



Notice of Variation of Permit

The Environmental Permitting (England and Wales) Regulations 2010 (As Amended) Regulation 20

To: **British Crystal Limited**

Dudley Metropolitan Borough Council (“the Council”) in the exercise of the powers conferred upon it by Regulation 20 of the Environmental Permitting (England and Wales) Regulations 2010¹ (As Amended) (“the 2010 Regulations”) hereby gives you notice as follows:

The Council has decided to vary the terms and conditions of the Permit reference **PB/98** granted to you under Regulation 13(1) of the 2010 Regulations in respect of the operation of the Installation at:

**British Crystal Limited
Unit 14 Pedmore Road Industrial Estate
Pedmore Road
Brierley Hill
DY5 1TJ**

The variation of the terms and conditions of the Permit and the date[s] on which they are to take effect are specified in Schedule 1 to this Notice.

A consolidated Permit as varied by this Notice (and by all previous variation notices listed in the “Status Log” to the Permit) is set out in Schedule 2.

Signed: **Dated:** ...17th July 2013.....

Tim Glews
Environmental Protection Manager
(Authorised to sign on behalf of Dudley Metropolitan Borough Council)

Address for all communications:
Directorate of the Urban Environment
Claughton House
Blowers Green Road
Dudley
West Midlands
DY2 8UZ

SCHEDULE 1

This schedule should be read in conjunction with the Notice of Variation ref: PB/98/WK/201322023

The requirements of this variation shall come into effect as detailed below. If no date is indicated below the variation shall take effect immediately.

Company name

The company name details in the Permit shall be amended to show the new registered company name of British Crystal Limited (company no: 5407951)

Process Description

The Process Description shall be amended to read as described below:

This installation falls within the definition of Part 2, Chapter 3, Section 3.3 Part B (b) of Schedule 1 of the Environmental Permitting (England and Wales) Regulations 2010 (as amended).

Lead glass is manufactured at the installation using recycled lead glass cullet (previously melted lead glass). Two gas fired closed pot furnaces are used for the lead glass melting operation, which each have a capacity of 500kg. Normally, only one furnace is used for the lead melting operation, but both furnaces can be used if necessary. The pot within the furnace is brought up to temperature over one to two weeks after which the cullet is gradually melted. The molten glass is then gathered manually and formed into a variety of lead glass items. Further cullet is then added to melt for further lead glass production. Typically, a pot within the furnace will last for approximately 80 melts (i.e. approximately 40 weeks based on two melts per week) before it requires replacing.

Audible high and low temperature alarm systems are fitted to both furnaces. The alarms are set to activate at temperatures below 1150°C and above 1430°C and are also linked to contact an external alarm monitoring company (Redcare) who are notified if the alarms activate and would contact one of three keyholders by telephone in the event of alarm activation. The alarm system has a battery back up so would still operate in the event of a power failure.

Each furnace is provided with extraction ducting which exhausts directly to atmosphere through the roof. The ducting serving the furnaces is vented with natural air flow but this shall be provided with a local extract ventilation system by 30th September 2013 as required by Condition 2.1 of this Permit.

Following the lead glass melt, the finished items are then placed into an electrically heated annealing oven which removes stresses inherent within the glass. The annealing oven is not ventilated directly to air. The annealing technique is to reheat the glass pieces to 475°C which is below the softening temperature and then to cool slowly through the transition temperature of 380°C then more rapidly back down to room temperature. This technique produces the finished lead glass blanks.

The finished blanks are then either sold as they are or marked and cut into lead crystal products on cutting lathes. The cutting lathes are provided with water to suppress emissions of lead glass dust produced from the cutting process. Local extraction ventilation is also provided to each glass cutting

station which captures particulate matter and ducts it to a wet arrestor unit located externally to the building. The wet arrestor unit exhausts excess air to the atmosphere via a chimney stack.

The cut glass products are polished by immersion into a still acid bath containing a mixture of hydrofluoric and sulphuric acid. Fume from the acid polishing process is captured by local extraction ventilation and directed to an acid fume scrubbing unit before being emitted to air via a chimney stack.

Deleted Conditions

The following conditions shall be deleted from the Permit:

- 1) Condition 2.3
- 2) Condition 2.8
- 3) Condition 3.2
- 4) Condition 4.9

New Conditions

The following new conditions shall be inserted into the Permit:

1) 2.0 IMPROVEMENT PROGRAMME

- 2) 2.1 The operator shall install mechanical extraction to the chimney stacks exhausting from the two lead melting furnaces which is capable of achieving an exit velocity of greater than 15metres/second during normal operation. Details of the proposed location and specification of the extraction system shall be provided to the Council in writing and approved at least 28 days prior to its installation. The extraction system shall be fully operational in both furnaces by 30th September 2013.
- 3) 4.4 All non-continuous emission monitoring of lead shall be carried out according to the main procedural requirements of BS EN 14385: 2004, with samples taken during periods of maximum emission.
- 4) 4.5 All non-continuous emission monitoring of fluoride shall be carried out in accordance with the relevant CEN standard where available, or otherwise an equivalent methodology agreed with the Council.
- 5) 4.8 Adverse results from any monitoring activity shall be investigated by the operator as soon as the monitoring data has been received. The operator shall:
 - Identify the cause of the adverse result/s and take corrective action,
 - Record as much detail as possible regarding the cause and extent of the problem, and the action taken by the operator to rectify the situation,
 - Re-test to demonstrate compliance as soon as possible; and
 - Notify the Council of the results of the re-test as soon as the data has been received.
- 6) 5.1 Furnaces designated for lead glass manufacture shall be provided with temperature recorders and audible high temperature alarms.

Amended Conditions

The following conditions of the Permit shall be amended as described below:

- 1) Section 2.0 shall be renumbered 3.0.
- 2) Conditions 2.1 and 2.2 shall be amalgamated, renumbered and amended to read as follows:
 - 3.1 All emissions into the air from any process exhaust points or building openings, other than condensed water vapour, shall be free from persistent visible emissions and droplets.
- 3) Condition 2.4 shall be renumbered 3.2 and amended as follows:
 - 3.2 The limits for emissions to air from the chimney stacks serving the furnaces shall not exceed those specified in Table 3.1 below.

TABLE 3.1 – Emissions from lead melt furnaces			
Substance	Mass Emission Value	Emission Concentration Limit	Monitoring frequency
Lead and its compounds calculated as the element	25g/hour	5 mg/m ³	Manual extractive – Annual
Particulates	0.5kg/hour	20 mg/m ³	Manual extractive – Annual
Fluoride (expressed as hydrogen fluoride)	50g/hour	5 mg/m ³	Manual extractive – At the request of the Council
Chloride (expressed as hydrogen chloride)	N/A	10 mg/m ³	Manual extractive – At the request of the Council
Nitrogen oxides	5kg/hour	500 mg/m ³	Manual extractive – At the request of the Council
Sulphur oxides expressed as sulphur dioxide	5kg/hour	250 mg/m ³	Manual extractive – Determination by fuel analysis on change of fuel and at the request of the Council

Where mass emission values are specified in Table 3.1, the emission limits for the substances specified in the table shall only apply if their measured mass emission exceeds the mass emission value. Where a mass emission limit is used to derogate the emission concentration limit, monitoring at the frequency stated in Table 3.1 must be carried out to demonstrate compliance.

The concentration of substances measured in accordance with this condition shall be expressed at reference conditions 273K and 101.3KP, measured dry. The concentrations

shall also be normalised to 13% oxygen content measured dry prior to takedown. Measurement of emission concentration and mass emission values for batch furnaces during the cooling stage should not be corrected for oxygen content after takedown has been initiated.

4) Condition 2.5 shall be renumbered 3.3 and amended as follows:

3.3 The limit for emissions to air from the chimney stack serving the acid fume scrubbing unit shall not exceed the limit specified in Table 3.2 below.

Substance	Emission Limit	Monitoring frequency
Total fluoride emissions expressed as hydrogen fluoride	5 mg/m ³	Manual extractive – Annual Indicative testing - Weekly

The concentrations of substances measured annually in accordance with this condition shall be expressed at reference conditions 273K, 101.3 kPa with oxygen and water references which shall correspond to the normal operating conditions of the acid fume scrubbing unit.

5) Condition 2.10 shall be renumbered 3.4 and amended as follows:

3.4 The acid polishing process shall be permanently ducted to an acid fume scrubbing unit to minimise emissions of hydrogen fluoride to atmosphere and to comply with the emission limit given in table 3.2 above.

6) Condition 2.6 shall be renumbered 3.5 and amended as follows:

3.5 The limit for emissions to air from the chimney stack exhausting the wet scrubbing unit serving the local extraction ventilation from the glass cutting lathes shall not exceed the limits specified in the Table 3.3 below.

Substance	Emission Limit	Monitoring frequency
Lead and its compounds calculated as the element	5 mg/m ³	Manual extractive – Annual
Particulates	20 mg/m ³	Manual extractive – Annual

The concentrations of substances measured in accordance with this condition shall be expressed at reference conditions 273.15K and 101.3 kPa, measured dry.

7) Condition 2.7 shall be renumbered 3.6

8) Condition 2.9 shall be renumbered 3.7

9) Section 3.0 shall be renumbered 4.0

10) Condition 3.1 shall be renumbered 4.1 and amended as follows:

- 4.1 An emissions monitoring programme shall be implemented and maintained which ensures that emissions to air as specified in Tables 3.1, 3.2 and 3.3 shall be monitored in accordance with the frequency stated therein unless otherwise agreed in writing with the Council.

Non-continuous extractive monitoring shall be undertaken by 31st October 2013 and at the frequency stated in Tables 3.1, 3.2 and 3.3 thereafter.

11) Condition 3.3 shall be renumbered 4.3 and amended to read as follows:

- 4.3 All non-continuous emission monitoring of particulate matter shall be carried out according to the main procedural requirements of BS ISO 9096:2003 and/or BS EN 13284-1: 2002, with samples taken during periods of maximum emission.

12) Condition 3.4 shall be renumbered 4.2.

13) Condition 3.5 shall be renumbered 4.6 and amended as follows:

- 4.6 During monitoring exercises, the process being monitored must be operated under normal conditions unless otherwise agreed in writing with the Council. The monitoring shall be undertaken at critical emission times when cullet is added to the furnace for the purposes of lead glass production.

14) Condition 3.6 shall be renumbered 4.7 and amended as follows:

- 4.7 The results of emissions monitoring undertaken in accordance with Condition 3.1 together with details of the process conditions at the time monitoring is undertaken, shall be forwarded to the Council within 28 days of the completion of the monitoring unless otherwise agreed. A record of the results shall be maintained in accordance with Condition 7.1 of this Permit.

15) Condition 3.7 shall be renumbered 4.9 and amended as follows:

- 4.9 No result should exceed the emission concentration limits specified in Tables 3.1, 3.2 or 3.3, except where either:
- a) data is obtained over at least 5 sampling hours in increments of 15 minutes or less; or
 - b) at least 20 results are obtained where sampling time increments of more than 15 minutes are involved; AND in the case of (a) or (b)
 - c) no daily mean of all 15-minute emission concentrations should exceed the specified emission concentration limits during normal operation (excluding start-up and shut-down); and
 - d) no 15-minute mean emission concentration should exceed twice the specified emission concentration limits during normal operation (excluding start-up and shut-down)

16) Condition 3.8 shall be renumbered 4.10 and amended as follows:

- 4.10 Adequate and safe facilities to enable monitoring to be carried out in accordance with Condition 4.1 shall be provided

17) Condition 3.10 shall be renumbered 4.11 and amended as follows:

- 4.11 The liquor in the acid fume scrubbing unit shall be indicatively tested for pH once per week. If the pH test indicates the pH is below 7, remedial action shall be taken to decrease the acidity of the liquor within the acid fume scrubbing unit to a pH above 7. A record of this indicative testing shall be recorded in accordance with Condition 7.1.

18) Condition 3.11 shall be renumbered 4.12 and amended as follows:

- 4.12 The concentration of hydrogen fluoride in the exhaust gases from the chimney stack serving the acid fume scrubbing unit shall be subject to a weekly indicative test using an appropriate absorption tube. The result of the test shall be recorded in accordance with condition 7.1

19) Condition 3.9 shall be renumbered 4.13 and amended as follows:

- 4.13 A daily visual assessment of contained and fugitive emissions shall be undertaken to ensure that all final releases to air are compliant with Condition 3.1 of this Permit. The exhaust points and buildings shall be observed for any visible emissions to air once per shift for a period of at least 5 minutes. The observations shall be made from a position providing an unobstructed view of the point of the emission to air by a responsible person who has been instructed to carry out these duties. A record of all observations shall be recorded in accordance with Condition 7.1. The records shall include an assessment of the nature and severity of any emission observed.

The Council shall be notified as soon as practicable if emissions to air are observed which may contravene any condition of this Permit and immediate action shall be taken to determine the cause of the emission and to prevent or minimise further emissions.

20) Section 4.0 shall be renumbered 5.0

21) Condition 4.1 shall be renumbered 5.2 and amended as follows:

- 5.2 The raw materials used in the installation and all waste materials produced by the installation shall be delivered, stored and handled with care to prevent or reduce to an absolute minimum any emissions to air. The transfer of acids must be strictly controlled to avoid spillages.

22) Condition 4.2 shall be renumbered 5.3 and amended as follows:

- 5.3 Spillages of liquids and finely divided materials shall be cleaned up immediately. Liquid spillages shall be contained and cleaned up by the use of a suitable absorbent material. Spillages of finely divided materials shall be removed by the use of vacuum

cleaning, wet cleaning methods or other appropriate techniques. Dry sweeping of dusty materials shall not be permitted.

23) Condition 4.3 shall be renumbered 5.4

24) Condition 4.4 shall be renumbered 5.7

25) Condition 4.5 shall be renumbered 5.8

26) Condition 4.6 shall be renumbered 5.9 and amended as follows:

5.9 All extraction ducting serving emission points to air shall be subject to weekly visual inspections to ensure they are maintained in a gastight condition. All inspections and details of any defects and remedial works carried out to maintain the ducting in a gastight condition shall be recorded in accordance with condition 7.1.

27) Condition 4.7 shall be renumbered 5.6

28) Condition 4.8 shall be renumbered 5.5

29) Section 5.0 shall be renumbered 6.0

30) Condition 5.1 shall be renumbered 6.1 and amended as follows:

6.1 The Operator shall maintain and implement written procedures to ensure that regular cleaning and effective preventative maintenance in accordance with the manufacturer's instructions is employed on all plant, equipment and technical means concerned with the production, capture, transport, control and exhaust of emissions which could lead to an adverse impact on the environment. A record of relevant maintenance shall be maintained in accordance with Condition 7.1.

31) Condition 5.2 shall be renumbered 6.2 and amended as follows:

6.2 Staff at all levels shall receive the necessary formal training and instruction in their duties relating to control of the process and emissions to air. Particular emphasis shall be given to training for start-up and shut-down and action required to minimise emissions during abnormal operating conditions. All employees shall be fully conversant with all aspects of any Permit conditions which are relevant to their duties and shall be provided with appropriate training and written operating instructions to enable them to carry out their duties. A record shall be maintained of all relevant training provided to staff in accordance with condition 7.1.

32) Condition 5.3 shall be renumbered 6.3

33) Condition 5.4 shall be renumbered 6.4 and amended as follows:

6.4 Any malfunction which results in emissions to atmosphere which are likely to cause an adverse effect on the local community shall be reported to the Council as soon as

practicable. Immediate action shall be taken to prevent or minimise any further emissions. A record shall be made of the incident in accordance with condition 7.1.

34) Section 6.0 shall be renumbered 7.0

35) Condition 6.1 shall be renumbered 7.1 and amended as follows:

- 7.1 The Operator shall ensure that all records required to be made by this Permit and other records made by it in relation to the operation of the Installation shall:
- (a) be made available for inspection by the Council at any reasonable time;
 - (b) be supplied to the Council on demand and without charge;
 - (c) be legible;
 - (d) be made as soon as reasonably practicable;
 - (e) indicate any amendments which have been made and shall include the original record wherever possible; and
 - (f) be retained at the Installation, or other location agreed by the Council in writing, for a minimum period of 2 years from the date when the records were made, unless otherwise agreed in writing.

General

All references to the Environmental Permitting (England and Wales) Regulations 2007 shall be replaced with references to the Environmental Permitting (England and Wales) Regulations 2010 (As Amended) ("the EP Regulations")

End of Permit Variations

Attached to this Notice is a separate document titled "Guidance for operators receiving a Variation Notice" which does not form part of the Notice. You are advised to read that document and ensure that you fully understand the requirements of the Notice and your rights of Appeal.