

Compliance Assessment Report

Report ID:
CAR_NRW0033776

This form will report compliance with your permit as determined by an NRW officer

Site	Padeswood Cement Works	Permit Ref	BL1096IB			
Operator/Permit holder	Castle Cement Limited					
Regime	Installations					
Date of assessment	24/10/2018	Time in	10:00	Out	17:00	
Assessment type	Site Inspection					
Parts of the permit assessed	Various					
Lead officer's name	Ross, Stuart					
Accompanied by						
Recipient's name/position	Elliot Wellbelove/ Process Eng. & QE Manager	Date issued	06/12/2018			

Section 1 – Compliance Assessment Summary

This is based on the requirements of the permit under the Environmental Permitting Regulations or the licence under the Water Resources Act 1991 as amended by the Water Act 2003. A detailed explanation is captured in "Compliance Assessment Report Detail" (Section 2) and any actions you may need to take are given in the "Action(s)" (section 4). This summary details where we believe any non-compliance with the permit has occurred, the relevant condition and how the non-compliance has been categorised using our Compliance Classification Scheme (CCS). CCS Scores can be consolidated or suspended where appropriate, to reflect the impact of some non-compliances more accurately. For more details of our CCS scheme, contact your local office.

Permit conditions and compliance summary	CCS Category	Condition(s) breached
A1 - Specified by permit	A	
B1 - Infrastructure - Engineering for prevention and control of emissions	C3	1.1
	C3	1.1
G4 - Monitoring and Records, Maintenance and Reporting - Reporting and notification to Natural Resources Wales	A	

KEY: See Section 5 for breach categories, suspended scores will be indicated as such.

A = Assessed or assessed in part (no evidence of non-compliance), **X** = Action only, **O** = Ongoing non-compliance, not scored.

Number of breaches recorded	2	Total compliance score (see section 5 for scoring scheme)	8
------------------------------------	----------	---	----------

If the Number of breaches recorded is greater than zero, please see Section 3 for our proposed enforcement response

Section 2 – Compliance Assessment Report Detail

This section contains a report of our findings and will usually include information on:

- The part(s) of the permit that were assessed (eg. Maintenance, training, combustion plant, etc)
- Where the type of assessment was 'Data Review' details of the report/results triggering the assessment
- Any non-compliances identified
- Any non-compliances with directly applicable legislation
- Details of any multiple non-compliances
- Information on the compliance score accrued inc.
- Details of advice given
- Any other areas of concern
- Any actions requested
- Any examples of good practice
- A reference to photos taken

This Compliance Assessment Report follows a review of Part A & B notifications and a site inspection 24/10/18 during which these notifications and other matters were discussed. A site inspection of external yard areas was completed.

1. Part A & B Notifications (Fugitive Dust Emissions)

16/05/18 – Silo 14 Pressure Release Valve

Castle Cement reported a release of an estimated 150 Kg of cement dust from cement silo 14. The investigation found that when cement mill 3 was sending product to silo 14 the level monitoring equipment stopped registering when the silo reached 11ft. In normal operation the cement mill controllers/operators stop the running to the silo when it gets to around 9 to 10ft, the high-high level probe was activated but due to material in the system the silo level went slightly above its capacity and material escaped through the PV valve on top of the silo settling on top of the silo with a small amount running off the top of the silo and becoming airborne although quickly dissipating to ground level close to the silo without leaving the confines of the site boundary.

There are two measuring devices in place to prevent over filling of the silos. One is a level probe which shows the current height of material in the silo and is used for stock control. The other is physical probe at the top of the silo with a 1m paddle. This physical probe indicates the silo is nearly at max capacity.

The silo level probe was inspected, cleaned and put back into action. The alarm levels on the level probe have been adjusted to stop the mill at lower volumes in the silo.

The level probes in this silo and four others will be upgraded to a new more reliable best available technology. (This was already planned but will now be expedited at a cost of £15k in July 2018)

An interlock for the physical high level will be put in place so if it is reached then the probe will not only stop the mill but also the transport system. This will prevent material continuing to be delivered to the silo after the mill has stopped. This has been put into place for all silos which have the same capacity of silo 14. It was deemed as not necessary on other silos, as 1m of space in the head of the silos will be more than sufficient to allow the transport systems to empty.

NRW considers that there was insufficient ullage within the silo once the High High alarm was activated. If this level probe had been set up differently the material within the transport system could have been contained and this incident could have been avoided.

This incident is in breach of permit condition 1.1 and attracts a CCS score of 3.

Action – clarify why the level probes raise an alarm (and require subsequent operator intervention) opposed to causing the loading of silos to cease automatically at a pre-determined level. Please do so by 21/12/18.

31/05/18 – Raw Mill System

Castle Cement reported a release of dust and gases (estimated <25 Kg) from the raw mill system that was reportedly localised and dissipated within the site boundaries. The raw mill fan was stopped when the emission was noticed.

The mill had been down for maintenance and following a restart and before feed was put into the mill it was noticed that there was vapour and fugitive dust escaping from the system. Upon inspection it was found that the slide damper SD02 was closed when it should have been open. This damper allows air to flow out of the raw mill system and into the gas conditioning tower. As this damper was closed it led to an over pressurisation in the raw mill system which led to the release of fugitive steam and dust.

The raw mill fan was stopped, and the shift team physically freed the slide damper from its closed position. An investigation found that the slide damper was not in the fully open position, but the open limit was shown to be met. The damper was also not in the closed position and the closed position was not met.

The operator carried out monitoring of the open limit over a 2-week period and the stalling of the damper whilst opening – neither events recurred. The operator reports that this appears to be a unique situation where both the open position has stuck open and also the damper stalling during operation. If either of these events had not happened, then a fugitive release would not have occurred.

Action - Confirm the findings of the sites commitment to investigate the possibilities of a more robust system for damper positioning. Please do so by 21/12/18.

27/07/18 - Hot Gas Generating

Castle Cement reported a dust release (estimated 60 Kg) from the pre-heater tower during the hot gas generating process. The operator later stated that the estimated quantity was excessive.

In the Part B notification, Castle Cement report that various operational difficulties lead to raw meal stocks being fully depleted. To re- build stocks and restart the kiln the process of hot gas generating was started whereby heat from the kiln is drawn through the raw mill circuit to allow production of raw meal.

During this process an access door on a cyclone is opened to allow ambient air to be drawn into the system to control temperatures. This is completed in accordance with procedures HGG. However, upon opening the access door a release of dust occurred. The dust was residual from around the door frame and was released under positive pressure in the top of the pre-heater tower.

Immediately following the release, the kiln controller was contacted to increase the speed of the ID fan which in turn created a greater negative pressure.

The operator reports that hot gas generating is rare. Measures have been taken to prevent a recurrence including the revision of associated procedures and the method to allow the opening of the door under higher negative pressure. Fan settings have been reviewed to increase the negative pressure.

NRW considers that the opening of a door on a cyclone during operations is potentially an unsafe practice and recommend that Castle Cement satisfies itself that this has been adequately risk assessed.

Action – submit a copy of the revised Hot Gas Generating Procedure to NRW by 21/12/18.

Action – Castle Cement will be aware that this is not the first occasion during which hot gas generating has led to a fugitive dust release from a cyclone door. We therefore require Castle Cement to assess the feasibility of an engineered solution (e.g. dedicated air bleed) that will provide improved environmental protection. A copy of the assessment and its findings shall be submitted to NRW by 18/01/19.

04/08/18 – Kiln Feed Building

Castle Cement reported a dust release (estimated 10 Kg) from the kiln feed building for bucket elevator BE01. During a shift managers' site walk it was found that the building had a quantity of airborne dust within. The filter hopper that de dusts the elevator was found to be full blocking the inlet duct to the filter and causing an over pressurisation causing raw meal to escape from the elevator. It was reported that the bulk of the dust was contained within the building. The kiln was immediately stopped when the emission was identified.

In the Part B notification, Castle Cement report that the bag filter experienced a failure on the rotary coupling that has since been upgraded from plastic to metal to reduce the risk of a repeat failure. This work has also been carried out on a secondary filter serving the kiln feed elevator.

Action – confirm the outcome of the proposal to install a rotation monitor on the bag filters serving the kiln feed elevator. Please do so by 21/12/18.

16/08/18 – Kiln Inlet Seal Release

Castle Cement reported that an estimated 20-30 Kg of dust and hot gases were released from the kiln inlet. In the Part B notification, Castle Cement report that the kiln had been stopped for the previous two days due to a blockage on cyclone 4. The kiln was started at 07:50 and soon after start up a fugitive release was observed from the kiln inlet camera. Normally inlet emissions are caused by unbalanced airflows within the kiln system. To try to resolve the

issue the kiln controller increased the speed of the ID fan, MBF fan and cooler fan.

None of these steps appeared to reduce the emissions from the inlet and the decision was taken to stop the kiln at 08:35. It was then believed that the dust was originating from a blockage on the kiln slope. After cardoxing, operatives thought they had identified and removed a blockage. Upon restart of the kiln at 10:50 the emissions had reduced but as the kiln continued to run the dust release from the kiln inlet became progressively worse and the kiln was stopped at 13:00.

Following the second stop a further inspection was carried out and it was discovered that the kiln inlet dust chute was blocked. This chute is used to capture material caught in the inlet seal and therefore prevents the release of fugitive dust.

The shift teams are now focussed on cleaning the inlet dust chute before kiln restart. An investigation will be carried out to implement an early warning of dust chute blocking (level detection).

21/08/18 – Raw Mill Building / Main Bag Filter Release

Castle Cement reported that an estimated 50 Kg of dust was released from the raw mill building locally onto the site and that the raw mill was shut down within 2 minutes of the visual detection of the dust escape. This incident was witnessed by members of the public and photographs were provided to NRW showing a plume of dust rising from ground level, above the height of the pre-heater tower and beyond the site boundary. No complaints were received reporting dust on vehicles or property.

In the Part B Notification, Castle Cement report that the cause of the incident was a fault on an electrical panel which controls the pulsing system on the main bag filter bags. The fault caused the pulsing to stop which led to a build-up of material (dust) on the bags. This led to an increase in differential pressure and the over pressurisation of the inlet to the filter. This over pressurisation led to dust escaping from ductwork from the raw mill system.

Castle Cement report that immediate action was taken to implement a kiln stop interlock, this looks at one of the pressure sensors in the common duct (serving kiln and raw mill) pre-main bag filter and causes the kiln to stop operating if the duct work experiences positive pressure for more than 5 minutes.

A new control system alarm has also been implemented to alert the kiln controller that the main bag filter pulsing system is not operational.

The electrical department is liaising with the bag filter equipment manufacturer for further guidance on how to further investigate the fault.

NRW considers that inadequate control measures were in place to monitor the operation of the pulsing system on the main bag filter and to detect the over pressurisation of the common duct. The main bag filter is environmentally critical equipment and must be monitored to ensure its performance is maintained at the required level. Failure to de dust bags may also lead to further environmental impacts should the system become damaged by an over pressurisation event.

This is a breach of permit condition 1.1 and attracts a CCS score of 3.

As discussed, NRW notes that on an annual basis Castle Cement continues to report several fugitive dust releases (ranging in scale) relating to the abnormal operation of the process. Castle Cement completes retrospective root cause analysis of each breach and typically identifies deficiencies in the plant infrastructure and / or the measures in place (e.g. instrumentation or an absence of) to detect abnormal plant operation and to allow timely intervention.

Action - With the objective of preventing and minimising the release of fugitive dust emissions and permit compliance, NRW requires that Castle Cement completes a systematic (phased) critical review of the manufacturing process e.g. HAZOP study. Please inform NRW of your proposed approach to address this action by 18/01/19.

2. Other Matters

Cemfuel Storage

During the site inspection the activated carbon filters serving the Cemfuel tanks were inspected. It was noted that the outlet of the final filter is open and facing skyward which will allow the ingress of rainwater that may render the filter ineffective. The filter maintenance regime was also unknown.

Action – Inspect the filter media to assess water ingress and drain down if required. Take steps to prevent rain water ingress. Clarify the maintenance regime for these filters including the details of the assessments completed to ensure

the media is not exhausted. Provide a copy of the most recent filter media test report. Please do so by 21/12/18.

SRF Storage

Trailers containing SRF are stored on site prior to use. These trailers may potentially contain small quantities of leachate and should regularly be monitored for leaks and remedial measure taken if required. Trailers should be parked on impermeable surfaces and not near surface water drains.

Plant Sound Monitoring

Routine shift manager's walks include checks on the operation of key items of plant and equipment, during which any unusual sound levels / vibration can be detected. It is recommended that a more targeted and in depth assessment of key plant sound levels and character is made on a regular basis to allow the early identification of issues that may give rise to complaints.

3. Outstanding Actions

With reference to Compliance Assessment Report reference CAR_NRW0033135, provide a response to the following outstanding actions by 21/12/18.

Action – *As, discussed, NRW seeks clarification as to how Castle Cement ensured that all cemfuel contaminated soils and stones were recorded from the contaminated area around the cooler building i.e. no contamination was left in situ.*

Further to subsequent correspondence on this matter, please provide NRW with the soil sample analysis results that support Castle Cements contention that all contaminated material was removed.

Action - *develop and implement a detailed procedure for the prevention and minimisation of fugitive dust emissions from external road / yard areas and the transportation of materials onto and off site including internal movements by 27/07/18. This must include the required standards of housekeeping, cleaning regimes and control measures, contingencies (e.g. additional staff resource in dry weather or during potentially dusty construction work) and internal audit/supervision of those control measures. The procedure should include roles and responsibilities for Hanson employees, and where applicable 3rd party contractors and hauliers. It must be communicated effectively and enforced.*

Action - *To reduce (at source) the presence of dust in external areas, complete a review of the origin of spilt dusty materials and their existing control measures. Identify opportunities for improvement to ensure Best Available Techniques are employed. Identify areas for improvement (as appropriate) and provide NRW with an improvement plan by 31/08/18.*

Action - *With the objective of minimising the risk of kiln over pressurisation. assess the feasibility of implementing a control system measure (e.g. system alarm) for when the imbalance between raw meal feed and fuel feed rates is likely to be incompatible with kiln stability. Provide NRW your findings by 31/08/18.*

EPR Compliance Assessment Report

**Report ID:
CAR_NRW0033776**

This form will report compliance with your permit as determined by an NRW officer

Site	Padeswood Cement Works	Permit Ref	BL10961B
Operator/Permit holder	Castle Cement Limited	Date	24/10/2018

Section 3 – Enforcement Response

You must take immediate action to rectify any non-compliance and prevent repetition. Non-compliance with your permit conditions constitutes an offence and can result in criminal prosecutions and/or suspension or revocation of a permit. Please read the detailed assessment in Section 2 and the steps you need to take in Section 4 below.

Section 4 – Action(s)

This section summarises the actions identified during the assessment along with the timescales for when they will need to be completed.

Criteria Ref.	CCS Category	Action required/advised	Due Date
See Section 1 above			
B1	C3	Refer Details Section	21/12/2018
B1	C3	Refer Details Section	21/12/2018

Section 5 – Compliance notes for the Operator

To ensure you correct actual or potential non-compliance we may

- Advise on corrective actions verbally or in writing
- Require you to take specific actions verbally or in writing
- Issue a notice
- Require you to review your procedures or management system
- Change some of the conditions of your permit
- Decide to undertake a full review of your permit

Any breach of a permit condition is an offence and we may take legal action against you

- We will normally provide advice and guidance to assist you to come back into compliance either after an offence is committed or where we consider that an offence is likely to be committed. This is without prejudice to any other enforcement response that we consider may be required.
- Enforcement action can include the issue of a formal caution, prosecution, the service of a notice and/or suspension or revocation of the permit.

See our Enforcement and Civil Sanctions guidance for further information

This report does not relieve the site operator of the responsibility to

- Ensure you comply with the conditions of the permit at all times and prevent pollution of the environment
- Ensure you comply with other legislative provisions which may apply

Non-compliance scores and categories

CCS category	Description	Score
C1	A non-compliance that could have a major environmental effect	60
C2	A non-compliance which could have a significant environmental effect	31
C3	A non-compliance which could have a minor environmental effect	4
C4	A non-compliance which has no potential environmental effect	0.1

Operational Risk Appraisal (Opra) - Compliance assessment findings may affect your Opra score and/or your charges. This score influences the resource we use to assess permit compliance.

Section 6 – General information

Data protection notice

The information on this form will be processed by the Natural Resources Wales (NRW) to fulfil its regulatory and monitoring functions and to maintain the relevant public register(s). The NRW may also use and/or disclose it in connection with:

- Offering/providing you with its literature/services relating to environmental matters
- Consulting with the public, public bodies and other organisations (eg. Health and Safety Executive, local authorities) on environmental issues
- Carrying out statistical analysis, research and development on environmental issues
- Providing public register information to enquirers
- Investigating possible breaches of environmental law
- Assessing customer service satisfaction and improving its service
- Freedom of Information Act/Environmental Regulations request

The NRW may pass it on to its agents/representatives to do these things on its behalf. You should ensure that any persons named on this form are informed of the contents of this data protection notice.

Disclosure of information

The NRW will provide a copy of this report to the public register(s). However, if you consider that any information contained in this report should not be released to the public register(s) on the grounds of commercial confidentiality, you must write to your local area office within fifteen working days of receipt of this form indicating which information it concerns and why it should not be released, giving your reasons in full.

Customer charter

What can I do if I disagree with this compliance assessment report?

If you are unable to resolve the issue with your site officer, you should firstly discuss the matter with officer's line managers using the informal appeals procedure. If you wish to raise your dispute further through our official Complaints and Commendations procedure, phone our general enquiry number 0300 065 3000 (Mon to Fri 08.00 – 18.00) and ask for the Customer Contact team or send an email to enquiries@naturalresourceswales.gov.uk. If you are still dissatisfied you can make a complaint to the Public Services Ombudsman for Wales. For advice on how to complain to the Ombudsman phone their helpline on 0845 607 0987.

Welsh Language

If you would like this form in Welsh please contact your Regulatory Officer.