	Trivial	None	Trivial	Ventilated Air, Very small Amounts of Dust	Mainly Run During Summer Months

Schedule 4 Energy Flow Chart

**BOVINGDON  
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ENERGY FLOW CHART**

