ENVIRONMENTAL MANAGEMENT MANUAL

ISO 14001: 2015

REVISION RECORD

Revision Number	Revision Date	Sections Affected and Revision Summary	Revised By	Approved By
0	07.04.17	All sections revised to the requirements of ISO 14001:2015 standard	B Reynolds	T McManus
1	18.01.19	Breedon ownership of company revised. Clarity provided for Management Review (IMS section 9.3) to demonstrate compliance with Clause 4.4(a) of 14001:2015.	P Heduan	B Reynolds
2	04.04.19	Personnel changes reflected in updates to section 5.3	P Heduan	B Reynolds
3	08.04.20	Statement of Measures table updated for 'Date for Completion' column. Updated detail on 'External Factors' for Covid 19 public health guidance implications	P Heduan	B Reynolds
4	17.02.21	Context of organisation (S.4.1) and Internal/External factors updated to include 'pandemic'. Reference to 'Sustainability manager' replaces 'Technical manager'. EMP objectives (table 13) updated to include newly defined and agreed sustainability/biodiversity objective	P Heduan	B Reynolds
5	09.03.22	Update on the Environmental Product Declaration (EPD) in Section 4.3. Types of meetings (in person) updated in Section 5.1. Table 7 updated to reflect appointment of Environmental Graduate	P Heduan	B Reynolds

1. INTRODUCTION:

1.1 Company Profile

The Lagan Group opened its first quarry at White Mountain on the outskirts of Belfast in 1960 and Lagan has been a name synonymous in the quarrying and construction industries ever since. To meet future demands of the group, Lagan Cement was constructed as an ultra-modern cement manufacturing facility on a 400-acre site located at Kinnegad, Co. Westmeath. The cement plant began production in 2002 and has the capacity to produce up to 700,000 tonnes of cement per annum.

The manufacture of cement combines both the cement works and the quarries on site. The main raw materials used are limestone and shale. Cement is produced in a specially designed kiln and is heated to very high temperatures with the required mix of raw materials. These materials need to be finely ground and mixed in precise proportions to form a raw meal of required chemistry. The raw meal is heated in the kiln process to form what is known as clinker. The clinker is milled down to produce the final cement powder. Gypsum is also added at the final grinding stage to control the setting time of the cement.

Lagan Cement were granted an Integrated Pollution Prevention Control (IPPC) licence on 21st May 2001. This is a registered licence (Reg. No. 487-01) with the Environmental Protection Agency (EPA). This licence was updated in 2003 with licence Reg. No. 487-02 to increase the production of cement. An updated licence, No. 487-03, to co-fuel meat and bone meal at the plant was granted in 2006. A technical amendment was issued in 2007 to provide for the use of dewatered drinking sludge as a secondary raw material. Licence number 487-04 was issued for the introduction of waste materials as raw materials and fuel sources and also in relation to a tonnage capacity increase. In January 2009, licence P0487-05 was granted for the introduction of solid recovered fuels and waste tyres as combustion fuels. The previous licence, 487-06 was issued to expand the limestone quarry footprint and to expand the range of alternative fuels for use. Licence 487-07 was granted in February 2018, which resulted in changes to quarry blast AOP limits, TOC limits on A201 and a number of other amendments from the previous licence including groundwater and ambient dust monitoring requirements.

In April 2018, Lagan Cement, was acquired by the Breedon Group and the previously family owned business was taken in charge by a Publicly Limited Company (PLC) trading on the international stock exchange. Although the ownership structure of the company has changed, the environmental compliance requirements for the company have not, and the company will continue to be regulated by the Environmental Protection Agency under the Industrial Emissions Licence. The Environmental Management System interested parties and internal/ external factors for the EMS have been expanded to take account of this wider ownership structure, but, other than this, the core elements and scope of the EMS have not changed significantly.

1.2 Scope of the Environmental Management System

The scope of the EMS applies to the cement manufacturing and quarrying facilities at Breedon Cement and relates to the production of both bulk and bag cement. Breedon Cement will undertake to employ a strategy that not only encompasses all of its activities but those of all relevant stakeholders. By implementing the EMS, Breedon Cement aim to positively influence their impact on the environment and the impact of other businesses that they interact with.

1.3 Purpose of the Environmental Management Manual

The purpose of this Environmental Management Manual (EMM) is to define the Environmental Management System (EMS) with regards to Breedon Cement's activities and to demonstrate that this EMM meets all the requirements of an EMS as per the ISO 14001: 2015 standard. This document will provide guidance to all relevant stakeholders for the implementation and operation of the EMS.

2 NORMATIVE REFERENCES

There are no normative references associated with ISO 14001:2015.

3. TERMS AND CONDITIONS

The following are some of the core terms and definitions associated with this environmental management system.

Context of the organization	The range of issues that can affect, positively or negatively, the way an organization manages its environmental responsibilities.
Issues	Issues can be internal or external, positive or negative and include environmental conditions that either affect or are affected by the organization.
Interested parties	Much more detail about considering their needs and expectations, then deciding whether to adopt any of them as compliance obligations.
Leadership	Requirements specific to top management who are defined as a person or group of people who directs and controls an organization at the highest level.
Risk and opportunities	Refined planning process replaces preventive action. Aspects and impacts now part of risk model
Communication	There are explicit and more detailed requirements for both internal and external communications.
Documented Information	Replaces documents and records
Operational planning and control	Generally, more detailed requirements, including a consideration of procurement, design and the communication of environmental requirements 'consistent with a life cycle perspective'
Performance evaluation	Covers the measurement of EMS, operations that can have a significant environmental impact, operational controls, compliance obligations and progress towards objectives.
Nonconformity and corrective action	More detailed evaluation of both the nonconformities themselves and corrective actions required.

4. CONTEXT OF ORGANISATION

4.1 Breedon Cement and its Context:

Breedon Cement are a part of the Breedon Group. As a cement works, Breedon Cement operate a quarry, a manufacturing plant, a product dispatch and ancillary activities. The manufacturing process is classed as a 'heavy industry' and requires an Industrial Emissions (IE) licence as its activity is listed in the first schedule of the Environmental Protection Agency Act 1992 as amended. To define its context, (See Fig 1), Breedon Cement will periodically review both the internal and external issues that are relevant to its organisation and that influence improvements in its environmental management system (See Fig 2). These issues will take into account all environmental conditions being affected by or capable of affecting the organisation. Any action plans or improvements identified will be reviewed in detail within the company's environmental objectives and targets. A site Risk Assessment & Evaluation (ELRA) will also be utilised to identify and reduce potential environmental incidents.

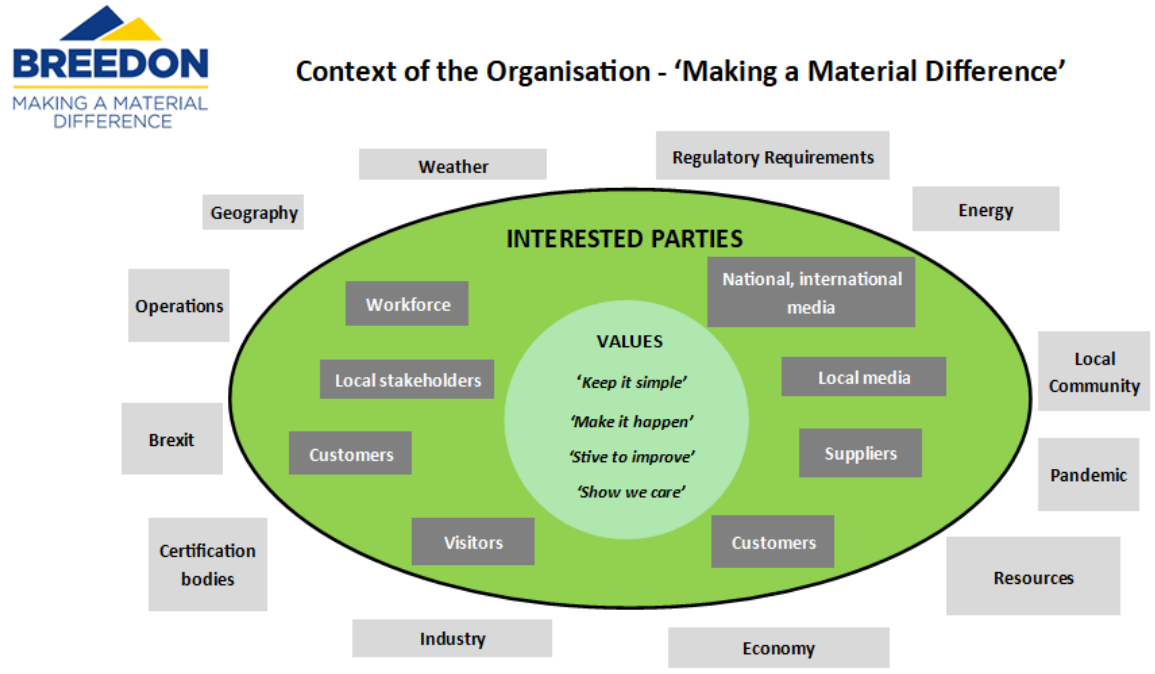


Fig 1: Context of the Organisation

Fig 2. Overview of Internal and External Factors Influencing Improvement of EMS

4.1.1 Review of Internal Factors Influencing EMS:

Table 1 – Factors influencing EMS

	Internal Factor	Current Status	Action Plan
1	Board of Directors	• As a plc organisation, the Breedon Board of Directors decisions on the resources allocated to environmental performance is critical to ensure the success of the EMS • Significant capital expenditure projects require board approval and will be completed at routinely held Board meetings	• Explicit commitment to a group wide environmental strategy for 2022 and beyond through clear goals (through the GCCA Sustainability Scheme) and allocation of the resources required for achieving same • Ensure Environmental Performance reports to the Board are thorough, robust and clear in terms of resource requirements
1	Management Commitment	• Importance and focus on site environmental issues and performance are discussed daily at three different levels. • Level 1 – departmental review. Any concerns not resolved at level 1 are raised at the Level 2 (line manager/supervisor level) or if required direct to Level 3 (Senior Management Team). Again any concerns raised at Level 2 that cannot be resolved are raised to Level 3. • Weekly and monthly environmental departmental reports/meetings allow for communication up/down the management structure. • Monthly Environmental Reports cascade up to the Plant Manager.	• Utilise the written environmental strategy for 2022 to achieve goals within a specific timeframe • Complete all reports and requests for resources within timeframes as required to ensure satisfactory achievements of projects

		• Quarterly Executive Presentations allow for environmental discussion at a senior manager, plant manager and CEO level. • Specific budget allowance set for environmental equipment, testing and on-going compliance. • Management commitment towards Breedon Cement becoming a 'top performer' within the cement industry throughout Europe (alternative fuels optimisation, processing SRF onsite, fabric filter air emissions abatement, ambient dust minimisation)	
	Internal Factor	**Current Status**	**Action Plan**
2	Employee Commitment	• Participation in training/toolbox talks. • Current engagement of the EMS through site environmental procedures. • On-going environmental improvements through suggestions or concerns raised	• Review the 'environmental suggestions' structure through the WIN – 'What's Important Now' ideas suggestion scheme
	Internal Factor	**Current Status**	**Action Plan**
3	Complexity of Operations	• Breedon Cement operates a large quarrying and manufacturing facility and has undertaken a comprehensive risk assessment to take into account all relevant aspects.	• No specific action required.
	Internal Factor	**Current Status**	**Action Plan**
4	Availability of Resources	• Annual assessment of key deliverables in terms of equipment, systems and processes ensures on-going	• No specific action required.

		availability of adequate resources. • Environmental budget reviewed on an annual basis to ensure adequate resources.	
	Internal Factor	**Current Status**	**Action Plan**
5	Regulatory Compliance	• A high level of regulatory compliance is essential to the on-going success of the EMS. • Breedon Cement maintain a high level of environmental compliance with respect to their Industrial Emissions licence. • The current IE licence 487-07 was approved in Feb 2018 and compliance is a minimum requirement of the Kinnegad cement facility	• Breedon are continually going 'beyond compliance' in terms of environmental sustainability and will continue this through our EMP objectives and targets in 2022 and seeking accreditation to the GCCA scheme
	Internal Factor	**Current Status**	**Action Plan**
6	Positive Reputation	• Breedon Cement communicate to local stakeholders and are involved in on-going community wide sponsorship. • Breedon Cement have a positive relationship with the relevant regulatory bodies which is reflected through the numerous successful planning applications and licence renewals.	• Despite Covid 19 lockdown restrictions, there is ongoing liaison with local community, engagement programme with local schools and other educational outreach work done with schools/colleges • No specific action required.
	Internal Factor	**Current Status**	**Action Plan**
7	Other Management Systems	• In terms of other management systems that compliment and assist the Environmental Management System, Breedon Cement are currently certified to the BES 6001 – 'Responsible Sourcing of Construction Products', ISO 50001 'Energy Management System', ISO 9001	• Ongoing work on all systems certification to ensure standards are retained.

		'Quality Management System' and ISO 45001 'Health and Safety Management System.	
	Internal Factor	**Current Status**	**Action Plan**
8	Continuous Improvement	• As a part of the continuous improvement with regards to the environmental management system and general compliance, Breedon Cement employ a Plan-Do-Check-Act (PDCA) model.	• No specific action required.
9	**Internal Factor**	**Current Status**	**Action Plan**
	Company shareholders	• Ensuring the ongoing environmental compliance requirements are achieved • Ongoing communications programme with stakeholders on developments with the operations in Kinnegad	• Compliance obligations to be maintained through rigorous management, PDCA model and internal and external auditing process • Communication programme to be maintained as outlined above
10	**Internal Factor**	**Current Status**	**Action Plan**
	Pandemic	• Throughout the last few years, Breedon personnel, operations and sales have been affected by various travel restrictions and other requirements to prevent the spread of the Covid 19 pandemic	• Continue to adhere to all HSE guidance and advise in terms of limiting transmission pathways for CV19. Priority of maintaining human health and wellbeing is above all else for all Breedon Cement Ireland Ltd.

4.1.2 Review of External Factors Influencing EMS:

Table 2 – External factors influencing EMS

	External Factor	Current Status	Action Plan
1	**Geography**	• As a part of the Risk Based Methodology used to 'rate' the complexities of the site in terms of geography, the following areas are taken into account, 'nearest sensitive receptors', 'protected ecological sites', 'groundwater protection' and 'sensitivity of receiving waters'. • The overall rating in terms of the location or geography is classed as a 'medium' rating.	• No specific action required
	External Factor	**Current Status**	**Action Plan**
2	**Weather & Acts of God**	• The main weather issue that could potentially affect operations and the EMS would be heavy flooding on site. To minimise this potential issue, foundation sump pumps have been placed at various locations around the plant, a stand-by duty pump has been placed on the terrace sump, both the balancing lagoon and the settlement lagoons can also be isolated and utilised as 'containment vessels' for any additional quarry water that may need to be pump from the quarry floor. • Other weather events including lack of precipitation and high winds can also cause ambient dust issues onsite	• No specific action required for flooding events except for the ongoing maintenance program for plant and quarry equipment • Ambient dust suppression is actioned on an ongoing basis through the provision of resources through the quarry department and a monthly monitoring programme is maintained by the environmental department
	External Factor	**Current Status**	**Action Plan**
3	**Regulatory Requirements**	• The main external regulatory requirements that influence the EMS are the Industrial Emissions Licence, the Greenhouse Gas Permit, and Repak obligations. • All external regulatory requirements are reviewed for compliance on an on-going basis.	• Review of new license conditions required when Final Determination issued.

		• The IE license is currently under review and a formal objection has been submitted to a number of new conditions.	
	External Factor	**Current Status**	**Action Plan**
4	**Energy Security**	• The main energy security for the plant is in relation to the long term security of 'Solid Recovered Fuel (SRF)'. This has been achieved with the commissioning of the SRF processing facility as a joint venture between Breedon and Panda Waste in Q1 2019	• No specific action required.
	External Factor	**Current Status**	**Action Plan**
5	**Customer/Contractor Requirements**	• Certain customer / contractors require Breedon Cement to be ISO 14001 accredited as a requirement of their own EMS or tendering processes. • Breedon Cement have been successfully certified to the ISO 14001 standard since 2003 and have also successfully transitioned to the 2015 standard in 2018.	• No specific action required.
	External Factor	**Current Status**	**Action Plan**
6	**Local Community**	• Local community support or opposition can have a positive or negative impact on operations and in turn on the EMS, future planning and development. • Breedon Cement engage with the local communities through one-to-one dialogue, community support, school tours, employment skills workshops and local sponsorships. Community updates are also facilitated through Newsletters, Breedon website, social media profiles and Site Open Days.	• On-going engagement with the local community through a wide variety of platforms.
	External Factor	**Current Status**	**Action Plan**
7	**External Resources Pool**	• In terms of ensuring on-gong license and legislative compliance, Breedon Cement have access to a wide external resource pool that includes experts in	• No specific action required

		all environmental technical and legal fields.	
	External Factor	**Current Status**	**Action Plan**
8	**Industry Competition**	• As Breedon Cement cannot influence the output, pricing or quality of external competitors, Breedon can only strive to be the best at what they do and be better than the competition. • The culture and ethos at Breedon Cement is clearly focused on the mind set of 'Being Even Better'.	• No specific action required
	External Factor	**Current Status**	**Action Plan**
9	**Requirements of Certification Bodies**	• The auditors of a certification body will outline the structure or context around the required improvements whether they need major, minor or potential improvements and thus will heavily influence on-going improvements.	• On-going review of new standards.
	External Factor	**Current Status**	**Action Plan**
10	**External Economic Factors**	• There are many economic factors such as Brexit, inflation, unemployment, disposable income etc that can ultimately influence a business. However an individual business cannot influence major external issues but must focus on growth of their own company and their positive impact on the economy.	• No specific action required
	External Factor	**Current Status**	**Action Plan**
11	**Shareholders**	• Positive return on investment is the main factor concerning the majority of Shareholders of the Breedon Group plc. financial success is primarily indirectly influenced by the successful operation of the EMS and reporting of the Financial Status of the company is reported annually to Shareholders by Breedon UK colleagues. • In Kinnegad, ensuring a good level of environmental compliance with the regulatory authorities, ongoing certification to the 14001 standard and	• Ensuring ongoing compliance with the Industrial Emissions licence is achieved through ongoing rigorous management, PDCA model and internal and external auditing processes • Communication programme with local stakeholders to be maintained as outlined previously • Communications of developments in Kinnegad with Breedon

		maintaining a positive relationship with local community will also be of importance to company shareholders	colleagues in the UK for the biannual Breedon Voice magazine
	External Factor	**Current Status**	**Action Plan**
12	**Pandemic**	• Disruption to local, national and international operations of Breedon Cement from 2020 in relation to the Covid 19/ Coronavirus pandemic outbreak. Health Services Executive guidelines has limited movement of environmental and other personnel to the Kinnegad site but compliance with the IE licence requirements are still required to be adhered to • Unknown implications of ongoing changes to public health guidelines on ability of personnel to complete first person work on the site in Kinnegad	• Remote work practices developed to ensure licence compliance was not compromised • Ongoing communication with the licence regulator (EPA) in relation to the implications of public health guidelines on environmental work required onsite • Commitment from senior management that environmental compliance will not be compromised as a result of Covid implications whilst also adhering to public health guideline instructions.

4.2 Understanding the needs and expectations of interested parties:

Breedon Cement have identified their relevant interested parties and have reviewed the needs and expectations of each. An 'interested party' is defined as '*a person or organisation that can affect, be affected by, or perceive itself to be affected by a decision or activity*'. This list will be reviewed on an annual basis and updated if necessary.

Table 3 – Assessment of Relevant Interested Parties:

	Relevant Parties	Needs and Expectations	Significance to Environmental Performance	Requirement for Environmental Compliance
1	Employees	• Good working environment • High standard of health, safety and welfare • Targets and goals • Input and recognition • Good rate of pay • Future (job security)	• High level of importance in the overall operation and continual improvement of the EMS	• Employee engagement is a compliance obligation for a successful EMS
2	Sub-Contractors	• Good working environment • High standard of health, safety and welfare • Good rate of pay.	• Important that all sub-contractors are aware of and adhere to the relevant EMS criteria	• Subcontractor engagement is a compliance obligation for a successful EMS

3	Neighbours	• High standard of corporate governance (ethical behaviour), • Environmental protection, • Information pertaining to their concerns and locality • Local jobs and community support.	• High level of importance as 'nuisance' issues can directly impact on local neighbours and can therefore heavily influence plant governance and operations.	• Neighbour consideration is a compliance obligation.
4	Local Businesses	• High standard of corporate governance (ethical behaviour), • Environmental protection, • Information pertaining to their concerns and locality • Timely payment for services rendered.	• Medium level of significance. Local businesses will have a positive economic impact by Breedon, however there is to major environmental significance due to physical location of plant and nearest businesses.	• Local businesses not considered as a compliance obligation.
5	Environmental Protection Agency	• High standard of environmental compliance and	• High level of significance in relation to compliance as the EPA are the	• EPA would be considered a compliance obligation.

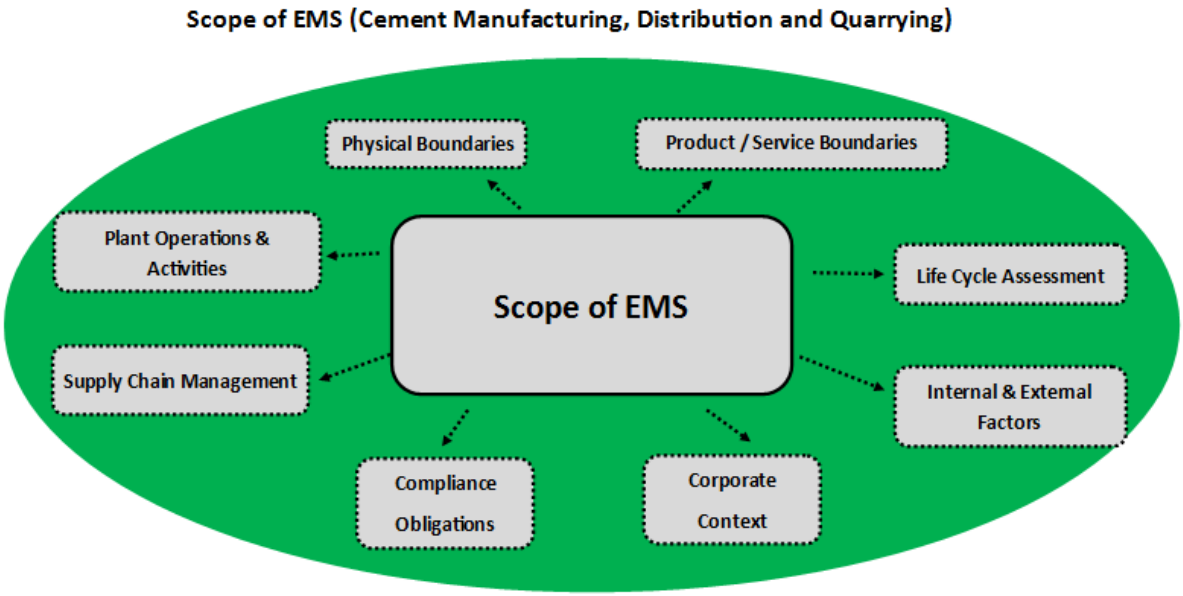
		corporate governance. • Communication with local stakeholders. • On-going improvement.	main environmental enforcement body	
6	Meath County Council	• High standard of environmental compliance and corporate governance. • Communication with local stakeholders. • On-going improvement	• High level of significance as MCC are the main authority overseeing initial planning consent.	• MCC would be considered a compliance obligation.
7	Repak	• Prompt and concise reporting • Timely payment of fees	• High level of importance in relation to packaging waste compliance as Repak are the main regulatory body in this respect.	• MCC would be considered a compliance obligation.
8	Customers/End users	• High quality, • Competitive price, • Open communication	• Would have a medium significance mainly in relation to	• Customers / End Users not considered a

		• Flexibility • Prompt delivery.	the requirement to have an accredited Environmental Management System.	compliance obligation.
9	Suppliers	• Ethical business practises • Good communication • Prompt payment	• Would have a medium significance mainly in relation to the requirement to have an accredited Environmental Management System.	• Suppliers not considered a compliance obligation.
10	Competitors	• To collaborate and work in unison on issues with current or future potential to impact the industry as a whole.	• Medium significance in relation to environmental performance. Priority for each individual industry - as competitor to a degree can reflect mainly due the EMS	• Competitors would not be considered a compliance obligation.
11	Visitors	• Clean environment, • Receptive and informative staff. • Access to information	• Medium stakeholders in relation to the EMS	• Visitors would not be considered a compliance obligation.

12	Media	• High standard of environmental compliance and corporate governance. • Access to information. • Point of contact	• Medium stakeholders in relation to the EMS	• Media would not be considered a compliance obligation.
13	Shareholders	• Financial return on their investment in the Group • High standard of corporate governance (ethical behaviour), • Environmental protection • Positive engagement with local stakeholders	• High level of importance as poor environmental performance can directly impact on reputation of the company and in gaining and retaining business • Regulators and local neighbours can also heavily influence plant governance and operations.	• Compliance obligations are definitely a factor for meeting the needs of Shareholders

4.3 Determining the Scope of the Environmental Management System

The scope of the Environmental Management System will take into account the boundaries of the operation in terms of physical site, site activities, raw material and products. The context and compliance obligations of the site will also be considered.



General Scope:

- The scope of certification is defined as 'the production and distribution of bulk and bagged cement and associated activites.

Physical Boundary:

- The physical boundary of Breedon Cement is very important with regards to the Environmental Management System as this physical boundary defines the operations licensed under the Industrial Emissions (IE) license granted by the Environmental Protection Agency. The IE license for Breedon Cement incorporates both the manufacturing facility/ancillary operations and all quarry operations.

Site Activities:

- All manufacturing, quarrying and ancillary activities are an essential part of the Environmental Management System and impact on both the company's environmental compliance and relevant stakeholder obligations.
- The main stages of the cement manufacturing process involves the raw material preparation / crushing, the blending of the raw material, the raw meal milling and mixing, the kiln process, the clinker cooling and handling, the clinker grinding and the storage and handling of cement. In terms of the fossil and fuel usage, Breedon utilise diesel oil, coal, meat and bone meal, solid recovered fuel and liquid recovered fuel.
- The extraction of the limestone and shale rock involves the initial stripping of topsoil, drilling of blast holes, blasting and rock transportation to the rock crusher. Further rock breaking prior to the crushing process may be required.
- The ancillary activities primarily involve the maintenance and upkeep of fixed and mobile plant.

- The environmental aspects section of the EMS, reviews all associated environmental 'risks', ranks them in terms of significance and identifies measures to deal with any potential issues.

Corporate Context:

- The Lagan Group was founded in 1960, on the outskirts of Belfast. Today, more than half a century later, the Group has been acquired by the largest independent construction materials group in the UK and Ireland and is a market leading construction business with operations across the world. The Breedon group consists of Breedon Asphalt Group Ltd, Breedon Bitumen, Breedon Homes, Breedon Products, Welsh Slate and Whitemountain.
- Breedon Cement manufactures various types of bulk and bagged cement in an ultra-modern production facility in Kinnegad, County Westmeath. The company is also licensed to extract sand from Lough Neagh and operates three sand barges with a capacity of 500 tonnes. Our tile production plant produces concrete roof tiles and ridge tiles in a variety of profiles and colours. Breedon Products also manufactures a diverse range of clay bricks in the only factory of its kind in Ireland. There are also a number of readymix plants, quarries and other facilities within the Breedon portfolio of companies.

Supply Chain Management:

- Through the BES 6001 Responsible Sourcing of Construction Products certification, Breedon Cement implements a high level of scrutiny on its supply chain. This supply chain encompasses primary raw material used in the manufacture of cement. As a part of this system, Breedon Cement review their suppliers in terms of their environmental responsibilities, health and safety practices and quality control practices. (QESH). Breedon Cement has achieved an 'excellent' rating for the BES 6001 Responsible Sourcing of Construction Products accreditation.
- These QESH standards are verified through periodic first- and second-party audits of the suppliers of the raw materials and are available in the BES 6001 section of the Environmental Management manual.
- Breedon Cement has also developed a 'Responsible Sourcing Policy' which outlines the companies community & corporate responsibilities and it's environmental stewardship practices.
- All new raw material suppliers are assesses through a 'Supplier Evaluation' procedure actioned through the purchasing and quality control departments at Breedon Cement.

Life Cycle Assessment:

- Breedon Cement has adopted a Life Cycle Assessment (LCA) approach, in conjunction with the BES 6001 Responsible Sourcing certification, to review the manufacture of its cement product from cradle to grave.
- For the initial stage of the LCA process, it was critical to define the scope of the LCA to ensure each environmental aspect of the product was addressed over its lifespan. In summary, this encompassed four main components, as per the diagram below.
- For each of these components, metrics were developed through the Environmental Management Programme (EMP) to monitor the Life Cycle impacts under eight specific objectives. Further details on these objectives and targets are available in the EMP section of the Environmental Management System.

- The EMP is regularly reviewed, updated at least annually and final results from the EMP objectives for the LCA are publically reported in the Annual Environmental Report, available on the EPA website.
- In addition to the EMP and BES 6001, Breedon Cement are shortly to finalize our environmental product declaration (EPD) for cement produced at the Kinnegad Cement works. The EPD will give further information to our stakeholders on the environmental and sustainability criteria of the manufactured product, summarized in the following scope:

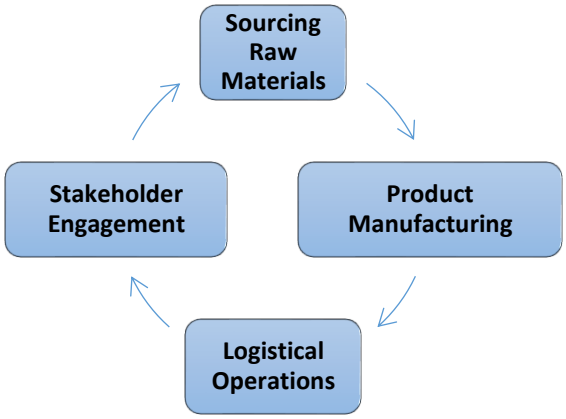


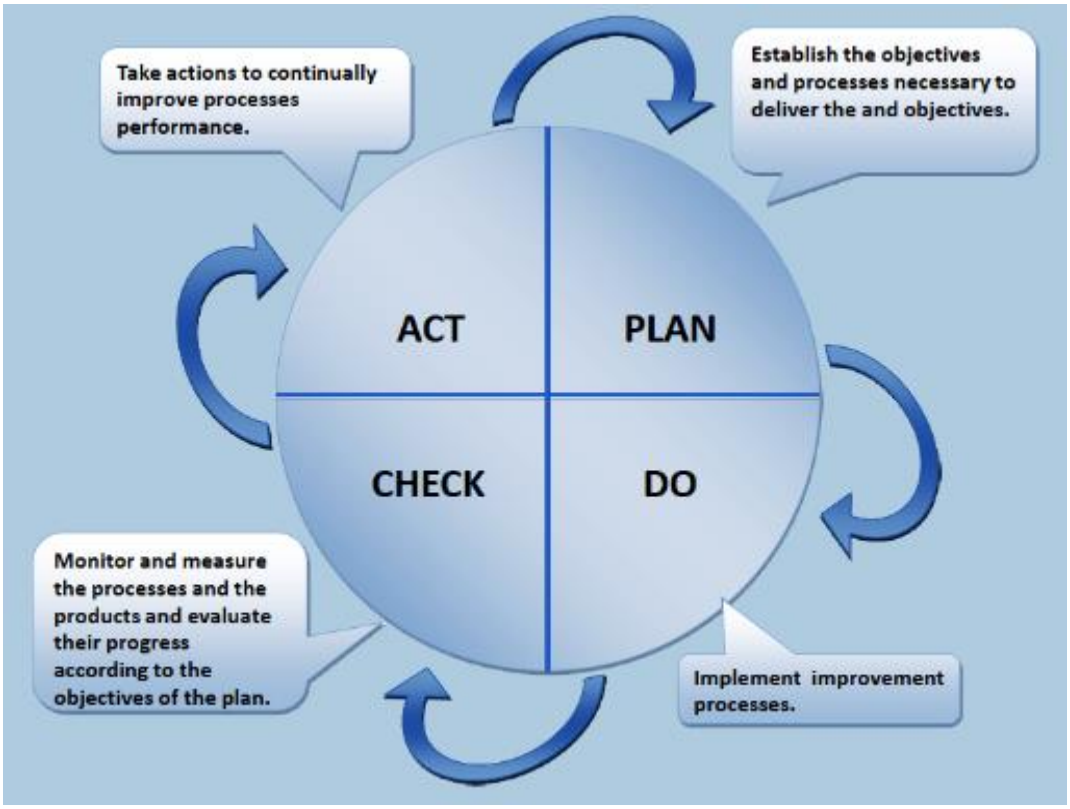
Figure 1: Scope of Breedon Cement LCA

Products/Services:

- The main product/service is the manufacture and supply of cement. The manufacture of cement with regards to environmental management is encompassed within the IE License , ISO14001 and BES 6001 standards. The main focus in relation to the physical supply of cement (bagged) is accountability for waste packaging. Breedon Cement complies with all relevant waste packaging regulations through membership of Repak.

4.4 Environmental Management System

The Breedon Cement environmental management system follows the principle of the four-step management model of Plan – Do – Check – Act. This model helps to ensure on-going development, continuous improvement and ultimate control of the environmental management system.



The benefits of an environmental management system and in particular the ISO 14001 certification are essential for a business in terms of increased stakeholder confidence, greater employee involvement and participation, a greater focus on current and future management issues and overall a greater competitive advantage.

A working environmental management system provides a business with an effective 'roadmap' to ensure continual success and improvement. A core part of the management system is to ensure that all relevant processes are both in place and achieving the required outcomes. It is important to ensure that all relevant and interested parties are taken into account and that the management system operates effectively within and throughout the relevant departments within the business.

The man processes / mechanisms utilized by the environmental department to maintain, review and continual improve the environmental management system are summarized in the table below.

Table 4 – Environmental Processes (Maintain, Review, Continual Improvement)

Mechanism	Structure	Outcome	Continuous Improvement
Site Housekeeping Audit	Quarterly site housekeeping audit undertaken by the Environmental Officer and closed out by the respective responsible departments.	Informs management and employees of current issues on site.	Allows management to focus on issues and / or areas of concern.
Site Departmental Audit	Bi-annual audits carried out by the Environmental Officer of each department manager / line manager in relation to specific environmental responsibilities of that department.	Highlights to the respective department management the current environmental issues / concerns within their department.	Allows for department management / line management to focus on issues and / or areas of concern.
Environmental Management Systems Audit	Annual audit of the environmental systems at Breedon Cement undertaken by the Environmental Group Manager or other nominated Breedon colleague for the Environmental Officer.	Highlights any gaps or issues with the management system.	Allows the Environmental Officer to put in place applicable suggestions and improvements.
Environmental Management Systems and Licence Review	On-going updating and review of the environmental management system and IE Licence by the Environmental Officer.	Highlights any gaps or issues with the management system and IE Licence.	Allows the Environmental Officer to put in place applicable suggestions and improvements.
Environmental Objectives and Targets	The identification of areas for continuous improvement through site/system knowledge and/or 'licensed' requirements.	Directly allows for structured improvements or as a minimum a review of site identified site concerns / systems.	Allows management to review identified areas and/or improvements put in place.
Environmental Training	Tailored Environmental Inductions, Specific Toolbox Talks, Newsletter publications	Engages and creates awareness with employees on their environmental responsibilities, creates awareness	Allows regular review of communications and formal feedback survey requested following each

		about new environmental initiatives and updates from the plant	environmental induction
Environmental Communications	See Section 5.1 ‘Communication’.		
Assignment of Environmental Responsibilities.	See Section 5.1 ‘Communication’.		

5. Leadership

5.1 Leadership and Commitment:

Environmental resource management is defined as ***'the management of the interaction and impact of human societies on the environment'***. In practical terms at Breedon Cement environmental management is about meeting the needs of the business while protecting the integrity of the environment, natural resources and community. The foundation of environmental management at Breedon is built upon the commitment of both the site management team and general workforce. The first step is the recognition that environmental compliance and due diligence are not only a legal obligation but a corporate responsibility regardless of legislative or enforcement bodies. One of the main aspects of good leadership is good communication. To ensure that the environmental management system is aligned with on-going business processes, communication on environmental issues occurs at varying frequencies and at varying levels to ensure the important issues are addressed in an effective and timely manner.

Communication:

***Table 5 – main forms of structured internal and external communications*.**

Communication Format	Frequency	Internal / External	Participants	Purpose	Effectiveness
Virtual platforms or Face to Face meetings with >2m social distancing/face masks	**Daily**	**Internal**	**Level 1: Interdepartmental**	**To discuss and resolve any environmental issues within the department.**	**Current format considered effective.**
Virtual platforms	**Daily**	**Internal**	**Level 2: Line Manager / Supervisor Level**	**To discuss and resolve any environmental issues within at Level 2 that could not be solved at Level 1.**	**Current format considered effective.**
Virtual platforms	**Daily**	**Internal**	**Level 3: Senior Manager & Plant Manager Level.**	**To discuss and resolve any environmental issues within at Level 3 that could**	**Current format considered effective.**

				not be solved at Level 1 or 2.	
Virtual platforms or Face to Face meetings with >2m social distancing/face masks	Weekly	Internal	Environmental Officer, Environmental Graduate and Environmental Group Manager	To review performance, discuss issues and plan future works.	Current format considered effective.
Virtual platforms or Face to Face meetings with >2m social distancing/face masks	Weekly	Internal	Environmental Group Manager and General Manager	To review performance, discuss issues and plan future works.	Current format considered effective.
Written Report	Weekly	Internal	Environmental Officer, Env Graduate to Environmental Group Manager	To review performance, discuss issues and plan future works	Current format considered effective
Virtual platforms or Face to Face meetings with >2m social distancing/face masks	Monthly	Internal	Environmental Group Manager and General Manager	To review performance, discuss issues and plan future works.	Current format considered effective.
Written Report	Monthly	Internal	Environmental Group Manager to General Manager and then to Breedon Board.	To summarise all environmental outstanding issues across the group.	Current format considered effective

Virtual platform	**Quarterly**	**Internal**	**Senior Management Team, Plant Manager and CEO.**	**To review the environmental status and issues over the last quarter.**	**Current format considered effective**
Newsletter	**Bi-annual**	**External**	**Local Stakeholders**	**To update local stakeholders on plant news.**	**Current format considered effective**
Virtual platform	**Annual**	**Internal**	**Senior Management Team**	**To review the environmental performance over the past year and plan for the coming year as per requirements of the ISO14001 standard.**	**Current format considered effective**
Written Report	**Annual**	**External**	**Environmental Protection Agency**	**Summary of environmental performance for the previous year. Report placed on EPA website for public viewing.**	**Compliant with requirements of Aarhus convention and an effective platform**

Environmental Resources:

The table below summarizes Breedon Cements main structures used to ensure adequate resourcing of the environmental department.

Table 6 – environmental resources

Structures	Frequency	Participants	Purpose	Effectiveness
Budget	Annual costing and monthly review.	Environmental Group manager (lead) Environmental Officer Environmental Graduate Plant Manager	To ensure that all environmental services and consumables for the coming year are adequately budgeted for.	The monthly review of the budget allows an in-depth tracking of spend throughout the year and can influence subsequent budget requirements.
Performance Development Interview	Annually	Plant Manager with Environmental Group Manager And Environmental Group Manager with Environmental Officer And Environmental Group Manager with Environmental Graduate.	To review necessity for further equipment and/or training.	The PDI is an effective means of reviewing potential issues and identifying potential additional training / education.

Leadership and Continual Improvement:

One area that highlights the success of an organizations leadership is the level of and commitment to continual improvement. Continual improvement is essential across a wide spectrum of areas and encompasses both individual and collective practices and systems. One of the main foundations of continual improvement is good communication throughout an organization. As per the 'Communication' table above, positive communication between stakeholders is achieved on different levels through varying means. This high level of communication allows for the accurate dissemination of information, thereby keeping all parties updated with respect to concerns, potential issues and viable solutions.

The area that clearly demonstrates the on-going leadership and commitment at Breedon cement is the continued drive in relation to sustainable development. It is Breedon Cement's long term aim to become one of the most environmentally sustainable cement plants in Europe. The drive towards a fossil free future was commenced in 2006 with the introduction of Meat & Bone Meal as a part alternative to coal. This is known as co-processing. This investigation into and use of alternative sustainable fuels has continued over the years and has seen the introduction of Solid Recovered and Liquid Recovered fuels. All initiatives have full planning consents and licensing and stakeholders have been kept up-to-date. This sustainability drive encapsulates Breedon Cements leadership and drive in terms of business needs and environmental resource management

5.2 Environmental Policy

Breedon Cement recognises its responsibility to protect the environment and issues this policy as a statement of the commitment of not only Breedon Cement management but also that of the board of Breedon Group of which Breedon Cement is a member.

To achieve our environmental goals, Breedon Cement is committed to:

- Carry out all activities in a manner that prevents pollution and minimises potential environmental nuisance.
- To be aware of the organisation's context with respect to its internal & external factors and needs and expectations of interested parties.
- Maximise the use of 'greener' fuels and lower carbon raw materials to significantly reduce our carbon footprint as part of our Environmental Strategy.
- Demonstrate a high level of leadership of the environmental management system through responsibility, commitment and communication.
- Operate an environmental management system certified to the international standard ISO 14001.
- Continual improvement through internal auditing and achieving environmental targets and objectives.
- Comply with all applicable legislation, regulations and industry based best practises.
- Promote improvements in energy efficiency and resource usage giving due regard to the principals of sustainable development.
- Observe the hierarchy model for waste management, ensuring waste minimisation through monitoring and control.
- Consider the Life Cycle Assessment approach for minimising the environmental aspect of our process and products as far as reasonably practicable
- Ensure water is used conservatively and implement a programme of groundwater monitoring beyond our statutory requirements.
- To inform and engage with our stakeholders on the need for environmental responsibility as prescribed in our Responsible Sourcing Policy.
- To operate a Good Neighbours Policy.
- Protect, enhance and encourage the development of native ecology ecosystems onsite, through a Biodiversity Action Plan.

Breedon Cement is committed to a continual improvement of its environmental performance and this policy reflects Breedon Cements' commitment to the environment.

Declan Carr

Business Director

March 2022

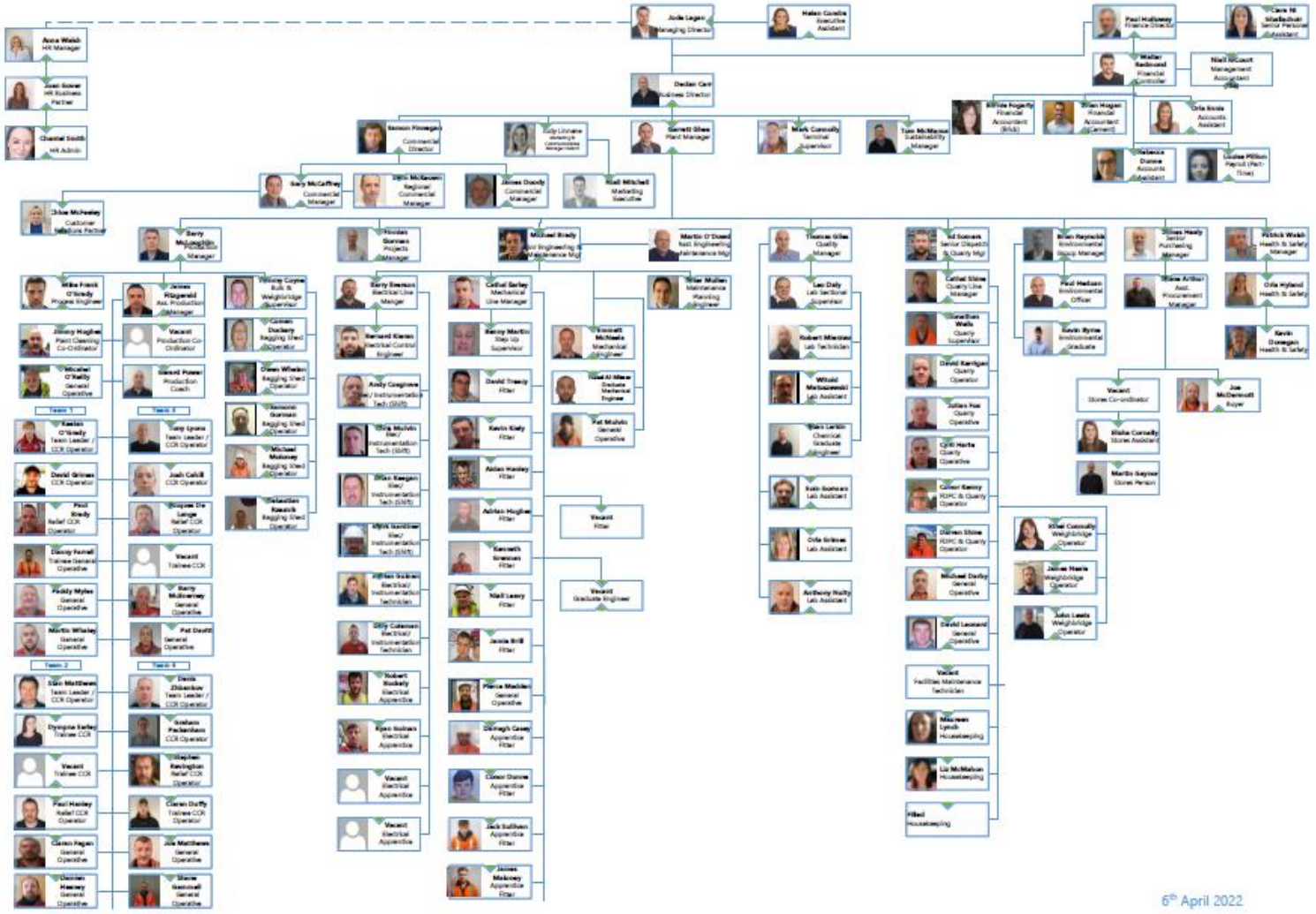
5.3 Organisational roles, responsibilities and authorities:

Table 7 – responsibilities in relation to environmental issues

Personnel	Main Responsibility
General Manager	Overall responsibility for ensuring that Breedon Cement complies with all environmental responsibilities, is resourced at every level to continue its high standard of compliance and development as an environmentally responsible business. Senior manager and driver over the environmental department.
Environmental Group Manager	Responsibility to directly liaise with the General Manager. Direct manager for the environmental department in terms of compliance and continual improvement. Works directly with the General Manager and Environmental Officer.
Environmental Officer	Day to day compliance of the Industrial Emissions Licence, neighbour communication and upkeep and continual improvement of all environmental accreditations. Responsibility to directly liaise with the Environmental Manager.
Environmental Graduate	Day to day compliance of the Industrial Emissions Licence, neighbour communication and upkeep and continual improvement of all environmental accreditations. Responsibility to directly liaise with the Environmental Manager and the Environmental Officer
Quarry Senior Manager	Responsible for all quarrying activities and site cleaning / upkeep throughout the site.
Maintenance Senior Manager	Responsible for maintenance of all on-line monitoring equipment as required under licence conditions and the upkeep of the ISO 50001 Environmental Management System. Responsible for the maintenance of all abatement equipment and proper use of oils/greases on site.
Production Senior Manager	Responsible for ensuring that the kiln and associated plant and works are carried out in a manner that complies with the IE licence and does not affect local stakeholders.

Purchasing Senior Manager	Responsible of liaising with waste management companies when required from the Environmental department and ensures all new liquid chemicals sourced for site have the appropriate MSDS supplied also.
Financial Controller	To compile and reconcile all fuels, alternative fuels, raw materials and products for carbon emissions auditing purposes. Also compile product tonnages for Repak compliance.
Breedon Group CEO and Board of Directors	Responsibility to ensure that the Plant Manager is provided with all necessary resources to ensure the on-going environmental compliance and improvements at the plant.
General Workforce	All site personnel, including contractor, have a responsibility to ensure that their work, the work of their colleagues or plant operations do not adversely impact on the environment or local stakeholders. Each employee has a responsibility to report an environmental issue of significance.

5.3 Organizational Roles, Responsibilities and Authorities:



6. Planning

6.1 Actions To Address Risks & Opportunities:

6.1.1 General:

The processes established to plan and implement the environmental management system take into account the context of the organization, the requirements of interested parties and the general scope of the management system. These processes and procedures include areas relating to environmental compliance, training & awareness, communication with local stakeholders and continued improvement. The continued improvement will be achieved through on-going audits, document reviews, input from all stakeholders, review meetings and documented through set Environmental Strategies and Objectives and Targets. In terms of environmental risks to the physical environment, both on or off site, the main processes established to identify risks a will be the Environmental Aspects. Together with the environmental aspects, the main tools used to ensure environmental rigor and on-going improvements in terms of risk and opportunities are the following:

- Aspects & Risk Assessment
- Compliance Obligations
- Objectives & Targets
- Operational Procedures (Section 8)
- Emergency Preparedness and Response Plan (Section 8)
- Environmental Accident Prevention Plan (Section 8)
- House Keeping and System Audits (Section 9)

6.1.2 Aspects & Risk Assessment

Breedon Cement have reviewed the activities, products and services of its business that interact with the environment, with the aim of identifying any potential risk to the environment and putting suitable control measures in place. When determining the environmental aspects Breedon Cement took the following into account:

- all site areas including main plant, quarries and ancillary buildings/infrastructure.
- change, including planned or new developments, and new or modified activities, products and services
- abnormal conditions and reasonably foreseeable emergency situations.

The review process to evaluate the environmental aspects, impacts and associated control measures is based on the Environmental Protection *Agency's 'Guidance on Environmental Liability Risk Assessment, Residual Management Plans and Financial Provision*' and Breedon Cement's resultant Environmental Liabilities Risk Assessment Plan.

The main steps involved in this are as follows:

- Identification of the aspects that present a plausible potential environmental risk.
- Classification of the aspects according to likelihood and consequence (impact).
- Scoring of the aspects based on their classifications.

- The analysis and evaluation of any potential issues.

Risk Identification:

The aspects posing a potential risk were initially identified and compiled by the environmental manager and an external consultant on risk management (see table below), and subsequently updated by Breedon's environmental officer.

Table 8 – risks associated with environmental aspects

Risk No.	Environmental Aspects	Potential Risk
1	Fuel Oil Storage	Fuel spillage during tanker unloading/delivery operation
2		Loss from bulk storage tanks/pipelines
3		Loss from underground pipeline
4	LRF Storage	Spillage during tanker unloading/delivery operation
5		Loss from bulk storage tanks/pipelines
6	Main Production Area	Process explosion – discharge to air & ground
7		Spillage from production process
8	Weather	Heavy rain / flooding onsite causing uncontrolled discharge
9	Air Emissions Abatement	Failure of abatement and uncontrolled emission to air
10	Drainage Network	Excessive loss of contaminants to surface water network
11		Failure of underground drainage network and loss of water to ground and groundwater
12	Fire in Production Area	Emissions to air, firewater discharge to surface water
13	Traffic	Loss to environment due to incidents involving site vehicles
14	Waste Management	Incorrect disposal of hazardous waste
15	Quarry Blasting	Damage to near-by private residences
16	Monitoring and Control Systems	Failure of system resulting in uncontrolled emission to air, ground, groundwater or surface water
17	SRF Storage	Fire in SRF storage area
18	Pandemic and lockdown	Unable to complete required environmental monitoring and management due to public health guidance restrictions.

Risk Classification:

In order to assess the risks of the identified aspects, 'Risk Classification Tables' were used. These tables assess the likelihood of the event occurring and the consequence or magnitude of the risk. These tables allow for the suitable assessing of each plausible identified aspect and for the allocation of appropriate management measures. The Risk Likelihood and Risk Consequence tables are as follows:

Table 9 – Risk Classification Table 'Likelihood'

Rating	Likelihood	
	Category	**Description**
1	Very Low	Very low chance of hazard occurring
2	Low	Low chance of hazard occurring
3	Medium	Medium chance of hazard occurring
4	High	High chance of hazard occurring
5	Very High	Very high chance of hazard occurring

Table 10 - Risk Classification Table 'Consequence'

Rating	Consequence	
	Category	**Description**
1	Trivial	No impact or negligible change to environment
2	Minor	Minor impact / localised or nuisance
3	Moderate	Moderate impact to environment
4	Major	Severe impact to environment
5	Massive	Massive impact to a large area, irreversible in medium term

Risk Scoring and Evaluation:

A risk score is then calculated for each aspect risk by multiplying the likelihood rating and the consequence rating. This system allows the risks to be ranked according to risk score and compared accordingly. The higher the score means the greater the risk. All the major risks identified at the Breedon Cement have been expanded and rearranged to include the risk scores and rank the risks in order of risk score. Each risk has been evaluated in terms of potential risk, environmental effect, likelihood of occurring and the consequence of occurring.

Table 11 - Risk Scoring and Evaluation

Risk No.	Process	Potential Risk	Environmental Effect	Likelihood Rating	Basis of Likelihood	Consequence Rating	Basis of Consequence	Risk Score
1	Fuel Oil Storage	Fuel spillage during tanker unloading/delivery operations	Contamination of surface water drainage network or ground	2	Delivery is supervised at all times. Spill SOP in place at site. Oil tanks are fully bunded. Oil interceptor on surface water drainage line. No historical incidents to date	2	Limited tanker volume. Delivery areas are all hard-surfaced. Interceptors in place for all surface water drainage. Discharge from sumps can be blocked. Hazardous and persistent material.	4
2	Fuel Oil Storage	Loss from bulk storage tanks/pipelines	Contamination of surface water and ground	2	Tanks are bunded or double-skinned and alarmed. All bunds integrity tested every three years. Bunds visually inspected regularly. No historical incidents to date.	3	All main yard is fully hard-surfaced. Site is always supervised so spillage would not go unnoticed for long. Discharge from sumps can be blocked. Potential significant volume loss. Hazardous and persistent material	6
3	Fuel Oil Storage	Loss from underground pipeline	Contamination of soil and groundwater	2	All pipelines are integrity tested every three years. Oil usage recorded on a monthly basis. Tanks dipped twice per week. No historical incidents to date.	4	Underground leak could go undetected until tank was empty causing pollution to soil & groundwater. Hazardous and persistent material	8

Risk Analysis and Evaluation (continued)

Risk No.	Process	Potential Risk	Environmental Effect	Likelihood Rating	Basis of Likelihood	Consequence Rating	Basis of Consequence	Risk Score
4	LRF (Liquid Recovered Fuel) Storage	LRF spillage during tanker unloading/delivery operations	Contamination of surface water drainage network or ground	2	Delivery is supervised at all times. Spill SOP in place at site. LRF tank is fully bunded. High level alarm in place. Drainage sump in place at delivery point. No historical incidents to date	2	Limited tanker volume. Delivery areas are all hard-surfaced. Sump in place for potential spillage. Discharge from main sumps can be blocked	4
5	LRF (Liquid Recovered Fuel) Storage	LRF loss from bulk storage tanks/pipelines	Contamination of surface water drainage network or ground	2	Tanks are fully bunded. All bunds integrity tested every three years. Bunds and tanks visually inspected regularly. No historical incidents to date.	2	All main yard is fully hard-surfaced. Site is always supervised so spillage would not go unnoticed for long. Discharge from sumps can be blocked. Potential significant volume loss.	4
6	Main Production Area	Explosion	Release of pollutants to air, ground and waters	2	High level monitoring controls in place, including, CCTV, preventative maintenance programmes, warning alarm systems etc. No incidents to date	3	Explosion would result in uncontrolled release to air. Unlikely if surface water would be impacted due to controls. Main costs associated with clean-up and disposal.	6

Risk Analysis and Evaluation (continued)

Risk No.	Process	Potential Risk	Environmental Effect	Likelihood Rating	Basis of Likelihood	Consequence Rating	Basis of Consequence	Risk Score
7	Main Production Area	Material Spillage	Air contamination – dust or odour nuisance	2	Good management controls in place and good response procedures.	2	Not likely to significantly impact offsite due to distance and potential liability would be low.	4
8	Weather	Heavy rain / flooding onsite causing uncontrolled discharge	Contamination of surface water	2	Significant SW management system in place with sumps, lagoons, cut-off valves etc. Heavier rainfall episodes in recent years.	2	Likely contaminant is increased suspended solids. Non-hazardous and not persistent. Short term occurrence.	4
9	Air Emissions Abatement	Failure of abatement and uncontrolled discharge to air	Air Pollution	3	A number of dust emissions above ELV historically. Advanced abatement system in place. Continuous emissions monitor in place. Elevated stack providing effective dispersion.	1	Non-hazardous and not persistent. Short term occurrence. Unlikely for a large volume to be emitted above an ELV. Maximum dispersion ensure with 125m main emission stack	3
10	Drainage Network	Excessive loss of contaminants to surface water network	Contamination of surface water	2	Interceptors, sumps with controls, settlement pond and lagoon in place.	1	Likely contaminant would be non-hazardous and not persistent. Short term occurrence.	2

Risk Analysis and Evaluation (continued)

Risk No.	Process	Potential Risk	Environmental Effect	Likelihood Rating	Basis of Likelihood	Consequence Rating	Basis of Consequence	Risk Score
11	Drainage Network	Failure of underground drainage network resulting in leak to ground /groundwater	Soil and groundwater contamination	2	New system build with site in 2001. Foul sewerage tested/inspected every three years. No incidents to date.	2	Non-hazardous and not persistent materials. Possible soil remediation and repair of drains	4
12	Fire in Production Area	Emissions to air, firewater discharged to surface water	Air pollution & contamination of surface water & soil	2	Fire warning and fire suppression systems in place. CCTV monitoring of risk areas. Fire prevention and risk management practices in place	4	Potential large fire with significant fire control and associated clean-up costs. Emergency response procedures in place and site specific fire training carried out with relevant personnel.	8
13	Traffic	Loss to environment due to incidents involving site vehicles	Contamination of surface water, soil and groundwater	2	Defined traffic routes with speed restrictions in place	3	Potential loss of hazardous and persistent material to soil, surface water and groundwater. Limited volumes of materials in transit. All routes are hard-surfaced.	6
14	Waste Management	Incorrect Disposal of hazardous waste	Potential surface water, groundwater or soil contamination	2	Good procedures in place for waste management. Dedicated segregated waste storage facilities.	2	Very small amounts of hazardous waste disposed off from site.	4

Risk Analysis and Evaluation (continued)

Risk No.	Process	Potential Risk	Environmental Effect	Likelihood Rating	Basis of Likelihood	Consequence Rating	Basis of Consequence	Risk Score
15	Quarry Blasting	Damage to nearby residences	Broken windows, cracked walls.	2	Extensive controls (including SOPs) in place for blasting. Screening banks fully surround the quarry boundary. No issues to date	2	Localised impact only. Costs associated with repairs to private residence(s).	4
16	Monitoring and Control Systems	Failure of system resulting in uncontrolled emission	Pollution of air or surface water.	2	Extensive checks on the monitoring and control systems in place. External maintenance and routine calibration of systems. Alarm systems fitted to much of the monitoring systems.	2	Only moderate damage likely due to short exposure time before the failure is noted and rectified.	4
17	SRF (Solid recovered Fuel) Storage	Fire in SRF Storage area could lead to emissions to air, firewater discharged to surface water	Air pollution & contamination of surface water & soil	2	Compliance with SRF Storage Guidelines. Routine checks of stored material	2	Only moderate damage likely due to small quantities stored and storage location.	4
18	Pandemic and lockdown	Risk to human health, continuity of operations and availability of personnel	Ambient dust	2	Due to lack of manpower to dampen stockpiles, risk of ambient dust during dry spells	2	Localised impact only if stockpiles are exposed	4

Risk Scoring and Evaluation (continued)

In order to provide a visual tool to prioritise potential risks, a Risk Matrix was completed (see below). The risks have been colour coded in the matrix to provide a broad indication of the critical nature of each risk. The colour code is as follows:

***Red**:*

These are considered to be high-level risks requiring priority attention. These risks have the potential to be catastrophic and as such should be addressed as soon as possible and be regarded as a top priority.

***Amber**:*

These are medium-level risks requiring action, but are not as critical as a red coded risk.

***Green**:*

These are lowest-level risks and indicate a need for continuing awareness and monitoring on a regular basis. Whilst they are currently low or minor risks, some have the potential to increase to medium or even high-level risks and must therefore be regularly monitored and if cost effective mitigation can be carried out to reduce the risk even further this should be pursued.

Table 12 – risk classification table

Likelihood	V High	5					
	High	4					
	Medium	3	**9**				
	Low	2	**10**	**1,4,5,7,8,11, 14,15,16,17,18**	**2, 6, 13**	**3,12**	
	V Low	1					
			Trivial	Minor	Mode rate	Major	Massive
			1	2	3	4	5
			Consequence				

Risk Treatment

The risk assessment and categorisation phase recommended that Risks 3 and 12 receives mitigation measures or specific management action. The statement of measures is presented in Table 13 below where a set of appropriate and achievable mitigation measures are assigned to each risk, with a risk owner responsible for the on-going management of the risk and a timeframe for implementation of the risk mitigation measure. Mitigation measures are proposed for all risks above the green zone where an obvious improvement is available. The remaining risks that have no mitigation measure proposed are considered to have effective controls currently in place for their management and do not require further management action.

Table 13: Statement of Measures

Risk No	Potential Risk	Risk Score	Mitigation Measures to be taken.	Outcome	Action	Date for Completion	Owner
3	Fuel loss from underground pipelines	8	Increase pipeline integrity assessment to annual frequency. Investigate the possibility of installing a real-time volume measurement on all of the tanks with underground pipelines so usage can be continuously tracked.	Comprehensive pipeline integrity testing last completed Sept 2018, no issues identified. Installation of real-time volume measurement options reviewed with Senior Electrical Manager and technology was cost-prohibitive for the fuel pipelines involved.	Pipeline testing to continue at a three-year frequency. Ongoing biweekly physical checks of oil tanks to be continued.	Testing completed before end of September 2021. Biweekly checks ongoing	Environmental Officer and heavy goods stores personnel
12	Fire in Production Area	8	Emergency Response Plan and associated fire emergency procedures should continue to be reviewed and updated annually and take account of any changes on-site. Staff to continue to undergo routine documented fire training. Review and update firewater risk assessment for LC	Increased fire awareness and faster and better fire response actions	Set up and implement fire awareness/training programme	Fire awareness training programme in place. All employees given fire training January each year, next due Jan 2023.	Health and Safety Manager

Environmental Aspects and Financial Provision:

In terms of financial provision to deal with any potential environmental incident, Breedon Cement is currently reviewing this document in tandem with the Environmental protection Agency. The final cost, once established, will be covered by a Parent Company Guarantee and will be reviewed on an annual basis.

6.1.3 Compliance Obligations:

General:

Compliance obligations for Breedon Cement focus primarily on the:

- **Industrial Emissions Licence,**
- **Greenhouse Gas Emissions Permit**
- **Environmental legislation.**

Each of these compliance obligations are either reviewed on a continuous, daily, weekly, monthly, annual basis and are subject to a series of audits from external certification bodies (SGS, QSRMC, Lucideon CICS) and from authorities such as the Environmental Protection Agency, Meath County Council and Repak. The Breedon Cement environmental management system has been constructed to allow clear visibility of compliance issues and allow on-going improvement.

Industrial Emissions License:

- The Industrial Emissions Directive 2010/75/EU (or IED for short) is a series of major environmental legislative changes aimed at reducing emissions from industrial production processes which account for a large amount of the overall pollution in Ireland and Europe. The IED It replaces seven previously existing directives, including the Waste Incineration Directive 2000/76/EC and Integrated Pollution Prevention and Control Directive 2008/1/EC. The directive should ensure a reduction in harmful industrial emissions through the application of Best Available Techniques and result in significant benefits to both the environment and human health. It has been in force in Ireland since 6 January 2011 and was implemented from 23 April 2013 onwards. In the past the Environmental Protection Agency in Ireland has issued Waste Licences and IPPC Licences for activities which are listed in the Third and Fourth Schedules to the Waste Management Act 1996 (as amended) and the First Schedule to the Environmental Protection Agency Act 1992 (as amended) respectively.
- The Industrial Emissions Directive (2010/75/EU) has introduced a new type of licence that can be granted by the EPA called an Industrial Emissions Licence (IEL). The activities which require this licence are listed in Annex I of the Industrial Emissions Directive.
- The Industrial Emissions Licence is an integrated licence and encompasses all environmental activities within the site boundary. The IEL covers all environmental aspects and the main parts of the licence include:

Condition 1: Scope
Condition 2: Management of the Installation
Condition 3: infrastructure and Operation
Condition 4: Interpretation
Condition 5: Emissions
Condition 6: Control & Monitoring
Condition 7: Resource use and Energy Efficiency
Condition 8: Materials Handling
Condition 9: Accident Prevention and Emergency Response
Condition 10: Decommissioning & Residuals Management
Condition 11: Notifications, Reports and Records
Condition 12: Financial Charges and Provisions

- On-going compliance and improvement of the IEL conditions, which are directly linked to the Environmental Management System, allows the on-going determination of and compliance with all identified aspects.
- In addition, external audits by the Environmental Protection Agency also identify areas of risk and further opportunities for improvement.

Greenhouse Gas Emissions Permit:

- The EU emissions trading system (EU ETS) was launched in 2005 as the world's first international company-level 'cap-and trade' system for reducing emissions of greenhouse gases cost-effectively. The EU ETS is established under Directive 2003/87/EC and amendments. Emissions' trading is a market-based system to reduce the emissions of climate-damaging greenhouse gases. It is based on the principle of a 'Cap and Trade' system: The cap makes sure that CO2 becomes a product and, thus, CO2 is valued at a price, which is determined by the supply and demand at the (trading) market. Once a year, each installation has to surrender enough allowances to cover all its emissions.
- If a company reduces its emissions so that it has more allowances than it needs, it can sell the remaining (not needed) allowances at the market. Alternatively, it has to purchase additional allowances to comply with its surrender obligation. If a company does not fulfil its obligations to surrender allowances in line with their verified emissions / tonnes of CO_2, heavy penalties will apply. In accordance with the Emissions Trading Regulations S.I. 490 of 2012 no person shall carry out an activity listed in Schedule 1 at an installation resulting in emissions specified therein except under and to the extent authorised by a greenhouse gas emissions permit issued by the Environmental Protection Agency pursuant to the Regulations. Cement manufacturing falls under Schedule 1 and therefore Breedon Cement require a Greenhouse Gas Emissions Permit.
- The Greenhouse Gas Permit consists of all the required conditions to comply with the Emissions Trading Regulations and the individual site 'monitoring plan' to achieve compliance. The monitoring plan and general methodology for the calculation of the annual carbon dioxide emissions are externally audited on an annual basis.

- All risks, compliance issues and opportunities for improvement with respect to the monitoring and reporting of CO2 emissions are contained within the Verification Opinion Statement issued by the external certification body. These consist of
    - Uncorrected Misstatements that were not corrected before issuance of the verification report
    - Uncorrected Non-conformities with approved Monitoring Plan
    - Uncorrected Non-compliances with MRR which were identified during verification
    - Recommended Improvements

- Any issues arising from the Verified Opinion Statement require closure by 30th June of the appropriate year.

Environmental Legislation:

Breedon Cement will maintain on site the main legal documents which require compliance namely:

- Planning Documents / Authorisations and associated documents. IED Licences and associated documents.
- Legislation applicable to Breedon Cement will be identified and managed through the IBEC Environmental Legislation Update Service.
- These documents will be updated by the Environmental Manager and issued to the relevant personnel upon receipt of an amendment or new piece of legislation.
- The Environmental Manager will also maintain a register of legislation pertinent to the relevant condition of the IED licence, and will facilitate the company's compliance with licence conditions.
- The environmental manager will review all new legislation and will amend accordingly any change required to the EMS documentation as a result of any change to the legislation.
- Legalisation relation to waste production will be identified by the environmental manager.
- Breedon Cement will endeavour to identify any compliance obligations which may result in risks and opportunities for the organisation.

6.2 Environmental Objectives and planning to achieve them.

6.2.1 Environmental Objectives:

Breedon Cement has established the following environmental objectives for the current year (as listed below in Table 1). The objectives are reviewed on an on-going basis and assessed at the annual review meeting in terms of completion, non-completion or requiring on going assessment. The objectives are established after taking into account the following:

- Compliance conditions required under the Industrial Emissions (IE) licence.
- Relevant environmental aspects of the companies' operations.
- Relevant actions arising from the identified internal and external factors.

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Table 13 – schedule of environmental objectives and targets for 2022

Objective 1	To minimise fugitive dust emissions.
Objective 2	To minimise noise pollution from site.
Objective 3	To prevent and reduce waste going to landfill.
Objective 4	To optimise the thermal energy substitution from alternative fuels.
Objective 5	To identify and implement opportunities for energy efficiency.
Objective 6	To monitor water usage and protect water quality.
Objective 7	To positively engage with local stakeholders.
Objective 8	To minimise the environmental impact from transportation.
Objective 9	Reduction in Total Organic Carbon Emissions
Objective 10	Implement sustainability and biodiversity initiatives

The Environmental Manager / Environmental Officer / Environmental Graduate will be responsible for monitoring and progression of the environmental objectives. The Company will aim at all times to have objectives in place with a view to continually improve environmental performance. External reporting on environmental objectives will be achieved through the Annual Environmental Report.

6.2.2 Planning actions to achieve environmental objectives

Breedon Cement maintains a separate document outlining the planning actions in relation to achieving the environmental objectives. This document outlines:

- Targets to achieve the objective
- Methodology
- Progress
- Evidence
- Responsibility
- Timeframe

The environmental objectives are located at: ***W drive / 0 – Environmental / 01 IEL Documentation / ENV7 Objectives and Targets.***

7. Support

7.1 RESOURCES

The primary resource mechanism for the establishment, implementation, maintenance and continual improvement of the Environmental Management System is through the annual environmental budget allocation. The important aspects of the environmental budget are as follows:

- The budget will provide for the on-going maintenance and improvement of both the Environmental Management System and additional Industrial Emissions Licence and Greenhouse Gas Permit conditions.
- The budget takes into account, but is not limited to, equipment, internal and external resources, staff training and all other financial requirements for the continual improvement of the system;
- At the budgetary planning stage, consideration is given to the scope of environmental works for the forth coming year.
- Expenditure is reviewed on a month by month basis and on a year by year basis to allow for the necessary provisions.
- The Environmental Group Manager (following consultation with the Environmental Officer), will agree on the required budget for the upcoming new calendar year with the Technical Manager.
- It is the responsibility of the Senior Management team for agreeing on the final allocation of resources to the department.
- Additional funds are available for unforeseen requirements.

7.2 COMPETENCE

The successful implementation and continuous improvement of the EMS will primarily be driven by the competence and engagement of the staff with direct responsibility in managing and execution of operations at Breedon Cement. The key points for the competence aspect of these personnel are as follows:

- The key staff tasked with the implementation, maintenance, continual improvement and fulfilment of all environmental compliance obligations are either externally qualified through formal appropriate education, training and work experience or are provided with the required knowledge through internal inductions / training.
- On an ongoing basis, the Environmental Officer, Environmental Group Manager, Technical Manager and Plant Manager identify if there are any additional training requirements or environmental communication warranted for the on-going compliance of the EMS;
- All personnel whose work may create a significant impact upon the environment will have received individualised induction training relevant to the environmental aspects of their roles.
- Records of attendance for this induction training will be maintained by the environmental department. See induction training records)
- Feedback for each environmental induction training session is reviewed by the Environmental Officer to continually improve the content delivered to new employees who join the company.
- Each environmental induction presentation is specifically tailored to address the key environmental responsibilities of the staff for the company, and how they are expected to achieve their responsibilities.

7.3 AWARENESS

The following subsection details how the Company ensures all relevant personnel onsite are aware of the EMS:

- Breedon Cement's Environmental Policy is communicated to employees through updates on the noticeboards around the site.
- The Company has established (and maintains on an ongoing basis) procedures to make its employees and sub-contractors aware of the importance of conformance with the company's Environmental Policy and the Management System.
- Employees and sub-contractors are made aware of the significant environmental aspects, actual and potential, of their work activities prior to engaging in works onsite through their initial induction training.
- Employees are subsequently engaged throughout the year with toolbox talks, site noticeboard updates, interaction with fellow employee's environmental concerns via the Sharepoint reporting system, internal audit reporting, newsletters and website communications. Records of communications are maintained by the Environmental Department.
- The Company ensures that employees and sub-contractors are fully aware of the environmental responsibilities of their roles to achieve conformance with the EMS through the initial communication of procedures and requirements at their environmental induction and regular toolbox talks.
- Where relevant, this will include specific training on emergency preparedness and response requirements and the potential consequences of departure from specified operating procedures.
- All members of staff are made fully aware of the operational procedures and methods used by the Breedon to ensure that the potential for any negative environmental impact of their roles onsite will be minimised.
- The awareness of environmental controls and adherence to environmental procedures amongst staff and sub-contractors are monitored on a routine basis by the line and senior management team at the company.
- If an absence of awareness of a specific protocol is found, then appropriate action is taken, to include re-induction training or specific one to one instructions from the staff supervisor.
- Awareness and communication of environmental issues to all levels of the Breedon Cement management team are detailed in Section 5 'Communications'.
- The outcomes of good environmental performance are communicated regularly by the line and senior management team to the wider workforce. Employees are made aware of the outcomes of their positive contributions to enhance the environmental performance of operations through biannual employee updates, email and noticeboard correspondence.
- Staff engagement and feedback through a 'Be Even Better WIN (What's Important Now)' scheme is also used to reinforce a culture of continuous improvement and to generate awareness amongst peers at the company.

7.4 COMMUNICATION

7.4.1 General

The communication of the main aspects of the EMS, the Environmental Policy and the objectives and targets of the Environmental Management Program is crucial to the overall implementation and continuous improvement of the system. There are a wide number of systems for communicating the EMS, both to internally connected stakeholders and external stakeholders. These are as follows:

7.4.2 Internal Communication

Internal communication systems include, but are not limited to, the following:

1. Internal e-mail system: communicates the majority of internal electronic information and is the main means of communication at a managerial level.
2. Communications to employees/ subcontractors who do not have access to the email network will be through verbal discussions, toolbox talks, electronic noticeboard and screen updates, intranet computer system (The Hub and Sharepoint), issued operational procedures and site signage
3. Internal auditing and structured Root Causing of incidents will also be used as a means of communication both to and from employees.
4. The Environmental Officer will report regularly to line/senior management on environmental issues, any potential licence non-compliance areas and suggestions for environmental improvements onsite.
5. Biannual Environmental Newsletters are used as a tool to communicate environmental developments and, where relevant, Industrial Emissions licence reviews to new and existing staff.
6. All communication methods as per Section 5 'Communications'.

7.4.3 External Communication

External communications are primarily in relation to engaging proactively with the local community, regulatory authorities adjacent businesses and other local stakeholders:

In order of frequency, a summary of the external communication techniques will or can take the following forms (list is not extensive):

- Telephone calls and emails
- Site visits and bilateral meetings
- Breedon Cement website - www.breedongroup.com
- Postal correspondence
- Communications with the Environmental Protection Agency are completed using the EDEN online portal
- Breedon Cement publications such as 'Breedon Cement Newsletters'
- On at least an annual basis, results on the significant environmental aspects of the operations are communicated to the wider public arena through the publication of our Annual Environmental Report

The Environmental Group Manager and Environmental Officer will be responsible for all communications with regulatory authorities and will record all 'significant' communications on file. Communication with the authorities is completed through a number of means: online submissions through EDEN, letter correspondence, e-mail, telephone, and statutory reporting formats. The Environmental Officer will maintain a log of all correspondence with regulatory bodies.

7.5 DOCUMENTED INFORMATION

7.5.1 Environmental Management System Documentation

The documented information for the Breedon Cement EMS consists of, but is not limited to the following:

- Environmental Management Manual which comprises of:
    - Context of the organisation
    - Leadership
    - Planning (aspects)
    - Objectives and Targets
    - Support
    - Communication
    - Documented Information
    - Operations
    - Performance Evaluations
    - Internal Audits
    - Management Review
    - Improvements
- The Environmental Policy that sets out the companies overall goals for the environmental management of operations onsite.
- Environmental Procedures, which are specific sets of instructions issued to personnel whose work can or could have a significant impact on the environment or where absence of instructions might result in a non-conformance or high risk of environmental impact. These written instructions clearly and succinctly provide operational procedures, verification criteria and any corrective activities required in the event of a non-conformance. The work instructions also include procedures relating to the greenhouse gas emissions system and alternative fuel management.
- The manual identifies the main Environmental Aspects of the cement manufacturing operations, and the specific control measures in place to address these aspects. The manual also identifies the relevant stakeholders, internal and external, that could be affected by an adverse occurrence onsite.

The management manual makes reference to additional ‘core’ documents utilised in achieving Breedon Cements compliance obligations. This documentation includes:

- Environmental Legislation (water, air waste, noise, planning)
- Accident Prevention Plan
- Closure Plan and Financial Provisions

These core elements are interfaced with the Company’s initial goals with respect to improving environment performance onsite. Documentation relating to these core elements is referenced in the manual and records are maintained by the Environmental Officer and audited by the Environmental Group Manager. The content of the Environmental Manual is reviewed as required and record of the review history is maintained.

7.5.2 Creating and Updating

All new documentation relation to the Environmental Manual is created using a specific template document to ensure consistency and reproducibility. All new documentation will have the appropriate approvals by authorised Management personnel, prior to being distributed to the wider workforce. Issuing, reviewing and updating documentation shall be completed by electronic means as far as practical, as this facilitates a better mechanism for document control, document revision and recirculation. The review history of EMS documentation is recorded on specific 'Review' section of each document, and version history is also recorded.

7.5.3 Control of documented information

Environmental Department personnel are responsible for controlling and maintaining documents relating to the Environmental Management System. They will ensure that the documents maintained are:

1) Easily located and retrievable;
2) Are made available to the wider workforce as soon as is reasonably practicable after approval;
3) If amended, the amended the original document will be retained for record and historical purposes;
4) Specific environmental records will be maintained for a minimum of three years, unless required to keep them longer for legal reasons;
6) The current versions of relevant documents will be available at all locations where operations essential to the effective functioning of the system are performed;
7) Obsolete documents will be removed promptly from all points of use or otherwise to assure against unintended use.
8) Obsolete documents will be retained for legal and or knowledge preservation purposes and will be suitably identified.

Documentation will be legible, dated (with dates of revision) and readily identifiable. They will be maintained in an orderly manner and will be retained for a period of time as specified in the Industrial Emissions licence or as required for auditing purposes. A document control procedure is also in place concerning the creation and modification of the various types of EMS documentation. Any documents or information held on electronic media will be backed up to a secure server on a routine basis. Breedon Cement's Information Technology department, based in Belfast, has full responsibility to ensure that all electronic data resources are backed up regularly and are accessible as required.

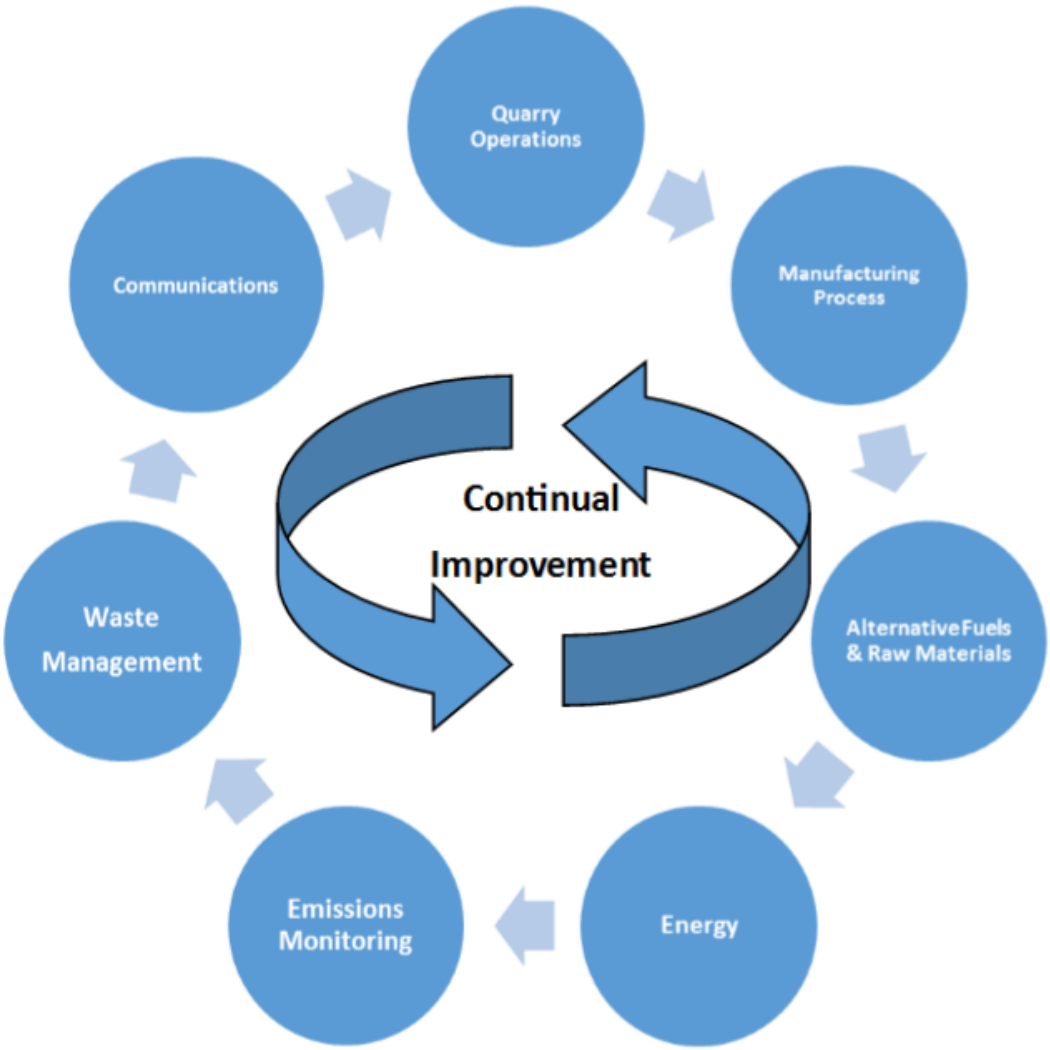
8. Operation

8.1 Operational planning and control

The main processes at Breedon Cement which have an impact on the environment have been considered from a life cycle perspective in terms of operational planning and the input of subsequent control measures. The main controls used at Breedon Cement are 'procedures' to manage the organisations environmental processes. All legal conditions as per Breedon Cement's Industrial Emissions Licence have been complied with. All operational controls adhere to the ethos of continual improvement.

The main environmental operational controls reviewed from Breedon Cement, but not limited to, are as per the Operational Controls Diagram below.

***Operational Controls Diagram*:**



Quarry Operations:

The main environmental measures established in relation to the quarry operations are the control and monitoring of blasting events, noise and dust emissions.

The control procedures relevant to the quarry operations are, but not limited to, the following:

Procedure ID	Procedure Description
ETCP 005	**Quarry Blast Control**
ETCP 003	**Control of Dust – Instruction for water bowser driver**
ETCP 016	**Ownership & Control of Fuel tanker**

Manufacturing Process:

The main environmental measures established in relation to the manufacturing process are the operational controls around IE licence restrictions and abatement control.

Procedure ID	Procedure Description
ETCP 011	**Operating Conditions for the co-incineration of alternative fuels**
ETCP 012	**Bag Filter Integrity Procedure**
ETCP 013	**CEMs Monitoring & Data Management**
ETCP 017	**Standby procedure for Gas Monitoring**

Alternative Fuels & Raw Materials:

The alternative fuel and raw material usage at Breedon Cement is a core part of the sustainability drive at the plant. The operational controls covering alternative fuels and raw materials have also been considered in relation to arrival at the plant, offloading, storage, quality control and usage. The alternative fuels and raw materials, in terms of operational control procedures, can be sub-divided into the following categories, SRF & LRF Fuels , MBM Fuel and Raw Materials

SRF & LRF Fuels:

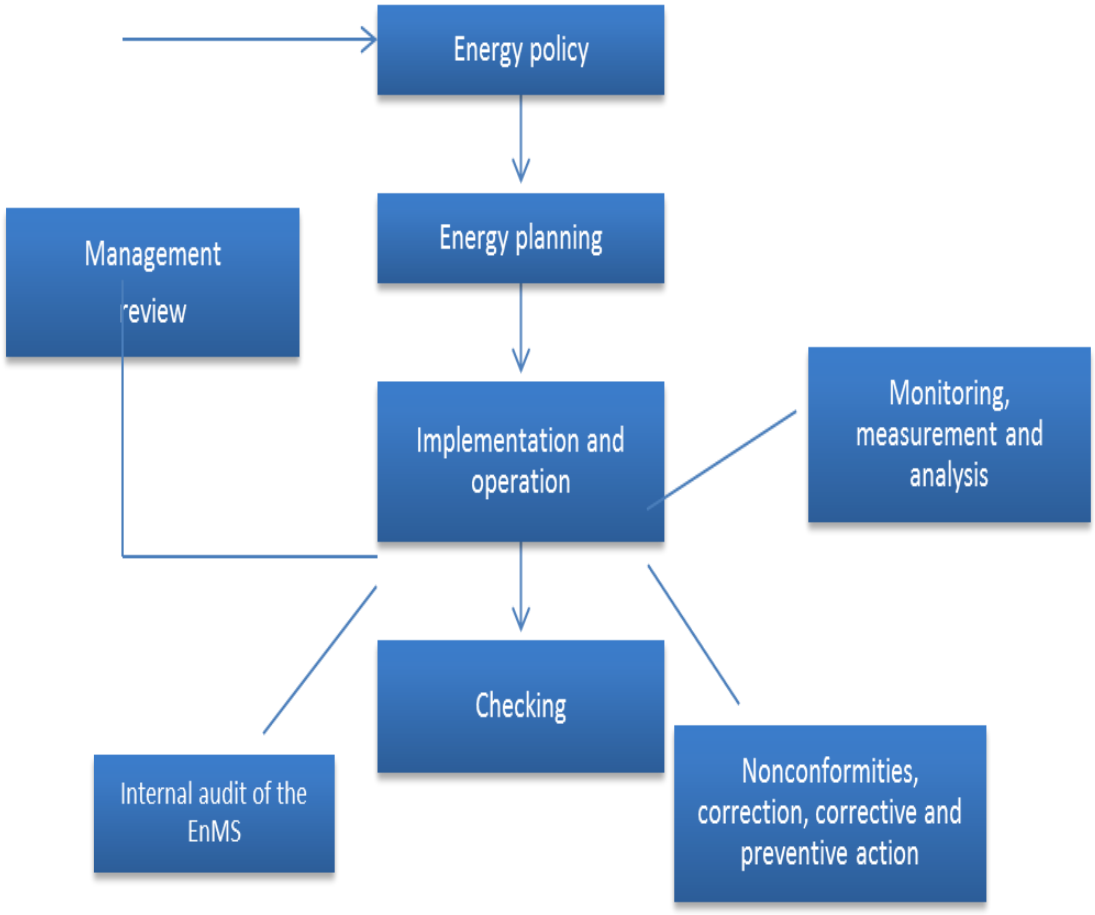
Procedure ID	Procedure Description
ALTF 01	**Acceptance of Alternative Fuels**
ALTF 02	**On-site Inspections**
ALTF 03	**Sampling and Testing of Alternative Fuels**
ALTF 04	**Unloading procedure for Alternative Fuels**
ALTF 05	**Process Conditions for the Combustion of Alternative Fuels**
ALTF 06	**Maintenance and Calibration Procedure**
ALTF 07	**Procedure for completing Trans-frontier Shipment documents**
ALTF 08	**Alternative Fuels Waste Transfer Form**
ALTF 09	**Monitoring of Alternative Fuel Usage**

MBM Fuels:

Procedure ID	Procedure Description
MBM 01	**Acceptance of MBM on-site**
MBM 02	**Tanker to Silo unloading procedure**
MBM 03	**Spillage Procedure for MBM**
MBM 04	**Storage/Disposal of unsuitable MBM**
MBM 05	**Inspection of MBM intake 20mm screen**
MBM 06	**Maintaining correct process conditions for the combustion of MBM.**
MBM 07	**MBM Characterisation Procedure**
MBM 08	**MBM Return Procedure**
MBM 09	**MBM Maintenance and Calibration procedure**

Energy:

Breedon Cement shall controls, measures, monitors and improves electrical energy consumption through the ISO 50001 Energy Management System. The energy management system model is as follows:



As a part of this standard Breedon cement have committed to:

- Establish, document, implement, maintain and improve an Energy Management System accordance with the requirements of this International Standard;
- Define and document the scope and boundaries of its EnMS;
- Achieve continual improvement of its energy performance and of its EnMS.

The ISO 50001 energy system documentation is located at ***W:Drive / 01 Electrical / 01 Energy***

Emissions Monitoring:

Emissions monitoring at Breedon Cement is a major part of the Industrial Emissions monitoring licence. The operational controls covering environmental emissions have been considered in relation to air emissions (point & ambient), water emissions (surface and ground) and noise emissions.

Procedure ID	Procedure Description
ETCP 001	**Water Quality Testing Procedure**
ETCP 002	**Particulate Emission Monitoring of Fugitive Dust**
ETCP 019	**Noise Monitoring and Control**
ETCP 020	**Environmental Equipment – maintenance & calibration**
ETCP 023	**Sampling groundwater Boreholes**

Waste Management:

Waste management at Breedon Cement complies with all legal conditions of the Industrial Emissions Licence. The waste streams can be divided into two broad categories:

- Waste generated on-site
- Waste brought in to site as alternative fuels.

Waste Generated On-site:

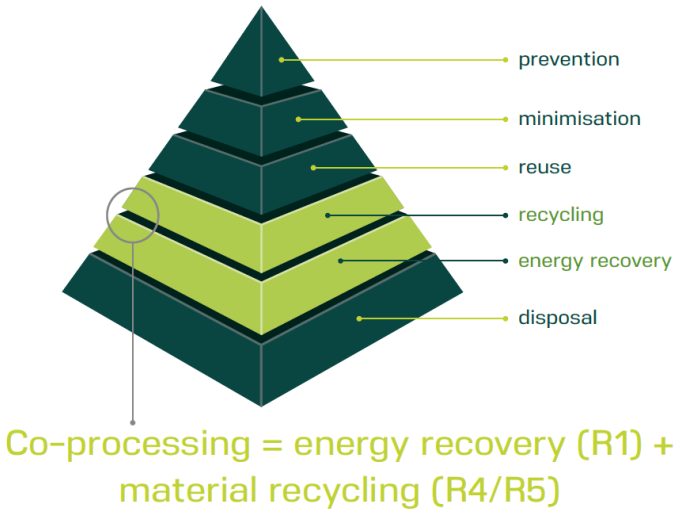
The objective in relation to waste generated on site is to prevent, minimise and reduce where ever possible. Waste generated at Breedon Cement is a mix of both hazardous and non-hazardous. The handling, storage and removal of waste from site will be determined by the waste type and categorisation. All waste from site is recorded and removed by fully licenced companies. The main operational procedures with regards to waste generated on-site is:

Procedure ID	Procedure Description
ETCP 014	**Waste Management Procedure**
ETCP 015	**Bunding and Bund Inspection Procedure**

Waste Imported to Site:

The waste stream imported to site consists primarily of alternative fuels that are used for the co-processing of the clinker product. The use of alternative materials is known as 'co-processing'. **Co-processing** is unique because it overlaps both the **energy recovery** and material **recycling** tiers on the EU waste hierarchy. Energy is recovered and the fuel ashes (recycling) are fully consumed to become part of the cement product.

Waste Hierarchy



The waste streams currently imported as alternative fuels at Breedon Cement consist of Solid Recovered Fuels, Liquid Recovered Fuels and Meat and Bone Meal. The main operational controls covering alternative fuels are as per the above section on 'Alternative Fuels & Raw materials'.

Communications:

All site personnel and subcontractors are made aware of their site responsibilities including any relevant operational control procedures through the following means:

- Toolbox Talks
- Departmental Audits
- Site personnel Inductions
- Subcontractor Inductions

The relevant operational control procedures relating to site communications are:

Procedure ID	Procedure Description
ETCP 008	**Internal Environmental Audit Inspections**
ETCP 009	**Environmental Concerns, Responsibility and Corrective Action**
ETCP 024	**Training, Awareness and Competence**

Continual Improvement:

The operational control procedures are reviewed on a continual basis. The on-going objectives of the Environmental Management System are identified and developed through the main operational controls on-site and this enables continual improvement of the system.

8.2 Emergency Preparedness and Response

In order to prepare for and respond to a potential emergency situation, Breedon Cement have developed and employed a number of key controls. These controls include, but are not limited to, the following:

- Environmental Aspects & Risk Assessment
- Emergency Response Plan
- Environmental Accident Prevention Plan
- Fire Water Retention Plan
- Site Test & Control Procedures

- Environmental Aspects & Risk Assessment:

As per section 6.1.2, Breedon Cement have reviewed the activities, products and services of its business that interact with the environment, with the aim of identifying any potential risk to the environment and putting suitable control measures in place. The 'Environmental Aspects & Risk Assessment' is the tool used to identify risks and manage same.

- Emergency Response Plan:

The Emergency Response Plan (ERP) outlines Breedon Cement's strategy following an environmental emergency occurring onsite. The plan includes both control and response actions for environmental incidents with the potential to occur. This ERP has been prepared in line with the Guidance Note published by the Environmental Protection Agency in

2016, entitled ‘Guidance to Licensees on the Preparation of Accident Prevention Procedures and Emergency Response Procedures’. The Breedon Cement ERP is located at W Drive / 0 – Environmental / 01 IEL Documentation / ENV1 Top Tier Documents / 06 Emergency Response Plan.

- Environmental Accident Prevention Plan :

The Environmental Accident Prevention Plan identifies environmental hazards and risks on site and sets out the necessary measures required to prevent such accidents that may have a potential adverse impact on the environment.

- Fire Water Retention Plan:

This document also describes the firewater containment measures in place, and details the procedures to be followed, in the event of a major accidental spill, or the generation of significant volumes of fire water, which may pose a threat to the aquatic environment. Consultation was sought from Meath County Council Chief Fire Officer Pádraig Ó Longaigh and Meath County Fire & Rescue Services from the Navan Fire Station in completing this plan.

- Site Test & Control Procedures

Breedon Cement maintains and revises a number of operational control procedures that assist in the prevention and minimisation of potential environmental risks on-site. See section 8.1.

In order to prevent and mitigate the environmental impacts of accidents and emergency situations Breedon Cement will maintain the above documents to identify and respond to environmental incidents on site, at each of the two quarries and around all ancillary building on-site. Breedon Cement will review and revise the above documents as necessary and will place special emphasis on such reviews and revisions should an accident or emergency situation actually arise. Where practical or applicable to do so Breedon Cement will periodically test these procedures.

9. Performance Evaluation

9.1 Monitoring, measurement, analysis and evaluation

9.1.1 General

The main scope of monitoring, measurement, analysis and evaluation at Breedon Cement is determined by its Industrial Emissions Licence as issued by the Environmental Protection Agency. The licence contains circa 200 conditions and sub conditions which must be fully compliant at all times. Environmental monitoring encompasses both physical emissions to the environment and also monitoring of infrastructure designed to protect the environment. The monitoring of emissions to the physical environment include those of air, water and noise from both point and nonpoint sources. The Industrial Emissions Licence also specifies the frequency and type of analysis required for each parameter. Another important aspect of the on-going monitoring at Breedon Cement is the area of waste management. As a business that generates on-site waste and co-processes waste as a fuel, a high level of waste management is paramount.

In tandem with the Industrial Emissions Licence, Breedon Cement must also comply with all the conditions contained within its Greenhouse Gas Permit and associated monitoring plan. The purpose of the Greenhouse Gas Permit is to accurately determine the annual carbon dioxide emissions from the Breedon Cement 'clinker manufacturing' process.

Accompanying the above licences, is the continual updating and review of environmental legislation. New legislation is analysed and evaluated with respect to its relevance at Breedon Cement. Any new legislation relevant to Breedon Cement is incorporated as appropriate in the environmental management system.

All inspection, measuring and test equipment used by Breedon Cement will be calibrated and maintained in a manner that will ensure that measurements taken can be verified. Relevant procedures are maintained describing how each item of measuring equipment is calibrated.

The main procedures relevant to monitoring, measurement, analysis and evaluation are the Environmental Testing / Control Procedures, the Equipment Operating Procedure and the Equipment Calibration Procedures, located at *W Drive / ENV2 Procedures*.

9.1.2 Evaluation of Compliance

The frequency of compliance evaluation at Breedon Cement and the resultant assessment of required actions if necessary are based largely upon a combination of the Industrial Emissions Licence as issued by the Environmental Protection Agency and internal compliance procedures. The frequency of compliance evaluation includes, but is not limited to the following:

Document	EMS Section
Industrial Emissions Licence 487-07	Schedule B (Emission Limits) and Schedule C (Control & Monitoring).
Internal Site Housekeeping Audits	See Section 4.4

Internal Site Departmental Audits	See Section 4.4
Internal Environmental Management System Audits	See Section 4.4
Internal Environmental Management Systems & Licence Review	See Section 4.4

All monitoring is undertaken by either on-line continuous emission monitoring systems (CEMs) or by equipment utilised by internal or external personnel. All equipment is fully calibrated and certified. Where required, external personnel also have the required experience and training.

The assessment of improvement actions (if necessary) and knowledge of the current environmental compliance status is assessed through on-going communications and data review. Environmental communications occur at different levels and frequencies within the Breedon Cement organisation. *See Section 5, 5.1, Communication*.

The environmental data review is undertaken using the following reviewing / reporting structures:

System	Function
On-line ECS (Expert Control and Supervision) System	Record on-line main stack emissions and emissions to water.
Environmental Data Management System	Provide an on-going summary of emissions data (on-line and spot) for compliance
Quarterly Emissions Report	Provides a quarterly summary of all on-line air and water emission concentrations
Annual Environmental Report	Provides an annual summary of all relevant emissions and issues.
Annual Emissions Monitoring Report	Provides an annual summary of carbon dioxide emissions.

Retention of Documents:

- The Company has established a procedure (reference ETCP 017) for the identification, maintenance and disposition of environmental records.

- A hardcopy indexed records library is in place in the Environmental Department files and is controlled and maintained by the Environmental Department personnel.

- These records will include all training records and any internal and external audits carried out on the system. All reviews and revisions are available on soft copy in the Environmental folder on the companies W:Drive.

- The records will be legible, identifiable and traceable to the activity, product or operation involved.

- All environmental records, including any on electronic media will be stored and maintained in a manner that they are readily retrievable and protected against damage, deterioration or loss. Their retention time as determined

by the IED Licence is 7 years. The location and storage duration of environmental records are reviewed at least annually.

- All records will maintained as appropriate or as deemed useful to the environmental system in order to demonstrate compliance with ISO 14001.

9.2 Internal Audits:

9.2.1 General

Breedon Cement conducts internal audits on a quarterly, bi-annual and annual basis. The purposes of the audits are to assist in Breedon Cements on-going compliance with all licence conditions and certifications. The audits are undertaken by both the Environmental Officer and Environmental Group Manager.

9.2.2 Internal Audit Programme

Breedon Cement places great emphasis on the importance and need for regular internal auditing of its Environmental Management System and environmental obligations under its Industrial Emissions Licence. To this Breedon Cement have established systems to ensure all internal auditing achieves the following goals:

- To define the audit criteria and scope for each audit
- To select auditors and conduct audits to ensure objectivity and the impartiality of the audit process
- To ensure that the results of the audits are reported to relevant management.

Audit Summary Table:

Audit Type	Audit Criteria	Audit Scope
House-keeping Audit	To identify house-keeping issues on-site with potential for environmental concern and put corrective / preventative measures in place.	The house keeping audit is undertaken by the environmental officer and encompasses the main site, quarries and ancillary buildings
Departmental Audit	To identify environmental issues and concerns within the varying departments at Breedon Cement and implement improvements where necessary.	The departmental audits consist of the environmental officer conducting relevant checks and discussions on environmental compliance the mechanical, electrical, process, purchasing, weighbridge, laboratory, finance and quarry departments.
Environmental Management System Audit	To identify issues or non-conformities within the environmental management system.	The environmental management systems audit is undertaken by the environmental group manager or other suitably qualified Breedon colleague to identify issues with the environmental management system against the ISO 14001 certification.

Audit Procedure:

This procedure applies to internal audits undertaken at Breedon Cement. The aim of the audits is to ensure that the system is systematically reviewed for continuing suitability and effectiveness.

1. The environmental officer shall establish an internal audit schedule to ensure all audit 'types' are conducted as per the required frequencies.

2. Audits will be carried out by the environmental officer and the group environmental manager to ensure that objectivity, impartiality and also a high level of experience are brought to bear. Other qualified auditors, if available will be utilised.

3. Prior to the audit the auditor shall check any areas of outstanding action from any previous audit and add these to the check sheet.

4. Audit findings shall be discussed with the respective managers / personnel in charge of the area. The issues and corrective actions required, together with the target dates for implementation, shall be recorded on the Internal Audit Report form.

5. Progress on the implementation of agreed corrective actions shall be monitored by the environmental officer.

6. On completion of all actions the report shall be filed as part of Environmental Records and for evaluation as part of the management review of the EMS.

Audit Objectivity & Impartiality:

The internal environmental audits are undertaken by both the site environmental officer and the group environmental manager. The environmental officer is the owner of the Breedon Cement site environmental management system and therefore is the most experienced person to undertake both the site housekeeping and the departmental environment audits / reviews. As the environmental officer is the owner of the EMS, the group environmental manager or suitably qualified Breedon colleague, in order to maintain objectivity and impartiality and apply the appropriate experience, undertakes the environmental management systems review.

Upward Reporting:

Results of internal audits will be used to provide information to management as a means of improving the system and ensuring that adequate measures are taken to ensure that audit findings are acted upon in a manner that is effective and designed to prevent reoccurrence where applicable.

9.3 Management Review:

Breedon Cement management will review the environmental management system at least annually. This review will encompass the following:

- The status of actions from previous management reviews.

- Management will review changes in
    - External and internal issues that are relevant to the environmental management system (as outlined in detail in section 4.1.1 and section 4.1.2 in this document);
    - The needs and expectations of interested parties, including compliance obligations. Existing needs and expectations are also reviewed after a reassessment of any changes in section 6.1.2 Aspects & Risk Assessment and subsequent changes;
    - Its significant environmental aspects, which will take into account inputs and outputs (both intended and unintended) of current and past activities, planned and new developments (in normal and abnormal operating conditions). Application of the requirements of A.6.1.2 of the 14001:2015 standard should be assessed prior to every Management Review meeting also;
    - Risks and opportunities to influence environmental aspects of the Operations that is within the control of the Breedon Group.

- The extent to which the environmental objectives have been achieved

- Information on the organisations environmental performance, including trends in
    - Nonconformities and corrective actions
    - Monitoring and measurement results
    - Fulfilment of its compliance obligations
    - Audit results

- Adequacy of resources

- Relevant communication from interested parties, including complaints

- Opportunities for continual improvement

Breedon Cement management will ensure the following actions and conclusions will result from the review meeting

- Conclusions on the continuing suitability, adequacy and effectiveness of the environmental management system.
- Decisions related to continual improvement opportunities
- Decisions related to any need for changes to the environmental management system including resources
- Actions, if needed, when environmental objectives have not been achieved
- Opportunities to improve integration of the environmental management system with other business processes if needed.
- Any implications for the strategic direction of the organisation.

10. Improvement

10.1 General

Breedon Cement will consistently strive to identify opportunities to improve, with regards to but not limited to, the 'monitoring, measurement', analysis and evaluation', 'internal audits' and the 'management review' areas. The focus of improvement opportunities is to ensure that the Environmental Management System is achieving its intended outcomes. Non conformities and corrective actions encompass two broad areas:

- **Physical plant / site non conformities**
- **Industrial Emissions Licence non conformities**

Breedon cements procedures in terms of non-conformities centres around reporting, corrective actions and the retention of documented evidence.

10.2 Nonconformity and corrective action

Occurrence and Evaluation of a Non Conformity (Physical plant / site):
If an environmental non-conformance or potential pollution incident should occur on site, the individual dealing with the non-conformity is responsible for reporting the event to their line manager or supervisor. The following information should be reported:

- Date of event
- Name of employee completing the non-conformity
- Part/plant description
- Plant equipment number for correct identification
- Reason for repair/change
- Probable root cause of problem and suggested solution.

It is the responsibility of the departmental managers to progress solutions within their own areas to ensure that the correct action / close-out occurs. The environmental officer will review environmental concerns on a frequent basis to ensure all are being progressed. The focus of root cause reporting is to:

- Determine the cause of the non-conformity
- Put a solution in place to prevent re-occurrence
- Determine if a similar situation could potentially happen elsewhere.

In addition to the above, non-conformities also arise as a part of the internal quarterly site audits. The non-conformities are documented in photographic form and complied into a report. The report is distributed to the relevant departments and actioned accordingly. A follow-up site audit will take place 21 days after the initial audit to gauge corrective action taken.

Occurrence and Evaluation of a Non Conformity (Industrial Emissions Licence non conformities):

Any non-conformity relating to a direct breach of the Industrial Emissions Licence is conveyed directly to the Environmental Protection Agency via the on-line reporting platform 'EDEN'. The responsibility to report any non-conformity to the EPA lies with the environmental department. All non-conformities are reported in a set format as per EPA guidelines. The non-conformance format consists of the following information:

- Date of Non Conformance
- Parameter
- Emission/Breach reference no.
- Time of non-conformity.
- Cause of non-conformity
- Corrective Action.

Depending on the severity of the non-conformity, further follow up action may be required.

Retention of documented nonconformities:

In order to successfully follow-up on corrective/preventative actions as raised through incident notifications and requests from the Environmental Protection Agency, the environmental officer keeps a log off all incidents, external communications sent and received and reviews of related Work Orders on the Maximo system.

The incident report log will contain corrective/preventative actions that impact directly on environmental issues and allow the environmental department to document if the suggested corrective/ preventative actions have been progressed/ closed out.

10.3 Continual Improvement

Breedon Cement are fully committed to continuous improvement, however small, of its environmental management system to ensure that it consistently meets and exceeds the requirements of the international environmental management system certification of ISO 14001: 2015.