



**Cyfoeth
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**Natural
Resources**
Wales

Permit with introductory note

The Environmental Permitting (England & Wales) Regulations 2010

Rockwool Limited

Pencoed Rockwool
Wern Tarw
Pencoed
Bridgend
CF35 6NY

Permit number
EPR/BS6149IQ

Pencoed Rockwool

Permit number EPR/BS6149IQ

Introductory note

This introductory note does not form a part of the permit

The main features of the permit are as follows.

The “Rockwool Process” is a process whereby aluminosilicate rock, together with certain added materials, is converted to a mineral wool or fibre. The fibre produced is used for thermal insulation, fire protection and acoustic applications in the building, industrial, offshore and domestic markets.

The receipt, handling and storage of materials is carried out in such a manner as to minimise the emission of dust to air. Basalt, slag, coke and cement briquettes are stored within enclosed storage areas. Material transfer systems from storage bunkers to the cupolas are enclosed to minimise dust emissions. In addition, secondary emissions of dust which may arise from the handling of fines screened from raw materials before discharge to the cupolas are minimised by the use of enclosure.

There are three production lines i.e. line 1, line 2 and line 3. Each line is served by a cupola, where the raw materials are molten at temperatures of around 1500°C. The resultant melt flows out of the cupola to spinning machines. Exhaust gases from the cupola systems of Lines 1, 2, and 3 are treated by filtration utilising fabric filtration units. Waste gases from the cupolas are filtered and passed through afterburners to destroy carbon monoxide and hydrogen sulphide. All exhaust gases from the cupolas on lines 1, 2 and 3 are discharged to atmosphere, through release points A1, A2 and A19 respectively at a height of 75 metres above ground level. Under abnormal circumstances the waste gases can be released for short periods (usually seconds, but up to a few minutes) from shorter emergency chimneys, which release at 30 metres above ground level.

The melt from the cupolas impinge onto high speed rotating wheels or “spinners”. Air flows through the spinners causing the melt to be drawn out into fibres. Impregnating oil and binder are further added to the fibres. The binder solutions are produced at the binder unit from ammonia liquor, phenol, formalin, urea and recycled process water. The binder production process including the storage tank farm is protected by bunding. All used process water is collected, filtered and allowed to settle at the Process Water plant before recirculation to the process. Water for use in the binder plant is further purified by filtration. The Process Water plant is protected by bunding and fitted with a high level alarm. The drawn fibre or wool is then collected in an enclosed spinning chamber by means of a collecting conveyor before accumulation by variable speed transfer conveyors. Exhausted gases from the spinning chambers on Lines 1, 2, and 3 are passed through a suitably designed filtration system to control the emission of fibres and gaseous or aerosol components. Spinning chamber emissions from Lines 1, 2 and 3 are then discharged to atmosphere through release points A3, A4 and A21 respectively, which are at the top of the 2 main (i.e. 75 metre) stacks.

The fibre/wool product is cured in an oven before being trimmed. All gases contacted with the mineral wool in the curing ovens are passed through an afterburner. Flue gases from the afterburner systems are discharged to atmosphere through vent stacks (release points A5, A6 and A22) at a height of 17 metres above ground level.

The cured fibre/wool product exiting the ovens passes through cooling zones before being trimmed. The trimmed off-cuts are recycled in the process. All cooling air which passes through the mineral wool in the cooling zones, is then passed through mesh filters on Lines 1 and 2 and through a Rockwool cassette filter on Line 3. Filtered cooling air from the cooling zones is then discharged to atmosphere through vent stacks (release points A7, A8 and A23 respectively) at a height of 13 metres above ground level.

The fibre/wool product is then cut to size at the cutting section. Dust and fibres from the fibre/wool mat edge trimming and cutting sections are extracted and conveyed either to a granulation plant or dust collection system to minimise emissions to atmosphere. A cleaning system is employed to take up any material in the workplace environment. All extraction and conveying air is treated by filtration before discharge to atmosphere via three release points A9 (for dust filter), A10 (for sweep-up filter) and A11 (for the slab on-line grinder). These release points are all from stacks with the following heights: A9 and A11 are 13 metres, A10 is 10 metres above ground level. The arrested material is collected, handled and disposed by means sufficient to minimise secondary emissions of particulate material.

Some roll form product from the mainline process is utilised at five pipe section machines, where uncured raw wool is wound and moulded to a mandrel before curing, grinding, cooling and finishing. Gases from the pipe section plants are passed through filtration and afterburner systems, as appropriate before discharge to atmosphere. Emissions from "PSM56" Pipe Section plant are discharged, via a stack, at release point A12 at a height of 13 metres. Emissions from "RSMs 1, 2 and 3" Pipe Section plants are discharged, via a stack, at release points A13a, b and c respectively at a height of 13 metres. Emissions from "RSM 4" Pipe Section plant are discharged, via a stack, at release point A14 at a height of 13 metres. Emissions from the pipe section grinder are filtered before being released through emission point A18 at a height of 17 metres.

Some slab form product from the mainline process is used to make a specialist fire product on the coated batt line. A special intumescent paint is applied to both sides of the slab and dried in ovens. Emission points from this process are A26a-A26l and all are 13 metres above ground level.

Recycling at the installation:

As indicated above, waste wool and wool off-cuts are recycled within the plant at the installation in Pencoed. Customers are also encouraged to return waste wool to be recycled at the site rather than sending it to landfill. The waste is milled and mixed with cement, Rockwool fly ash, mineral substances and water to form "cement briquettes", which are then used in the feedstock mix for the cupolas. The cement briquettes are produced in a dedicated building on site known as the cement briquette plant. The briquettes are stored in racks in a curing hall while the cement dries. A fan can be switched on to vent the hall and emissions are released through point A25 at a height of 40 metres.

Key substances released to the receiving environment:

Releases to air from the activities at the installation include particulate material, sulphur dioxide, acid forming oxides of nitrogen, hydrogen sulphide, chlorides and fluorides from the cupolas, together with releases of particulates, phenol, ammonia, volatile organic compounds and formaldehyde from the downstream processes.

Releases to controlled water arise from site drainage of surface water run-off, which is released via a settlement tank to the Nant Ton-y-Groes tributary. There are no direct process discharges from the Permitted Installation.

There is no effluent treatment plant at the Permitted Installation.

The status log of the permit sets out the permitting history, including any changes to the permit reference number.

Status log of the permit		
Description	Date	Comments
Application BS6149	Duly made 18/07/02	
Request for additional information	23/09/02	
Additional information received	28/03/03	
Request for additional information	27/12/02	
Additional information received	28/03/03 and 21/05/03	
Permit determined BS6149	26/03/04	
Environment Agency initiated variation (LP3837SR) withdrawn	04/08/05	
Application for variation LP3637LK	Duly made 15/08/06	
Variation determined LP3637LK	20/03/07	
Application for variation MP3436UC	Duly made 18/07/07	
Operator request that SPL is removed from permit	28/02/08	
Request accepted	28/02/08	
Variation determined MP3436UC	05/03/08	
Application for variation EA/PPC/BS6149IQ/V005	Duly made 13/09/08	
Variation determined EA/PPC/BS6149IQ/V005	23/12/08	
Application for variation VP3031KW	Duly made 14/12/09	
Variation EPR/BS6149IQ/V006 issued (VP3031KW)	10/03/10	
Variation application EPR/BS6149IQ/V007	Duly made 23/12/10	
Additional information received	21/01/11	Updated Site Plan
Additional information received	31/01/11	NGR of emission point A22 and A23
Additional information received	11/02/11	Information regarding tank vents
Variation including consolidation of permit issued – EA/EPR/BS6149IQ/V007	22/03/11	
Regulation 60(1) Notice of request for more information	27/02/14	
Regulation 60(1) response received	30/05/14	Implementation of BAT conclusions under IED
Natural Resources Wales Glass Sector Review 2014 Permit EPR/BS6149IQ Variation issued EPR/BS6149IQ/V008	31/07/15	Varied and consolidated permit issued in modern IED condition format.

Status log of the permit

Description	Date	Comments
Natural Resources Wales Glass Sector Review 2014 Permit EPR/BS6149IQ Variation issued EPR/BS6149IQ/V009	01/03/2016	Permit varied to correct issues present in V008

End of introductory note

Permit

The Environmental Permitting (England and Wales) Regulations 2010

Permit number
EPR/BS6149IQ

This is the consolidated permit referred to in the variation and consolidation notice for application EPR/BS6149IQ/V009 authorising,

Rockwool Limited ("the operator"),

Whose registered office is


**Wern Tarw
Pencoed
Bridgend
CF35 6NY**

Company registration number **0972252**

To operate an installation at

**Wern Tarw
Pencoed
Bridgend
CF35 6NY**

to the extent authorised by and subject to the conditions of this permit.

Name	Date
	01 March 2016

Eirian Macdonald

Authorised on behalf of Natural Resources Wales

Conditions

1 Management

1.1 General management

- 1.1.1 The operator shall manage and operate the activities:
- (a) in accordance with a written management system that identifies and minimises risks of pollution, including those arising from operations, maintenance, accidents, incidents, non-conformances, closure and those drawn to the attention of the operator as a result of complaints; and
 - (b) using sufficient competent persons and resources.
- 1.1.2 Records demonstrating compliance with condition 1.1.1 shall be maintained.
- 1.1.3 Any person having duties that are or may be affected by the matters set out in this permit shall have convenient access to a copy of it kept at or near the place where those duties are carried out.

1.2 Energy efficiency

- 1.2.1 The operator shall:
- (a) take appropriate measures to ensure that energy is used efficiently in the activities;
 - (b) review and record at least every four years whether there are suitable opportunities to improve the energy efficiency of the activities; and
 - (c) take any further appropriate measures identified by a review.

1.3 Efficient use of raw materials

- 1.3.1 The operator shall:
- (a) take appropriate measures to ensure that raw materials and water are used efficiently in the activities;
 - (b) maintain records of raw materials and water used in the activities;
 - (c) review and record at least every four years whether there are suitable alternative materials that could reduce environmental impact or opportunities to improve the efficiency of raw material and water use; and
 - (d) take any further appropriate measures identified by a review.

1.4 Avoidance, recovery and disposal of wastes produced by the activities

- 1.4.1 The operator shall take appropriate measures to ensure that:
- (a) the waste hierarchy referred to in Article 4 of the Waste Framework Directive is applied to the generation of waste by the activities; and
 - (b) any waste generated by the activities is treated in accordance with the waste hierarchy referred to in Article 4 of the Waste Framework Directive; and
 - (c) where disposal is necessary, this is undertaken in a manner which minimises its impact on the environment.
- 1.4.2 The operator shall review and record at least every four years whether changes to those measures should be made and take any further appropriate measures identified by a review.

2 Operations

2.1 Permitted activities

- 2.1.1 The operator is only authorised to carry out the activities specified in schedule 1 table S1.1 (the “activities”).

2.2 The site

- 2.2.1 The activities shall not extend beyond the site, being the land shown edged in red on the site plan at schedule 7 to this permit.

2.3 Operating techniques

- 2.3.1 (a) The activities shall, subject to the conditions of this permit, be operated using the techniques and in the manner described in the documentation specified in schedule 1, table S1.2, unless otherwise agreed in writing by Natural Resources Wales.
- (b) If notified by Natural Resources Wales that the activities are giving rise to pollution, the operator shall submit to Natural Resources Wales for approval within the period specified, a revision of any plan or other documentation (“plan”) specified in schedule 1, table S1.2 or otherwise required under this permit which identifies and minimises the risks of pollution relevant to that plan, and shall implement the approved revised plan in place of the original from the date of approval, unless otherwise agreed in writing by Natural Resources Wales.
- 2.3.2 Any raw materials or fuels listed in schedule 2 table S2.1 shall conform to the specifications set out in that table.

- 2.3.3 Waste shall only be accepted if:
- (a) it is of a type and quantity listed in schedule 2 table S2.2; and
 - (b) it conforms to the description in the documentation supplied by the producer and holder.
- 2.3.4 The operator shall ensure that where waste produced by the activities is sent to a relevant waste operation, that operation is provided with the following information, prior to the receipt of the waste:
- (a) the nature of the process producing the waste;
 - (b) the composition of the waste;
 - (c) the handling requirements of the waste;
 - (d) the hazardous property associated with the waste, if applicable; and
 - (e) the waste code of the waste.
- 2.3.5 The operator shall ensure that where waste produced by the activities is sent to a landfill site, it meets the waste acceptance criteria for that landfill.

2.4 Improvement programme

- 2.4.1 The operator shall complete the improvements specified in schedule 1 table S1.3 by the date specified in that table unless otherwise agreed in writing by Natural Resources Wales.
- 2.4.2 Except in the case of an improvement which consists only of a submission to Natural Resources Wales, the operator shall notify Natural Resources Wales within 14 days of completion of each improvement.

3 Emissions and monitoring

3.1 Emissions to water, air or land

- 3.1.1 There shall be no point source emissions to water, air or land except from the sources and emission points listed in schedule 3 tables S3.1 and S3.2.
- 3.1.2 The limits given in schedule 3 shall not be exceeded.
- 3.1.3 Where a substance is specified in schedule 3 table S3.2 but no limit is set for it, the concentration of such substance in emissions to water from the relevant emission point shall be no greater than the background concentration.
- 3.1.4 Total annual emissions from the emission point(s) set out in tables schedule 3 S3.1 and S3.2 of a substance listed in schedule 3 table S3.3 shall not exceed the relevant limit in table S3.3.
- 3.1.5 Periodic monitoring shall be carried out at least once every 5 years for groundwater and 10 years for soil, unless such monitoring is based on a systematic appraisal of the risk of contamination.

3.2 Emissions of substances not controlled by emission limits

- 3.2.1 Emissions of substances not controlled by emission limits (excluding odour) shall not cause pollution. The operator shall not be taken to have breached this condition if appropriate measures, including, but not limited to, those specified in any approved emissions management plan, have been taken to prevent or where that is not practicable, to minimise, those emissions.
- 3.2.2 The operator shall:
- (a) if notified by Natural Resources Wales that the activities are giving rise to pollution, submit to Natural Resources Wales for approval within the period specified, an emissions management plan which identifies and minimises the risks of pollution from emissions of substances not controlled by emission limits;
 - (b) implement the approved emissions management plan, from the date of approval, unless otherwise agreed in writing by Natural Resources Wales.
- 3.2.3 All liquids in containers, whose emission to water or land could cause pollution, shall be provided with secondary containment, unless the operator has used other appropriate measures to prevent or where that is not practicable, to minimise, leakage and spillage from the primary container.

3.3 Odour

- 3.3.1 Emissions from the activities shall be free from odour at levels likely to cause pollution outside the site, as perceived by an authorised officer of Natural Resources Wales, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved odour management plan, to prevent or where that is not practicable to minimise the odour.
- 3.3.2 The operator shall:
- (a) if notified by Natural Resources Wales that the activities are giving rise to pollution outside the site due to odour, submit to Natural Resources Wales for approval within the period specified, an odour management plan which identifies and minimises the risks of pollution from odour;
 - (b) implement the approved odour management plan, from the date of approval, unless otherwise agreed in writing by Natural Resources Wales.

3.4 Noise and vibration

- 3.4.1 Emissions from the activities shall be free from noise and vibration at levels likely to cause pollution outside the site, as perceived by an authorised officer of Natural Resources Wales, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved noise and vibration management plan to prevent or where that is not practicable to minimise the noise and vibration.

3.5 Monitoring

- 3.5.1 The operator shall, unless otherwise agreed in writing by Natural Resources Wales, undertake the monitoring specified in the following tables in schedule 3 to this permit:
- (a) point source emissions specified in tables S3.1 and S3.2 ;
- 3.5.2 The operator shall maintain records of all monitoring required by this permit including records of the taking and analysis of samples, instrument measurements (periodic and continual), calibrations, examinations, tests and surveys and any assessment or evaluation made on the basis of such data.
- 3.5.3 Monitoring equipment, techniques, personnel and organisations employed for the emissions monitoring programme and the environmental or other monitoring specified in condition 3.5.1 shall have either MCERTS certification or MCERTS accreditation (as appropriate), where available, unless otherwise agreed in writing by Natural Resources Wales.
- 3.5.4 Permanent means of access shall be provided to enable sampling/monitoring to be carried out in relation to the emission points specified in schedule 3 tables S3.1 and S3.2 unless otherwise agreed in writing by Natural Resources Wales.
- 3.5.5 Where Continuous Emission Monitors are installed to comply with the monitoring requirements in schedule 3 table S3.1; the Continuous Emission Monitors shall be used such that
- (a) the values of the 95% confidence intervals of a single measured result at the daily emission limit value shall not exceed the following percentages:
- | | |
|------------------|-----|
| Carbon monoxide | 10% |
| Sulphur dioxide | 20% |
| Nitrogen dioxide | 20% |
| Total dust | 30% |
- (b) valid half-hourly average values shall be determined within the effective operating time (excluding the start-up and shut-down periods) from the measured values after having subtracted the value of the confidence intervals in condition 3.3.5(a);
- (c) where it is necessary to calibrate or maintain the monitor and this means that data are not available for a complete half-hour period, the half-hourly average shall in any case be considered valid if measurements are available for a minimum of 20 minutes during the half-hour period. The number of half-hourly averages so validated shall not exceed 5 per day;
- (d) daily average values shall be determined as the average of all the valid half-hourly average values within a calendar day. The daily average value shall be considered valid if no more than five half-hourly average values in any day have been determined not to be valid;
- (e) no more than ten daily average values per year shall be determined not to be valid.

4 Information

4.1 Records

4.1.1 All records required to be made by this permit shall:

- (a) be legible;
- (b) be made as soon as reasonably practicable;
- (c) if amended, be amended in such a way that the original and any subsequent amendments remain legible, or are capable of retrieval; and
- (d) be retained, unless otherwise agreed in writing by Natural Resources Wales, for at least 6 years from the date when the records were made, or in the case of the following records until permit surrender:
 - (i) off-site environmental effects; and
 - (ii) matters which affect the condition of the land and groundwater.

4.1.2 The operator shall keep on site all records, plans and the management system required to be maintained by this permit, unless otherwise agreed in writing by Natural Resources Wales.

4.2 Reporting

4.2.1 The operator shall send all reports and notifications required by the permit to Natural Resources Wales using the contact details supplied in writing by Natural Resources Wales.

4.2.2 A report or reports on the performance of the activities over the previous year shall be submitted to Natural Resources Wales by 31 January (or other date agreed in writing by Natural Resources Wales) each year. The report(s) shall include as a minimum:

- (a) a review of the results of the monitoring and assessment carried out in accordance with the permit including an interpretive review of that data;
- (b) the annual production /treatment data set out in schedule 4 table S4.2; and
- (c) the performance parameters set out in schedule 4 table S4.3 using the forms specified in table S4.4 of that schedule.

4.2.3 Within 28 days of the end of the reporting period the operator shall, unless otherwise agreed in writing by Natural Resources Wales, submit reports of the monitoring and assessment carried out in accordance with the conditions of this permit, as follows:

- (a) in respect of the parameters and emission points specified in schedule 4 table S4.1;
- (b) for the reporting periods specified in schedule 4 table S4.1 and using the forms specified in schedule 4 table S4.4 ; and
- (c) giving the information from such results and assessments as may be required by the forms specified in those tables.

- 4.2.4 The operator shall, unless notice under this condition has been served within the preceding four years, submit to Natural Resources Wales, within six months of receipt of a written notice, a report assessing whether there are other appropriate measures that could be taken to prevent, or where that is not practicable, to minimise pollution.
- 4.2.5 Within 1 month of the end of each quarter, the operator shall submit to Natural Resources Wales using the form made available for the purpose, the information specified on the form relating to the site and the waste accepted and removed from it during the previous quarter, if during that quarter the total amount accepted exceeds 100 tonnes of non-hazardous waste or 10 tonnes of hazardous waste.

4.3 Notifications

- 4.3.1 (a) In the event that the operation of the activities gives rise to an incident or accident which significantly affects or may significantly affect the environment, the operator must immediately—
- (i) inform Natural Resources Wales,
 - (ii) take the measures necessary to limit the environmental consequences of such an incident or accident, and
 - (iii) take the measures necessary to prevent further possible incidents or accidents;
- (b) in the event of a breach of any permit condition the operator must immediately—
- (i) inform Natural Resources Wales, and
 - (ii) take the measures necessary to ensure that compliance is restored within the shortest possible time;
- (c) in the event of a breach of permit condition which poses an immediate danger to human health or threatens to cause an immediate significant adverse effect on the environment, the operator must immediately suspend the operation of the activities or the relevant part of it until compliance with the permit conditions has been restored.
- 4.3.2 Any information provided under condition 4.3.1 (a)(i), or 4.3.1 (b)(i) where the information relates to the breach of a limit specified in the permit, shall be confirmed by sending the information listed in schedule 5 to this permit within the time period specified in that schedule.
- 4.3.3 Where Natural Resources Wales has requested in writing that it shall be notified when the operator is to undertake monitoring and/or spot sampling, the operator shall inform Natural Resources Wales when the relevant monitoring and/or spot sampling is to take place. The operator shall provide this information to Natural Resources Wales at least 14 days before the date the monitoring is to be undertaken.
- 4.3.4 Natural Resources Wales shall be notified within 14 days of the occurrence of the following matters, except where such disclosure is prohibited by Stock Exchange rules:
- Where the operator is a registered company:
- (a) any change in the operator's trading name, registered name or registered office address; and
 - (b) any steps taken with a view to the operator going into administration, entering into a company voluntary arrangement or being wound up.

Where the operator is a corporate body other than a registered company:

- (a) any change in the operator's name or address; and
- (b) any steps taken with a view to the dissolution of the operator.

In any other case:

- (a) the death of any of the named operators (where the operator consists of more than one named individual);
- (b) any change in the operator's name(s) or address(es); and
- (c) any steps taken with a view to the operator, or any one of them, going into bankruptcy, entering into a composition or arrangement with creditors, or, in the case of them being in a partnership, dissolving the partnership.

4.3.5 Where the operator proposes to make a change in the nature or functioning, or an extension of the activities, which may have consequences for the environment and the change is not otherwise the subject of an application for approval under the Regulations or this permit:

- (a) Natural Resources Wales shall be notified at least 14 days before making the change; and
- (b) the notification shall contain a description of the proposed change in operation.

4.3.6 Natural Resources Wales shall be given at least 14 days notice before implementation of any part of the site closure plan.

4.4 Interpretation

4.4.1 In this permit the expressions listed in schedule 6 shall have the meaning given in that schedule.

4.4.2 In this permit references to reports and notifications mean written reports and notifications, except where reference is made to notification being made "immediately", in which case it may be provided by telephone.

Schedule 1 - Operations

Table S1.1 Activities

Activity listed in Schedule 1 of the EP Regulations	Description of specified activity and WFD Annex I and II operations	Limits of specified activity and waste types
S3.4 A(1) (a)	Melting mineral substances including the production of mineral fibres in plants with a melting capacity exceeding 20 tonnes per day	From storage and receipt of recycle products and other raw materials to storage and dispatch of the mineral fibre products
	Manufacture of mineral fibre on 3 production lines	Waste types and quantities as defined in Table S2.2
	R5: Recycling / Reclamation of other inorganic materials	
	R13: Storage of wastes pending any of the operations R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced).	
S4.1 A(1) (a) (ii)	Producing organic chemicals such as organic compounds containing oxygen (for example alcohols, aldehydes, ketones, carboxylic acids, esters, ethers, peroxides, phenols, epoxy resins);	From storage and receipt of raw materials to storage of the polymer binder solution
	Production of binder solutions (e.g. phenol formaldehyde resins) at the binder unit	
Directly Associated Activity		
Products handling and recycling facilities	Product and by-product processing	From point of completion of production, or release from process as a waste, until products or wastes are exported from the installation.

Table S1.2 Operating techniques

Description	Parts	Date Received
Original permit application BS6149	The response to question 2.1 given in sections B2.2, 2.3, 2.4, 2.5 and 2.6 of the application document.	18/07/02
Additional information responses to Schedule 4 Notice	ISO 14001 – provision of a copy of Certificate of Registration. Response to questions 1 through to 6 and 8 through to 10.	28/03/03
	Response to Question 7	21/05/03
Additional information in application for substantial variation LP3637LK	“SPL Application” (N.B. Rockwool requested SPL to be removed from their permit in a letter dated 28 th February 2008. The conditions permitting the burning of SPL were removed from the permit in variation EA/PPC/BS6149IQ/V004 (MP3436UC)).	02/08/06

Table S1.2 Operating techniques

Description	Parts	Date Received
Additional information in application for substantial variation EA/PPC/BS6149IQ/V004 (MP3436UC)	"Line 3 and Briquette Plant"	05/07/07
Response to improvement condition IP11V	Noise Management Plan dated 25 th October 2013	25/10/13
Information received in support of Natural Resources Wales Glass Sector Permit Review 2014	All parts of operator response to Regulation 60 (1) notice	30/05/14

Table S1.3 Improvement programme requirements

Reference	Requirement	Date
IP13V	<p>The Operator shall submit a written report describing how the raw materials used in Cupolas 1, 2 and 3 are selected in order to reduce or prevent emissions to air.</p> <p>The Operator shall have regard to the BAT Conclusions for the Manufacture of Glass, section 1.1.4 "General Primary Techniques", and item 6.</p> <p>In particular, the report shall describe how incoming raw materials are controlled and tested prior to use to ensure that impurities are minimised. Where relevant, the report shall also give example of where existing raw materials have been substituted with alternatives (e.g. less volatile), which are less polluting with regard to air emissions from Cupolas 1, 2, and 3.</p>	30/10/15
IP14V	<p>The Operator shall submit a written report identifying which surrogate parameters are monitored continuously for the purposes of ensuring that emission levels are maintained between discontinuous measurements.</p> <p>The Operator shall have regard to the BAT Conclusions for the Manufacture of Glass, section 1.1.4 "General Primary Techniques", item 7 (vii) and shall expand on the information given in the regulation 60 notice response dated 30th May 2014.</p> <p>All parameters associated with emissions to air (Table S3.1 of this permit) which are discontinuously monitored shall be included. The report shall also describe how each surrogate parameter is measured.</p>	31/12/15
IP15V	BAT-AEL only apply during normal operating conditions. On this basis, the Operator shall submit a written report for approval by Natural Resources Wales defining the parameters of normal operating conditions. The report shall include each plant item for which BAT AEL's apply.	31/01/16
IP16V	<p>The Operator shall submit the written protocol referenced in condition 3.1.5 for the monitoring of soil and groundwater for approval by Natural Resources Wales. The protocol shall demonstrate how the Operator will meet the requirements of Articles 14(1) (b), 14(1) (e) and 16(2) of the IED.</p> <p><i>The procedure shall be implemented in accordance with the written approval from Natural Resources Wales.</i></p>	31/12/15
IP17V	The Operator shall submit a report on the baseline conditions of soil and groundwater at the installation. The report shall contain the information necessary to determine the state of soil and groundwater contamination so as to make a quantified comparison with the state upon definitive cessation of activities provided for in Article 22(3) of the IED. The report shall contain information, supplementary to that already provided in the application Site Condition Report, needed to meet the information requirements of Article 22(2) of the IED.	31/12/15

Table S1.3 Improvement programme requirements

Reference	Requirement	Date
IP18V	<p>The operator shall submit, for written approval, revised Sulphur Dioxide air emission limits for the A1, A2 and A19 emission points. The proposed emission limits shall be supported by:</p> <ul style="list-style-type: none"> proposals on how the operator intends to set a Sulphur Dioxide limit based on Sulphur balance calculations; Air quality modelling assessment which will need to demonstrate that any changes in Sulphur Dioxide emission limits will not have an impact on local air quality (this assessment will need to also demonstrate no adverse impact on designated habitats); an assessment of the environmental impact of using virgin raw material in the process as opposed to waste products. <p>On approval the submission will form part of the operating techniques referred to in the permit.</p>	31/01/16
IP19V	<p>If storing Priority Hazardous Substances on site, the Operator must carry out the following assessments with reference to the Environment Agency's guidance document H1 Annex D1 'Assessment of hazardous pollutants within surface water discharges',</p> <ul style="list-style-type: none"> Phase 1 Part A screening tests for mercury, cadmium, nickel, lead, benzene, polyaromatic hydrocarbons and any other relevant substances. Phase 1 Part B screening tests for mercury, cadmium, polyaromatic hydrocarbons and any other relevant priority hazardous substances. For any substance which is not screened out by the Phase 1 Part A or Part B screening tests the Operator will also need to carry out Phase 2 modelling, as described in H1 Annex D1. <p>The Operator must provide Natural Resources Wales with the results of the emissions monitoring, the results from the screening tests and the results from any Phase 2 modelling. The Operator may use the Environment Agency's H1 electronic screening tool to present the emissions data and to carry out the Phase 1 screening tests.</p> <p>Note: With regard to the Phase 1 Part A screening - a full list of relevant substances is provided in Tables 1 and 2 of Appendix 1 of the Environment Agency's H1 Annex D1 guidance. The Operator must review the list and carry out the screening for any substances, in addition to those specified in the notice that may be present in the installations discharges to surface water. With regard to the Phase 1 Part B screening for priority hazardous pollutants, Table 1 in section 2.3.2 of H1 Annex D1 provides a full list of relevant priority hazardous substances and their associated annual significant loads.</p>	6 months from the issue of this variation

Schedule 2 - Waste types, raw materials and fuels

Table S2.1 Raw materials and fuels

Raw materials and fuel description	Specification
No specifications set	-

Table S2.2 Permitted waste types and quantities of customer returned to Rockwool for recycling

Maximum quantity for storage at any one time	250 tonnes
Waste code	Description
10	Wastes from thermal processes
10 09	Wastes from casting of ferrous pieces
10 09 12	Other particulates other than those mentioned in 10 09 11 limited to olivine sand
10 10	Wastes from casting of non-ferrous pieces
10 10 12	Other particulates other than those mentioned in 10 10 11 limited to olivine sand
17	Construction and Demolition Wastes (including excavated soil from contaminated sites)
17 06	Insulation materials and asbestos-containing construction materials
17 06 04	Insulation materials other than those mentioned in 17 06 01 and 17 06 03

Schedule 3(a) – Emissions and monitoring

Emissions until 7th March 2016

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location	Source	Parameter	Limit (incl. unit)	Reference period	Monitoring frequency	Monitoring standard or method
A1 (75m high) NGR SS 95950 84010	Cupola 1	Particulate matter (Note 1)	30 mg/m ³	Half-hourly average	Continuous	BS ISO 10155
			10 mg/m ³	Daily average	Continuous	BS ISO 10155
A2 (75m high) NGR SS 95950 84012	Cupola 2		30 mg/m ³	As per standard method	Annual	BS EN 13284-1
			600 mg/m ³	Half-hourly average	Continuous	BS ISO 10849:1996
			500 mg/m ³	Daily average	Continuous	BS ISO 10859:1996
		Oxides of nitrogen (Note 1)	600 mg/m ³	As per standard method	Annual	BS EN 14792
			3000 mg/m ³	Half-hourly average	Continuous	BS 6069-4.4
			2500 mg/m ³	Daily average	Continuous	BS 6069-4.4
		Sulphur dioxide (Note 1)	2750 mg/m ³	As per standard method	Annual	BS EN 1911, 1-3
			50 mg/m ³	As per standard method	Annual	BS EN 1911, 1-3
			5 mg/m ³	As per standard method	Annual	BS ISO 15713
		Hydrogen Sulphide (Note 1)	5 mg/m ³	As per standard method	Annual	US EPA Method 11
		Carbon monoxide (Note 1)	200 mg/m ³	Half-hourly average	Continuous	ISO 12039
			100 mg/m ³	Daily average	Continuous	ISO 12039
A3 (75m high) NGR SS 95953 84010	Spinning chamber 1	Particulate matter	30mg/m ³	Minimum 30 minutes	6-monthly	BS EN 13284-1
		Ammonia	50 mg/m ³	Minimum 30 minutes	6-monthly	BS EN 14791
		Formaldehyde	5 mg/m ³	Minimum 30 minutes	6-monthly	BS EN 13649
A4 (75m high) NGR SS 95953 84012	Spinning chamber 2	Phenol	5 mg/m ³	Minimum 30 minutes	6-monthly	BS EN 13649
		Volatile Organic Compounds	20 mg/m ³	Minimum 60 minutes	6-monthly	BS EN 12619

Table S3.1 Point source emissions to air – emission limits and monitoring requirements

Emission point ref. & location	Source	Parameter	Limit (incl. unit)	Reference period	Monitoring frequency	Monitoring standard or method
A5 (17m high) NGR SS 95980 84021	Curing Oven 1	Particulate matter	30mg/m ³	Minimum 30 minutes	6-monthly	BS EN 13284-1
		Ammonia	80 mg/m ³	Minimum 30 minutes	6-monthly	BS EN 14791
		Formaldehyde	5 mg/m ³	Minimum 30 minutes	6-monthly	BS EN 13649
		Phenol	5 mg/m ³	Minimum 30 minutes	6-monthly	BS EN 13649
		Volatile Organic Compounds	15 mg/m ³	Minimum 60 minutes	6-monthly	BS EN 12619
A6 (17m high) NGR SS 95980 84002	Curing Oven 2	Particulate matter	30mg/m ³	Minimum 30 minutes	6-monthly	BS EN 13284-1
		Ammonia	80 mg/m ³	Minimum 30 minutes	6-monthly	BS EN 14791
		Formaldehyde	5 mg/m ³	Minimum 30 minutes	6-monthly	BS EN 13649
		Phenol	5 mg/m ³	Minimum 30 minutes	6-monthly	BS EN 13649
		Volatile Organic Compounds	15 mg/m ³	Minimum 60 minutes	6-monthly	BS EN 12619
A7 (13m high) NGR SS 95986 84021	Cooling zone 1	Particulate matter	50mg/m ³	Minimum 30 minutes	6-monthly	BS EN 13284-1
		Ammonia	50mg/m ³	Minimum 30 minutes	6-monthly	BS EN 14791
A8 (13m high) NGR SS 95986 84002	Cooling zone 2	Formaldehyde	5mg/m ³	Minimum 30 minutes	6-monthly	BS EN 13649
		Phenol	5 mg/m ³	Minimum 30 minutes	6-monthly	BS EN 13649
		Volatile Organic Compounds	10mg/m ³	Minimum 60 minutes	6-monthly	BS EN 12619
A9 (13m high) NGR SS 95990 84023	Dust Filter	Particulate Matter	10mg/m ³	Minimum 30 minutes	6-monthly	BS EN 13284-1
A10 (10m high) NGR SS 95972 84022	Sweep up filter	Particulate Matter	10mg/m ³	Minimum 30 minutes	6-monthly	BS EN 13284-1
A11 (13m high) NGR SS 95990 84020	Dust filter to "slab" on line grinder	Particulate Matter	10mg/m ³	Minimum 30 minutes	6-monthly	BS EN 13284-1
A12 (13m high) NGR SS 95935 84097	PSM 56 pipe section	Particulate Matter	10mg/m ³	Minimum 30 minutes	6-monthly	BS EN 13284-1
		Ammonia	40mg/m ³	Minimum 30 minutes	6-monthly	BS EN 14791
A13a (13m high) NGR SS 96007 84087	RSM 1 pipe section	Formaldehyde	5mg/m ³	Minimum 30 minutes	6-monthly	BS EN 13649
		Phenol	5mg/m ³	Minimum 30 minutes	6-monthly	BS EN 13649

Table S3.1 Point source emissions to air – emission limits and monitoring requirements

Emission point ref. & location	Source	Parameter	Limit (incl. unit)	Reference period	Monitoring frequency	Monitoring standard or method
A13b (13m high) NGR SS 96007 84087	RSM 2 pipe section	Volatile Organic Compounds	10mg/m ³	Average over at least 1 hour sample	6-monthly	BS EN 12619
A13c (13m high) NGR SS 96007 84087	RSM 3 pipe section					
A14 (13m high) NGR SS 96008 84087	RSM 4 pipe section					
A16 (30m high) NGR SS 95930 84015	Cupola 1 emergency chimney		No monitoring required			
A17 (30m high) NGR SS 95930 93995	Cupola 2 emergency chimney		No monitoring required			
A18 (17m high) NGR SS 95930 84030	Pipe section grinder	Particulate Matter	10 mg/m ³	Minimum 30 minutes	Annual	BS EN 13284-1
A19 (75m high) NGR SS 95950 84012	Cupola 3	Particulate Matter (Note 1)	30 mg/m ³	Half-hourly average	Continuous	BS ISO 10155
			10 mg/m ³	Daily average	Continuous	BS ISO 10155
			30 mg/m ³	As per standard method	Annual	BS EN 13284-1
		Oxides of nitrogen (Note 1)	600 mg/m ³	Half-hourly average	Continuous	BS ISO 10849: 1996
			500 mg/m ³	Daily average	Continuous	BS ISO 10849: 1996
			600 mg/m ³	As per standard method	Annual	BS EN 14792
		Sulphur dioxide (Note 1)	3000 mg/m ³	Half-hourly average	Continuous	BS 6069-4.4
			2500 mg/m ³	Daily average	Continuous	BS 6069-4.4
			2750 mg/m ³	As per standard method	Annual	BS EN 14791
		Hydrogen chloride (Note 1)	50 mg/m ³	As per standard method	Annual	BS EN 1911, 1-3
		Hydrogen fluoride (Note 1)	5 mg/m ³	As per standard method	Annual	BS ISO 15713

Table S3.1 Point source emissions to air – emission limits and monitoring requirements

Emission point ref. & location	Source	Parameter	Limit (incl. unit)	Reference period	Monitoring frequency	Monitoring standard or method
		Hydrogen sulphide (Note 1)	5 mg/m ³	As per standard method	Annual	US EPA Method 11
		Carbon monoxide (Note 1)	100 mg/m ³	Half-hourly average	Continuous	ISO 12039
			50 mg/m ³	Daily average	Continuous	ISO 12039
A20 (30m high) NGR SS 95864 84070	Cupola 3 emergency chimney	No monitoring required				
A21 (75m high) NGR SS 95860 84100	Spinning Chamber 3	Particulate matter	30 mg/m ³	Minimum 30 minutes	6-monthly	BS EN 13284-1
		Ammonia	50 mg/m ³	Minimum 30 minutes	6-monthly	BS EN 14791
		Formaldehyde	5 mg/m ³	Minimum 30 minutes	6-monthly	BS EN 13649
		Phenol	5 mg/m ³	Minimum 30 minutes	6-monthly	BS EN 13649
		Volatile Organic Compounds	20 mg/m ³	Minimum 60 minutes	6-monthly	BS EN 12619
A22 (20m high) NGR SS 95920 84090	Curing Oven 3	Particulate matter	30 mg/m ³	Minimum 30 minutes	6-monthly	BS EN 13284-1
		Ammonia	80 mg/m ³	Minimum 30 minutes	6-monthly	BS EN 14791
		Formaldehyde	5 mg/m ³	Minimum 30 minutes	6-monthly	BS EN 13649
		Phenol	5 mg/m ³	Minimum 30 minutes	6-monthly	BS EN 13649
		Volatile Organic Compounds	15 mg/m ³	Minimum 60 minutes	6-monthly	BS EN 12619
A23 (13m high) NGR SS 95922 84090	Cooling zone 3	Particulate matter	50 mg/m ³	Minimum 30 minutes	6-monthly	BS EN 13284-1
		Ammonia	50 mg/m ³	Minimum 30 minutes	6-monthly	BS EN 14791
		Formaldehyde	5 mg/m ³	Minimum 30 minutes	6-monthly	BS EN 13649
		Phenol	5 mg/m ³	Minimum 30 minutes	6-monthly	BS EN 13649
		Volatile Organic Compounds	10 mg/m ³	Minimum 60 minutes	6-monthly	BS EN 12619
A24 (20m high) NGR SS 95945 84097	Line 3 cutting saw filter	Particulate matter	10 mg/m ³	Minimum 30 minutes	Annual	BS EN 13284-1
A25 (40m high) NGR SS 95912 84033	Cement briquette plant	Particulate matter	10 mg/m ³	Minimum 30 minutes	6-monthly	BS EN 13284-1
		Ammonia	145 mg/m ³	Minimum 30 minutes	6-monthly	US EPA Method 26

Table S3.1 Point source emissions to air – emission limits and monitoring requirements

Emission point ref. & location	Source	Parameter	Limit (incl. unit)	Reference period	Monitoring frequency	Monitoring standard or method
		Formaldehyde	5 mg/m ³	Minimum 30 minutes	6-monthly	US EPA Method 316
A26a (13m high) NGR SS 95980 84066						
A26b (13m high) NGR SS 95980 84066	Fire retardant coating line			No monitoring required		
A26c (13m high) NGR SS 95980 84066	heating chamber vent					
A26d (13m high) NGR SS 95980 84066						
A26e (13m high) NGR SS 95980 84066	Fire retardant coating line air curtain at side 1 inlet			No monitoring required		
A26f (13m high) NGR SS 95980 84066	Fire retardant coating line air curtain at side 1 outlet			No monitoring required		
A26g (13m high) NGR SS 95980 84066	Fire retardant coating line air curtain at side 2 oven inlet			No monitoring required		
A26h (13m high) NGR SS 95980 84066	Fire retardant coating line air curtain at side 2 oven outlet			No monitoring required		
A26i (13m high) NGR SS 95980 84066	Fire retardant coating line side 1 coating head			No monitoring required		

Table S3.1 Point source emissions to air – emission limits and monitoring requirements

Emission point ref. & location	Source	Parameter	Limit (incl. unit)	Reference period	Monitoring frequency	Monitoring standard or method
A26j (13m high) NGR SS 95980 84066	Fire retardant coating line side 2 coating head				No monitoring required	
A26k (13m high) NGR SS 95980 84066	Fire retardant coating line side 1 drying oven extractor hood head				No monitoring required	
A26l (13m high) NGR SS 95980 84066	Fire retardant coating line cooling zone vent				No monitoring required	
A27 (1.5m above process building)	Vent from Formalin bulk storage tank				No monitoring required	
A28 (1.5m above process building)	Vent from Phenol bulk storage tank				No monitoring required	

Note 1: Periodic Measurements to be used to check CEM calibration

Table S3.2 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements

Emission point ref. & location	Source	Parameter	Limit (incl. unit)	Reference Period	Monitoring frequency	Monitoring standard or method
W1 (discharge into tributary of the Nant Ton-y-Groes at NGR SS 96213 83963)	Surface water from the site via an interceptor	pH	6.0 – 9.0	Daily flow proportional sample ^[1]	Daily	BS 6068-2.50:1995
		Suspended solids	30 mg/l	Daily flow proportional sample ^[1]	Daily	BS 6068-2.50:1995
		Ammoniacal Nitrogen	1.3 mg/l	Daily flow proportional sample ^[1]	Daily	BS6068-2.11:1984
		Phenol	0.5 mg/l	Daily flow proportional sample ^[1]	Daily	SCA Blue book – methods for the examination of water and other materials
		Formaldehyde	1 mg/l	Daily flow proportional sample ^[1]	Monthly	
		Oil and grease	5 mg/l	Daily flow proportional sample ^[1]	Monthly	FTIR
		Chemical Oxygen Demand (COD)	No limit set	Daily flow proportional sample ^[1]	Daily	BS 6068-1.34:1998
W2 (discharge into tributary of the Nant Ton-y-Groes at NGR SS 96217 83983)	Uncontaminated surface water	Inspect for visible signs of contamination	No limit set	Daily visual check	Daily	Daily visual check

[1] For 95% of all measured values of periodic samples taken over the previous 100 days.

Table S3.3 Annual limits

Substance	Medium	Limit (including unit)
Particulate matter	Air	100 tonnes / year
Oxides of nitrogen	Air	225 tonnes / year
Sulphur dioxide	Air	840 tonnes / year
Carbon monoxide	Air	30 tonnes / year
Hydrogen chloride	Air	40 tonnes / year
Hydrogen fluoride	Air	5 tonnes / year
Ammonia	Air	190 tonnes / year
Formaldehyde	Air	12 tonnes / year
Phenol	Air	12 tonnes / year
Non-methane Volatile Organic Compounds	Air	70 tonnes / year

Schedule 3(b) – Emissions and monitoring

Emissions from 8th March 2016

Table S3.1 Point source emissions to air – emission limits and monitoring requirements

Emission point ref. & location	Source	Parameter	Limit (including unit)	Reference period	Monitoring frequency	Monitoring standard or method
A1 (75m high) NGR SS 95950 84010	Cupola 1	Particulate matter	10 mg/Nm ³	Daily average	Continuous	Unless otherwise agreed in writing with Natural Resources Wales, Monitoring methods used shall be in accordance with Environment Agency document “ <i>Technical Guidance Note M2 Monitoring of stack emissions to air</i> ”.
A2 (75m high) NGR SS 95950 84012	Cupola 2	Oxides of nitrogen	500 mg/Nm ³	Daily average	Continuous	
		Sulphur dioxide	1400 mg/Nm ³	Daily average	Continuous	
		Hydrogen Chloride	30 mg/Nm ³	Average of 3 spot samples of at least 30 minutes each	Annual	
		Hydrogen fluoride	5 mg/Nm ³	Average of 3 spot samples of at least 30 minutes each	Annual	
		Hydrogen Sulphide	2 mg/Nm ³	Average of 3 spot samples of at least 30 minutes each	Annual	
		Carbon monoxide	100 mg/Nm ³	Daily average	Continuous	
		Group 1 Metals (Note 2)	1 mg/Nm ³	Average of 3 spot samples of at least 30 minutes each	6-monthly	
		Group 2 Metals (Note 3)	2 mg/Nm ³	Average of 3 spot samples of at least 30 minutes each	6-monthly	

Table S3.1 Point source emissions to air – emission limits and monitoring requirements

Emission point ref. & location	Source	Parameter	Limit (including unit)	Reference period	Monitoring frequency	Monitoring standard or method
A3 (75m high) NGR SS 95953 84010 A4 (75m high) NGR SS 95953 84012	Spinning chamber 1	Particulate matter	30 mg/Nm ³	Average of 3 spot samples of at least 30 minutes each	6-monthly	Unless otherwise agreed in writing with Natural Resources Wales, Monitoring methods used shall be in accordance with Environment Agency document “ <i>Technical Guidance Note M2 Monitoring of stack emissions to air</i> ”.
		Ammonia	50 mg/Nm ³	Average of 3 spot samples of at least 30 minutes each	6-monthly	
	Spinning chamber 2	Formaldehyde	5 mg/Nm ³	Average of 3 spot samples of at least 30 minutes each	6-monthly	
		Phenol	5 mg/Nm ³	Average of 3 spot samples of at least 30 minutes each	6-monthly	
		Volatile Organic Compounds as C	20 mg/Nm ³	Average of 3 spot samples of at least 30 minutes each	6-monthly	
		Amines	3 mg/Nm ³	Average of 3 spot samples of at least 30 minutes each	6-monthly	
A5 (17m high) NGR SS 95980 84021 and A6 (17m high) NGR SS 95980 84002	Curing Oven 1 and 2	Particulate matter	30 mg/Nm ³	Average of 3 spot samples of at least 30 minutes each	6-monthly	
		Ammonia	60 mg/Nm ³	Average of 3 spot samples of at least 30 minutes each	6-monthly	
		Formaldehyde	5 mg/Nm ³	Average of 3 spot samples of at least 30 minutes each	6-monthly	

Table S3.1 Point source emissions to air – emission limits and monitoring requirements

Emission point ref. & location	Source	Parameter	Limit (including unit)	Reference period	Monitoring frequency	Monitoring standard or method
		Phenol	5 mg/Nm ³	Average of 3 spot samples of at least 30 minutes each	6-monthly	Unless otherwise agreed in writing with Natural Resources Wales, Monitoring methods used shall be in accordance with Environment Agency document “ <i>Technical Guidance Note M2 Monitoring of stack emissions to air</i> ”.
		Volatile Organic Compounds as C	10 mg/Nm ³	Average of 3 spot samples of at least 30 minutes each	6-monthly	
		Amines	2 mg/Nm ³	Average of 3 spot samples of at least 30 minutes each	6-monthly	
		Oxides of Nitrogen (expressed as NO ₂)	200 mg/Nm ³	Average of 3 spot samples of at least 30 minutes each	6-monthly	
A7 (13m high) NGR SS 95986 84021	Cooling zone 1	Particulate matter	50 mg/Nm ³	Average of 3 spot samples of at least 30 minutes each	6-monthly	
A8 (13m high) NGR SS 95986 84002	Cooling zone 2	Ammonia	50 mg/Nm ³	Average of 3 spot samples of at least 30 minutes each	6-monthly	
		Formaldehyde	5 mg/Nm ³	Average of 3 spot samples of at least 30 minutes each	6-monthly	
		Phenol	5 mg/Nm ³	Average of 3 spot samples of at least 30 minutes each	6-monthly	
		Volatile Organic Compounds as C	10 mg/Nm ³	Average of 3 spot samples of at least 30 minutes each	6-monthly	

Table S3.1 Point source emissions to air – emission limits and monitoring requirements

Emission point ref. & location	Source	Parameter	Limit (including unit)	Reference period	Monitoring frequency	Monitoring standard or method
		Amines	3 mg/Nm ³	Average of 3 spot samples of at least 30 minutes each	6-monthly	Unless otherwise agreed in writing with Natural Resources Wales, Monitoring methods used shall be in accordance with Environment Agency document “ <i>Technical Guidance Note M2 Monitoring of stack emissions to air</i> ”.
A9 (13m high) NGR SS 95990 84023	Dust Filter	Particulate Matter	10 mg/Nm ³	Average of 3 spot samples of at least 30 minutes each	6-monthly	
A10 (10m high) NGR SS 95972 84022	Sweep up filter	Particulate Matter	10 mg/Nm ³	Average of 3 spot samples of at least 30 minutes each	6-monthly	
A11 (13m high) NGR SS 95990 84020	Dust filter to “slab” on line grinder	Particulate Matter	10 mg/Nm ³	Average of 3 spot samples of at least 30 minutes each	6-monthly	
	PSM 56 pipe section	Particulate Matter	10 mg/Nm ³	Average of 3 spot samples of at least 30 minutes each	6-monthly	
A12 (13m high) NGR SS 95935 84097	RSM 1 pipe section	Ammonia	40 mg/Nm ³	Average of 3 spot samples of at least 30 minutes each	6-monthly	
A13a (13m high) NGR SS 96007 84087	RSM 2 pipe section	Formaldehyde	5 mg/Nm ³	Average of 3 spot samples of at least 30 minutes each	6-monthly	
A13b (13m high) NGR SS 96007 84087	RSM 3 pipe section	Phenol	5 mg/Nm ³	Average of 3 spot samples of at least 30 minutes each	6-monthly	
A13c (13m high) NGR SS 96007 84087	RSM 4 pipe section	Phenol	5 mg/Nm ³	Average of 3 spot samples of at least 30 minutes each	6-monthly	
A14 (13m high) NGR SS 96008 84087		Volatile Organic Compounds as C	10 mg/Nm ³	Average of 3 spot samples of at least 30 minutes each	6-monthly	

Table S3.1 Point source emissions to air – emission limits and monitoring requirements

Emission point ref. & location	Source	Parameter	Limit (including unit)	Reference period	Monitoring frequency	Monitoring standard or method
A16 (30m high) NGR SS 95930 84015	Cupola 1 emergency chimney			No monitoring required		
A17 (30m high) NGR SS 95930 93995	Cupola 2 emergency chimney			No monitoring required		
A18 (17m high) NGR SS 95930 84030	Pipe section grinder	Particulate Matter	10 mg/Nm ³	Average of 3 spot samples of at least 30 minutes each	Annual	Unless otherwise agreed in writing with Natural Resources Wales, Monitoring methods used shall be in accordance with Environment Agency document “ <i>Technical Guidance Note M2 Monitoring of stack emissions to air</i> ”.
		Particulate Matter	10 mg/Nm ³	Daily average	Continuous	
		Oxides of nitrogen	500 mg/Nm ³	Daily average	Continuous	
		Sulphur dioxide	1400 mg/Nm ³	Daily average	Continuous	
		Hydrogen chloride	30 mg/Nm ³	Average of 3 spot samples of at least 30 minutes each	Annual	
A19 (75m high) NGR SS 95950 84012	Cupola 3	Hydrogen fluoride	5 mg/Nm ³	Average of 3 spot samples of at least 30 minutes each	Annual	
		Hydrogen sulphide	2 mg/Nm ³	Average of 3 spot samples of at least 30 minutes each	Annual	
		Carbon monoxide (Note 1)	50 mg/Nm ³	Daily average	Continuous	
		Group 1 Metals (Note 2)	1 mg/Nm ³	Average of 3 spot samples of at least 30 minutes each	6-monthly	

Table S3.1 Point source emissions to air – emission limits and monitoring requirements

Emission point ref. & location	Source	Parameter	Limit (including unit)	Reference period	Monitoring frequency	Monitoring standard or method
		Group 2 Metals (Note 3)	2 mg/Nm ³	Average of 3 spot samples of at least 30 minutes each	6-monthly	
A20 (30m high) NGR SS 95864 84070	Cupola 3 emergency chimney	No monitoring required				
A21 (75m high) NGR SS 95860 84100	Spinning Chamber 3	Particulate matter	30 mg/Nm ³	Average of 3 spot samples of at least 30 minutes each	6-monthly	Unless otherwise agreed in writing with Natural Resources Wales, Monitoring methods used shall be in accordance with Environment Agency document "Technical Guidance Note M2 Monitoring of stack emissions to air".
		Ammonia	50 mg/Nm ³	Average of 3 spot samples of at least 30 minutes each	6-monthly	
		Formaldehyde	5 mg/Nm ³	Average of 3 spot samples of at least 30 minutes each	6-monthly	
		Phenol	5 mg/Nm ³	Average of 3 spot samples of at least 30 minutes each	6-monthly	
		Volatile Organic Compounds as C	20 mg/Nm ³	Average of 3 spot samples of at least 30 minutes each	6-monthly	
		Amines	3 mg/Nm ³	Average of 3 spot samples of at least 30 minutes each	6-monthly	
A22 (20m high) NGR SS 95920 84090	Curing Oven 3	Particulate matter	30 mg/Nm ³	Average of 3 spot samples of at least 30 minutes each	6-monthly	

Table S3.1 Point source emissions to air – emission limits and monitoring requirements

Emission point ref. & location	Source	Parameter	Limit (including unit)	Reference period	Monitoring frequency	Monitoring standard or method
		Ammonia	60 mg/Nm ³	Average of 3 spot samples of at least 30 minutes each	6-monthly	Unless otherwise agreed in writing with Natural Resources Wales, Monitoring methods used shall be in accordance with Environment Agency document “ <i>Technical Guidance Note M2 Monitoring of stack emissions to air</i> ”.
		Formaldehyde	5 mg/Nm ³	Average of 3 spot samples of at least 30 minutes each	6-monthly	
		Phenol	5 mg/Nm ³	Average of 3 spot samples of at least 30 minutes each	6-monthly	
		Volatile Organic Compounds as C	10 mg/Nm ³	Average of 3 spot samples of at least 30 minutes each	6-monthly	
		Amines	2 mg/Nm ³	Average of 3 spot samples of at least 30 minutes each	6-monthly	
		Oxides of Nitrogen (expressed as NO ₂)	200 mg/Nm ³	Average of 3 spot samples of at least 30 minutes each	6-monthly	
A23 (13m high) NGR SS 95922 84090	Cooling zone 3	Particulate matter	50 mg/Nm ³	Average of 3 spot samples of at least 30 minutes each	6-monthly	
		Ammonia	50 mg/Nm ³	Average of 3 spot samples of at least 30 minutes each	6-monthly	
		Formaldehyde	5 mg/Nm ³	Average of 3 spot samples of at least 30 minutes each	6-monthly	

Table S3.1 Point source emissions to air – emission limits and monitoring requirements

Emission point ref. & location	Source	Parameter	Limit (including unit)	Reference period	Monitoring frequency	Monitoring standard or method
		Phenol	5 mg/Nm ³	Average of 3 spot samples of at least 30 minutes each	6-monthly	Unless otherwise agreed in writing with Natural Resources Wales, Monitoring methods used shall be in accordance with Environment Agency document “ <i>Technical Guidance Note M2 Monitoring of stack emissions to air</i> ”.
		Volatile Organic Compounds as C	10 mg/Nm ³	Average of 3 spot samples of at least 30 minutes each	6-monthly	
		Amines	3 mg/Nm ³	Average of 3 spot samples of at least 30 minutes each	6-monthly	
A24 (20m high) NGR SS 95945 84097	Line 3 cutting saw filter	Particulate matter	10 mg/Nm ³	Average of 3 spot samples of at least 30 minutes each	Annual	
A25 (40m high) NGR SS 95912 84033	Cement briquette plant	Particulate matter	10 mg/Nm ³	Average of 3 spot samples of at least 30 minutes each	6-monthly	
		Ammonia	145 mg/Nm ³	Average of 3 spot samples of at least 30 minutes each	6-monthly	
		Formaldehyde	5 mg/Nm ³	Average of 3 spot samples of at least 30 minutes each	6-monthly	
A26a (13m high) NGR SS 95980 84066	Fire retardant coating line heating chamber vent			No monitoring required		
A26b (13m high) NGR SS 95980 84066						
A26c (13m high) NGR SS 95980 84066						
A26c (13m high) NGR SS 95980 84066						

Table S3.1 Point source emissions to air – emission limits and monitoring requirements

Emission point ref. & location	Source	Parameter	Limit (including unit)	Reference period	Monitoring frequency	Monitoring standard or method
A26d (13m high) NGR SS 95980 84066						
A26e (13m high) NGR SS 95980 84066	Fire retardant coating line air curtain at side 1 inlet				No monitoring required	
A26f (13m high) NGR SS 95980 84066	Fire retardant coating line air curtain at side 1 outlet				No monitoring required	
A26g (13m high) NGR SS 95980 84066	Fire retardant coating line air curtain at side 2 oven inlet				No monitoring required	
A26h (13m high) NGR SS 95980 84066	Fire retardant coating line air curtain at side 2 oven outlet				No monitoring required	
A26i (13m high) NGR SS 95980 84066	Fire retardant coating line side 1 coating head				No monitoring required	
A26j (13m high) NGR SS 95980 84066	Fire retardant coating line side 2 coating head				No monitoring required	
A26k (13m high) NGR SS 95980 84066	Fire retardant coating line side 1 drying oven extractor hood head				No monitoring required	

Table S3.1 Point source emissions to air – emission limits and monitoring requirements

Emission point ref. & location	Source	Parameter	Limit (including unit)	Reference period	Monitoring frequency	Monitoring standard or method
A26I (13m high) NGR SS 95980 84066	Fire retardant coating line cooling zone vent				No monitoring required	
A27 (1.5m above process building)	Vent from Formalin bulk storage tank				No monitoring required	
A28 (1.5m above process building)	Vent from Phenol bulk storage tank				No monitoring required	

Note 1: CEMs which meet the MCERTS requirements should also follow the principles of EN 14181 (i.e. QAL2/AST and QAL3) but a reduced number of parallel measurements may be acceptable (subject to NRW approval).

Note 2: Group 1 metals (and their compounds): Arsenic, Cobalt, Nickel, Cadmium, Selenium, Chromium VI

Note 3: Group 2 metals (and their compounds): Arsenic, Cobalt, Nickel, Cadmium, Selenium, Chromium (VI), Antimony, Lead, Chromium (III), Copper, Manganese, Vanadium Tin

Table S3.2 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements

Emission point ref. & location	Source	Parameter	Limit (incl. unit)	Reference Period	Monitoring frequency	Monitoring standard or method
W1 (discharge into tributary of the Nant Ton-y-Groes at NGR SS 96213 83963)	Surface water from the site via an interceptor	pH	6.5 – 9.0	Daily flow proportional sample ^[1]	Daily	BS 6068-2.50:1995
		Suspended solids	30 mg/l	Daily flow proportional sample ^[1]	Weekly	BS EN 872:2005
		Ammoniacal Nitrogen	1.3 mg/l	Daily flow proportional sample ^[1]	Daily	BS6068-2.11:1984
		Phenol	0.5 mg/l	Daily flow proportional sample ^[1]	Daily	SCA Blue book – methods for the examination of water and other materials
		Formaldehyde	1 mg/l	Daily flow proportional sample ^[1]	Monthly	
		Oil and grease	5 mg/l	Daily flow proportional sample ^[1]	Monthly	FTIR
		Chemical Oxygen Demand (COD)	No limit set	Daily flow proportional sample ^[1]	Daily	BS 6068 – 2.34:1988
W2 (discharge into tributary of the Nant Ton-y-Groes at NGR SS 96217 83983)	Uncontaminated surface water	Inspect for visible signs of contamination	No limit set	Daily visual check	Daily	Daily visual check

[1] For 95% of all measured values of periodic samples taken over the previous 100 days.

Schedule 4(a) – Reporting

Requirements until 7th March 2016

Table S4.1 Reporting of monitoring data

Parameter	Emission or monitoring point/reference	Reporting period	Period begins
Emissions to air (continuous) Parameters as required by condition 3.5.1	A1, A2, A19	Quarterly	1 January, 1 April, 1 July, 1 October
Emissions to air (periodic) Parameters as required by condition 3.5.1	A3, A4, A5, A6, A7, A8, A21, A22, A23, A25	Every 6 months	1 January, 1 July
Emissions to air (periodic) Parameters as required by condition 3.5.1	A1, A2, A9, A10, A11, A12, A13a, A13b, A13c, A14, A18, A19, A24	Annual	1 January
Surface water monitoring Parameters as required by condition 3.5.1	W1	Quarterly	1 January, 1 April, 1 July, 1 October

Table S4.4 Reporting forms

Media/ parameter	Reporting format (or other form as agreed in writing by Natural Resources Wales)	Date of form
Air	Form Air 1 (annual periodic monitoring emission points A1, A2, A19)	04/03/08
	Form Air 2A (Bi-annual periodic monitoring emission points A3 – A11, A21 – A23, A25)	04/03/08
	Form Air 2B (Bi-annual periodic monitoring emission points A12 – A14, A16, A18, A24)	04/03/08
	Form Air 3 (Particulate matter continuous monitoring emission points A1, A2, A19)	04/03/08
	Form Air 4 (Oxides of nitrogen as NO ₂ continuous monitoring, emission points A1, A2, A19)	04/03/08
	Form Air 5 (sulphur dioxide continuous monitoring, emission points A1, A2, A19)	04/03/08
	Form Air 8 (carbon monoxide continuous monitoring, emission points A1, A2, A19)	04/03/08
	Form Air 13 (annual mass release emission points A1 – A14, A16, A18 & A24)	04/03/08
Water	Form Water 1 (quarterly report for emission point W1)	01/03/07
Energy usage	Form Energy 1	01/03/07
Water usage	Form Water usage 1	01/03/07
Other performance indicators	Form Performance 1	04/03/08

Table S4.2: Annual production/treatment

Parameter	Units
Mineral wool produced	tonnes

Table S4.3 Performance parameters

Parameter	Frequency of assessment	Units
Water usage	Annually	Tonnes
Gas usage	Annually	MWh
Electricity usage	Annually	MWh
Coke usage	Annually	MWh
Total energy usage	Annually	MWh
Internal recycle of Rockwool and Rockwool products	Annually	Tonnes
Recycle of Rockwool and Rockwool products from external sources	Annually	Tonnes

Schedule 4(b) – Reporting

Requirements from 8th March 2016

Table S4.1 Reporting of monitoring data

Parameter	Emission or monitoring point/reference	Reporting period	Period begins
Emissions to air (continuous) Parameters as required by condition 3.5.1	A1, A2, A19	Quarterly	1 January, 1 April, 1 July, 1 October
Emissions to air (periodic) Parameters as required by condition 3.5.1	A1, A2, A3, A4, A5, A6, A7, A8, A19, A21, A22, A23, A25	Every 6 months	1 January, 1 July
Emissions to air (periodic) Parameters as required by condition 3.5.1	A1, A2, A9, A10, A11, A12, A13a, A13b, A13c, A14, A18, A19, A24	Annual	1 January
Surface water monitoring Parameters as required by condition 3.5.1	W1	Quarterly	1 January, 1 April, 1 July, 1 October

Table S4.2: Annual production/treatment

Parameter	Units
Mineral wool produced	tonnes

Table S4.3 Performance parameters

Parameter	Frequency of assessment	Units
Water usage	Annually	M ³
Gas usage	Annually	MWh
Electricity usage	Annually	MWh
Coke usage	Annually	MWh
Total energy usage	Annually	MWh
Internal recycle of Rockwool and Rockwool products	Annually	Tonnes
Recycle of Rockwool and Rockwool products from external sources	Annually	Tonnes

Table S4.4 Reporting forms		
Media/parameter	Reporting format (or other form as agreed in writing by Natural Resources Wales)	Date of form
Air	Form Air 1 (annual periodic monitoring emission points A1, A2, A18, A19, A24)	31/07/15
	Form Air 2A (Bi-annual periodic monitoring emission points A1 – A11, A19, A21 – A23, A25)	31/07/15
	Form Air 2B (Bi-annual periodic monitoring emission points A12 – A14)	31/07/15
	Form Air 3 (Particulate matter continuous monitoring emission points A1, A2, A19)	31/07/15
	Form Air 4 (Oxides of nitrogen as NO ₂ continuous monitoring, emission points A1, A2, A19)	31/07/15
	Form Air 5 (sulphur dioxide continuous monitoring, emission points A1, A2, A19)	31/07/15
	Form Air 8 (carbon monoxide continuous monitoring, emission points A1, A2, A19)	31/07/15
Water	Form Water 1 (quarterly report for emission point W1)	31/07/15
Energy usage	Form Energy 1	31/07/15
Water usage	Form Water usage 1	31/07/15
Other performance indicators	Form Performance 1	31/07/15

Schedule 5 - Notification

These pages outline the information that the operator must provide.

Units of measurement used in information supplied under Part A and B requirements shall be appropriate to the circumstances of the emission. Where appropriate, a comparison should be made of actual emissions and authorised emission limits.

If any information is considered commercially confidential, it should be separated from non-confidential information, supplied on a separate sheet and accompanied by an application for commercial confidentiality under the provisions of the EP Regulations.

Part A

Permit Number	EPR/BS6149IQ
Name of operator	Rockwool Limited
Location of Facility	Wern Tarw, Pencoed, Bridgend, CF35 6NY.
Time and date of the detection	

(a) Notification requirements for any activity that gives rise to an incident or accident which significantly affects or may significantly affect the environment	
To be notified Immediately	
Date and time of the event	
Reference or description of the location of the event	
Description of where any release into the environment took place	
Substances(s) potentially released	
Best estimate of the quantity or rate of release of substances	
Measures taken, or intended to be taken, to stop any emission	
Description of the failure or accident.	

(b) Notification requirements for the breach of a permit condition	
To be notified immediately	
Emission point reference/ source	
Parameter(s)	
Limit	
Measured value and uncertainty	
Date and time of monitoring	
Measures taken, or intended to be taken, to stop the emission	

Time periods for notification following detection of a breach of a limit	
Parameter	Notification period

(c) In the event of a breach of permit condition which poses an immediate danger to human health or threatens to cause an immediate significant adverse effect on the environment:	
To be notified immediately	
Description of where the effect on the environment was detected	
Substances(s) detected	
Concentrations of substances detected	
Date of monitoring/sampling	

Part B - to be submitted as soon as practicable

Any more accurate information on the matters for notification under Part A.	
Measures taken, or intended to be taken, to prevent a recurrence of the incident	
Measures taken, or intended to be taken, to rectify, limit or prevent any pollution of the environment which has been or may be caused by the emission	
The dates of any unauthorised emissions from the facility in the preceding 24 months.	

Name*	
Post	
Signature	
Date	

* authorised to sign on behalf of Rockwool Limited

Schedule 6 - Interpretation

“Annex I” means Annex I to Directive 2008/98/EC of the European Parliament and of the Council on waste.

“Annex II” means Annex II to Directive 2008/98/EC of the European Parliament and of the Council on waste.

“authorised officer” means any person authorised by Natural Resources Wales 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(4) of that Act.

“accident” means an accident that may result in pollution.

“application” means the application for this permit, together with any additional information supplied by the operator as part of the application and any response to a notice served under Schedule 5 to the EP Regulations.

“background concentration” means such concentration of that substance as is present in:

- for emissions to surface water, the surface water quality up-gradient of the site; or
- for emissions to sewer, the surface water quality up-gradient of the sewage treatment works discharge.

“D” means a disposal operation provided for in Annex I to Directive 2008/98/EC of the European Parliament and of the Council on waste.

“EP Regulations” means The Environmental Permitting (England and Wales) Regulations SI 2010 No.675 and words and expressions used in this permit which are also used in the Regulations have the same meanings as in those Regulations.

“emissions of substances not controlled by emission limits” means emissions of substances to air, water or land from the activities, either from the emission points specified in schedule 3 or from other localised or diffuse sources, which are not controlled by an emission limit..

“groundwater” means all water, which is below the surface of the ground in the saturation zone and in direct contact with the ground or subsoil.

“hazardous property” has the meaning given in Schedule 3 of the Hazardous Waste (England and Wales) Regulations 2005 No.894 and the Hazardous Waste (Wales) Regulations 2005 No. 1806 (W.138).

“hazardous waste” has the meaning given in the Hazardous Waste (England and Wales) Regulations 2005 No.894, the Hazardous Waste (Wales) Regulations 2005 No. 1806 (W.138), the List of Wastes (England) Regulations 2005 No.895 and the List of Wastes (Wales) Regulations 2005 No. 1820 (W.148).

“IED” means Industrial Emissions Directive

“Industrial Emissions Directive” means DIRECTIVE 2010/75/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 24 November 2010 on industrial emissions

“MCERTS” means the Environment Agency’s Monitoring Certification Scheme.

“quarter” means a calendar year quarter commencing on 1 January, 1 April, 1 July or 1 October.

“R” means a recovery operation provided for in Annex II to Directive 2008/98/EC of the European Parliament and of the Council on waste.

“Waste code” means the six digit code referable to a type of waste in accordance with the List of Wastes (England) Regulations 2005, or List of Wastes (Wales) Regulations 2005, as appropriate, and in relation to hazardous waste, includes the asterisk.

“year” means calendar year ending 31 December.

Where a minimum limit is set for any emission parameter, for example pH, reference to exceeding the limit shall mean that the parameter shall not be less than that limit.

Unless otherwise stated, up until (and including) 07/03/16 any references in this permit to concentrations of substances in emissions into air means:

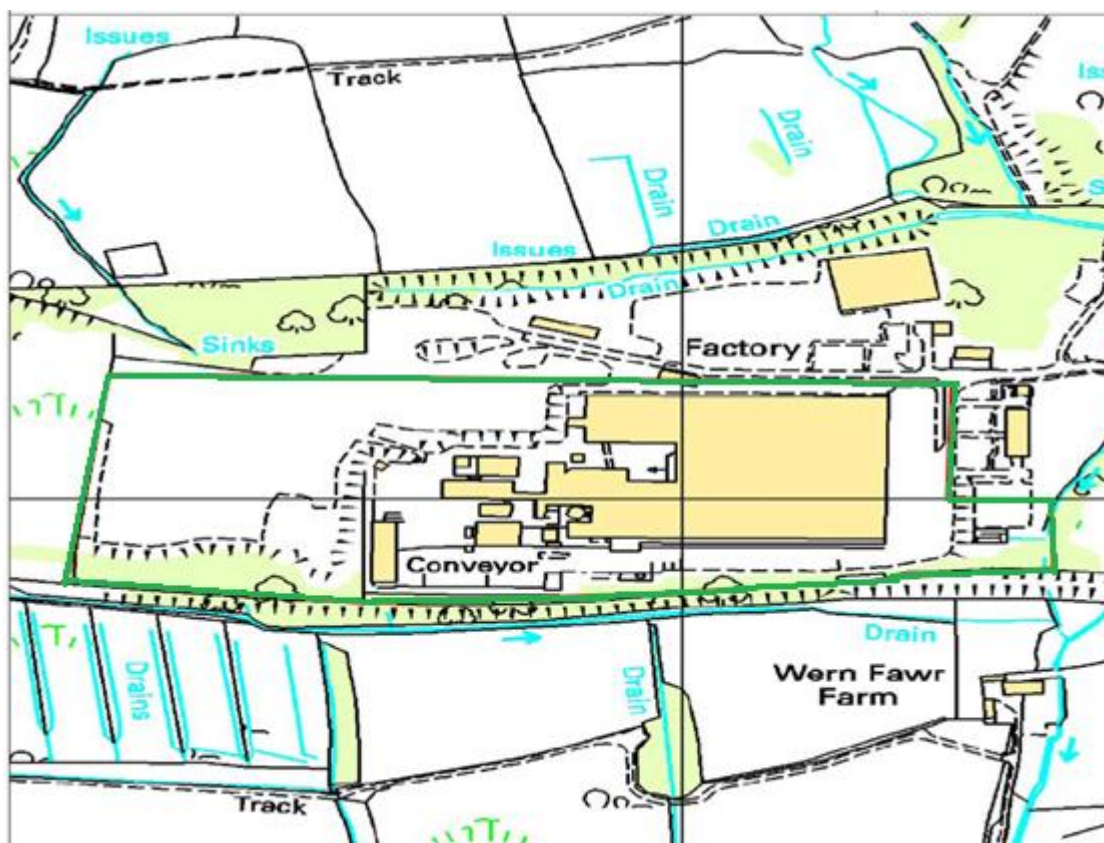
- (a) in relation to emissions from combustion processes, the concentration in dry air at a temperature of 273K, at a pressure of 101.3 kPa and with an oxygen content of 8% dry for liquid and gaseous fuels, 6% dry for solid fuels; and/or
- (b) in relation to emissions from non-combustion sources, the concentration at a temperature of 273K and at a pressure of 101.3 kPa, with no correction for water vapour content.
- (c) in relation to emissions from the cupola furnaces, the concentration in dry air at a temperature of 273K, at a pressure of 101.3 kPa and with an oxygen content of 8% dry for liquid and gaseous fuels, 6% dry for solid fuels

Unless otherwise stated, from 08/03/16 any references in this permit to concentrations of substances in emissions into air means:

- (a) in relation to emissions from the cupola(s), the concentration in dry air at a temperature of 273K, at a pressure of 101.3 kPa and with an oxygen content of 8%.
- (b) in relation to emissions from other sources (none melting, downstream processes), the concentration in dry air at a temperature of 273K, at a pressure of 101.3 kPa with no correction for oxygen.

BS EN 14181 is applicable to large combustion plant (LCP) and waste incineration installations (WID) under the international Industrial Emissions Directive standard (IED). For other processes that are not classified as being WID or LCP, the monitoring standards for Continuous Emission Monitoring Systems (CEMS) should follow the principles of BS EN 14181 (i.e. QAL1, QAL2/AST & QAL3); however these procedures may be modified with written agreement from NRW. Further guidance on BS EN 14181, and its application, is contained in Environment Agency Technical Guidance Note [M2 – Monitoring of stack emissions to air](#).

Schedule 7 - Site plan



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