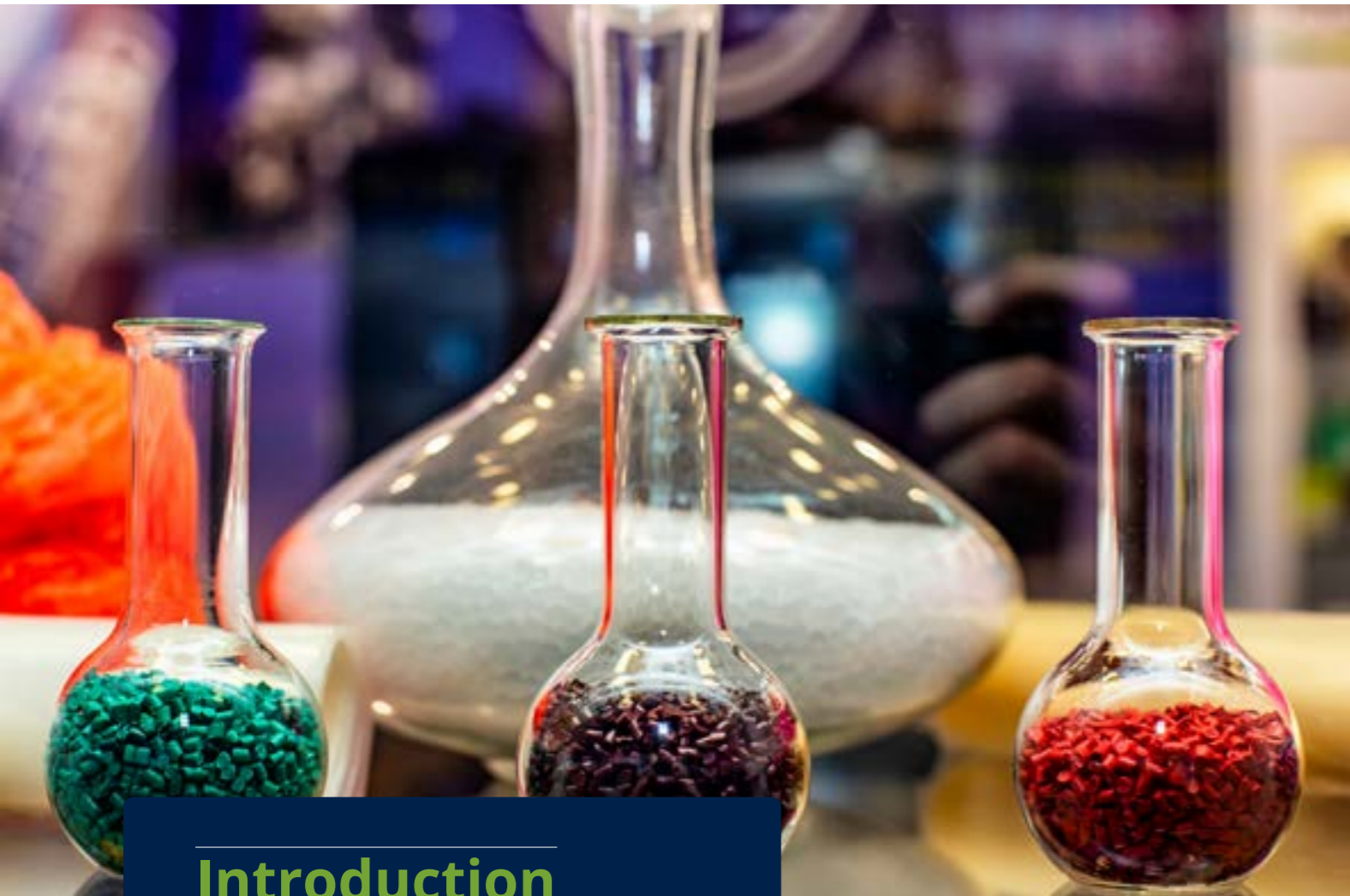




# **A Guide to Implementing PAS 510:2021 and Preventing Plastic Pellet Loss**

## REPORT



## Introduction

PAS 510:2021, 'Plastic pellets, flakes and powders – Handling and management throughout the supply chain to prevent their leakage to the environment – Specification', is the world's first plastic pellet loss prevention standard. It sets out requirements for the handling and management of pellets, flakes and powders throughout the supply chain – covering organisational responsibilities, leadership and commitment, training, risk assessment and operational controls.

The PAS is a comprehensive, risk-based, performance standard that is applicable internationally. It provides a standardised approach to risk management and the containment of plastic pellets with the aim of helping companies to achieve (and maintain) zero pellet loss across pellet handling operations.

### Benefits

By implementing and complying with PAS 510, there are benefits for both the environment and your company:

- Ensure that plastic pellets are contained on site and not lost to the environment
- Demonstrate your commitment to the environment
- Prevent pellets entering watercourses and the aquatic environment
- Maximise the use of feedstock
- Ensure compliance with regulations and legislation
- Protect the reputation of your organisation
- Prevent slips and falls

## Building on Operation Clean Sweep®

PAS 510 builds on the work (and success) of Operation Clean Sweep®, the plastic industry's international voluntary programme for plastic pellet containment and run by the British Plastics Federation (BPF) in the UK. Operation Clean Sweep® requires companies to make a commitment to implement systems and good practice to prevent pellet loss to the marine environment.

All parts of the plastics supply chain have a responsibility to ensure that plastic pellets, flakes and powders are contained and do not escape into the environment. Adoption of the PAS will reassure your customers, suppliers, shareholders, local community and other stakeholders that you have disciplined and systematic processes in place for the handling and management of pellets. Furthermore, it will show that you follow and comply with good practice to prevent pellet loss.

### A guide to implementing PAS 510

As PAS 510:2021 is a new standard, we have developed this guide to help you meet the requirements of the standard. It also provides templates, examples and tips for integrating the provisions into your current pellet handling practices. It is important to note that the examples provided are not definitive and are designed to give you a starting point for implementing PAS 510. It is vital that the policies, procedures, risk assessments etc. that you develop to comply with the PAS are specific to your organisation and business activities.

This guide highlights the key requirements of each clause and the main points to be aware of, as well as case studies to demonstrate the benefits that can be achieved by implementing measures to prevent plastic pellet loss to the environment.

Before you start with this guide, it is important that you first read the PAS. It is available to download and use free of charge from BSI online.

### Integrate into your current Environmental Management System

If you already have an Environmental Management System, PAS 510 has been developed so that it can be easily integrated into your current auditing and compliance processes. In fact, the standard itself states that:

**“organisations should add pellet management procedures to their existing ISO register of aspects and impacts”**

(Clause 10.2, NOTE 1).



How to fulfil the requirements of PAS 510:2021



Clause 1: Scope

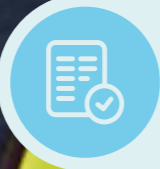
The first clause is informational and does not have any requirements that need to be met ... but it does detail the objectives of the standard, what is covered and who it is aimed at.

PAS 510 provides the “requirements for the handling and management of plastic pellets, flakes and powders throughout the supply chain to prevent spills, leaks and loss to the environment”. It is aimed at “any organisation, of any size, in any part of the supply chain that handles pellets, including raw material manufacturers, distributors, storage facilities, recyclers, transporters and plastics processors”, anywhere in the world.



Clause 2: Normative references

This simply means any other documents that are referenced within the standard that need to be conformed to, of which there are none!



Clause 3: Terms, definitions and abbreviations

Common terms have been included if they have been used with a specific meaning in the context of the PAS. There are no requirements or provisions in this section but it is important to know how the terms have been defined and there are some useful notes and examples giving a bit more information.



Clause 4: Organisational responsibilities

This is where the requirements start. The first step in achieving PAS 510 is to identify and document aspects within your organisation that influence and cause pellet spills and losses so that you can easily define your responsibilities.

Requirement	What does this mean?	Examples
Internal and external issues	What are the issues that impact your ability to prevent pellet loss? What are the influences of different elements of your organisation and how do they impact how you handle and manage pellets? A SWOT analysis is a simple way of presenting this.	<b>Internal issues:</b> lack of training, resources, finances, poor maintenance and equipment. <b>External issues:</b> Suppliers and sub-contractors, customer demand, weather/floods.
Interested parties	If you are not sure what an interested party is, there is a specific definition in Clause 3, but they are an individual or group of people affected by your organisation's activities. In the context of the PAS, this is their interest regards to pellets and your ability to prevent their loss into the environment.	Employees, customers, shareholders, suppliers, sub-contractors, regulators, legislators, the Environment Agency and trade associations.
Compliance obligations	Your compliance obligations arise from mandatory requirements, for example applicable laws that require permits and regulations that apply to the environmental aspects of your organisation's activities, products and services. You might also have voluntary commitments, such as Operation Clean Sweep®, supply chain relationships, contractual requirements or ethical standards.	Environmental permits, industry codes of practice, legislation.
Operational activities	What operational activities do you have where you are handling or managing pellets?	Production, transportation, processing, loading, unloading, storage, disposal and recycling.
Physical boundaries	This is defined in Clause 3 as the <i>“limit point of where land, equipment and infrastructure owned or controlled by the organisation is legally recognised”</i> .	This can be demonstrated with a site plan.
Authority to exercise control	You need to ensure that you have the authority to control the pellet handling activities included in the boundaries and scope.	<b>Authority to control:</b> processing, loading and unloading, disposal, supplier selection. <b>No authority to control:</b> off-site storage, transportation from material supplier to site.



## Clause 5: Leadership and commitment

Leadership, commitment and active support from management is critical for the success of implementing PAS 510 and achieving its intended outcomes. This is demonstrated by:



Establishing a pellet loss prevention policy



Setting performance objectives



Identifying and providing resources and infrastructure to prevent pellet loss



Setting up communication processes



Providing training



Ensuring pellet loss is monitored, documented and analysed



Assigning responsibilities for monitoring, managing and reporting on pellet spills and losses



Ensuring the organisation is engaging with its supply chain, including customers, on the importance of preventing pellet loss to the environment



Implementing actions to continually improve

## Pellet loss prevention policy

If you have ISO 14001, ISO 45001 or ISO 9001 you will have an environmental, health and safety or quality policy. PAS 510 is no different and you need to have a pellet loss prevention policy that has the overarching aim of eliminating all pellet loss to the environment.

You need to communicate it to all your employees and make it publicly available. The easiest way of doing this is via your website but also to display it in public areas of your site where visitors can see it and see your commitment to preventing pellet loss to the environment.

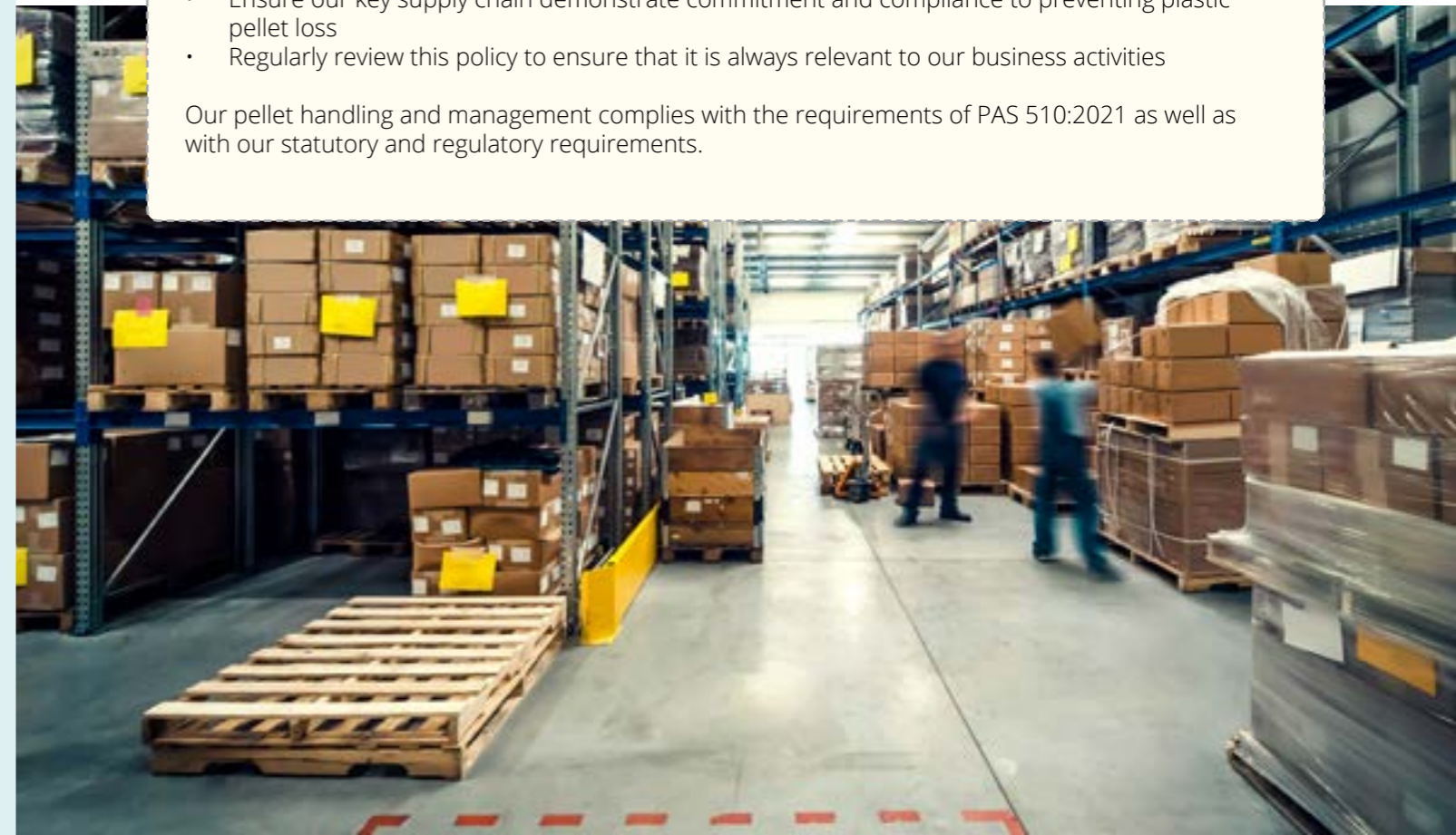


### Pellet loss prevention policy - an example

At XYZ we are united in our commitment to achieve zero plastic pellet loss to the environment. To achieve this, we will:

- Comply with all our compliance obligations including relevant environmental legislation and regulations
- Identify, evaluate and document the risk of pellet spills, leaks and loss to the environment resulting from our business activities. To then implement measures and undertake improvement actions to manage and control them
- Provide appropriate leadership
- Ensure the involvement of our people and provide them with specific training
- Implement documented procedures to prevent pellet loss conforming to the priority order of action: prevention, containment and clean-up
- Set clear targets and performance objectives within our business planning committing to continual improvement to achieve and maintain zero plastic pellet loss
- Ensure our key supply chain demonstrate commitment and compliance to preventing plastic pellet loss
- Regularly review this policy to ensure that it is always relevant to our business activities

Our pellet handling and management complies with the requirements of PAS 510:2021 as well as with our statutory and regulatory requirements.



## Pellet loss prevention performance objectives

Your effectiveness in preventing pellet loss can only truly be measured by your performance against the objectives you set.

PAS 510 states that you must include a percentage reduction in the actual or estimated quantity of pellets lost to the environment each year. This means you need to establish a baseline of how many pellets you have lost before you set your objectives.

Your objectives need to be categorised relating to the priority order of action to prevent pellet loss and reflect an evolution towards the ultimate goal of zero loss to the environment.

Objective	Deadline	Responsibility	Strategy to complete objective	Evidence of completion
Reduce pellet loss by 20% from 2021 baseline	End of Q4	HSEQ Manager	Apply operational controls for prevention, containment and clean-up of pellets	Pellet loss records
100% of operational staff to be trained in pellet clean-up techniques	End of Q3	HR	Training needs analysis to identify gaps followed by practical training covering areas such as maintenance of equipment, clean-up techniques, monitoring and recording and disposal (as detailed in Clause 6.2)	Training records
25% of suppliers and subcontractors handling or managing pellets to be PAS 510 compliant	End of Q4	Purchasing Manager	Inform all suppliers of the importance of preventing plastic pellet loss and encourage them to comply with PAS 510	Supply chain / purchasing records
Reduction in pellet spills and leaks during transfer of pellets to silos	End of Q2	HSEQ Manager	Implement on-site inspections before, during and after unloading of pellets	Pellet loss records

### How to estimate pellet loss

#### 1. Monitoring transportation vehicles

When transportation vehicles leave site, collect and weigh the pellets found on or around the loading/unloading area. The figure can be extrapolated to estimate an annual loss rate caused by loading and unloading.

#### 2. Assessment of punctured containers and bags

If a container or bag is damaged causing a leak or spill of pellets a simple weight comparison will provide an estimate of the pellets lost.

#### 3. Mass balance

Quantity of pellets delivered to site minus the quantity of pellets processed.

	Pellet containment	Pellet clean-up	Reporting performance to management	Setting performance objectives	Establish pellet loss prevention policy	Provide resources and infrastructure	Processes and procedures	Training	Internal auditing	Internal communication	External communication	Monitoring & documentation	Verification of conformity	Performance evaluation
Managing Director				x	x	x								x
Operations Director				x				x		x		x		x
HSEQ Manager	x	x	x				x		x	x		x	x	x
General Manager	x	x					x	x	x	x		x		
Production	x	x					x							
Maintenance	x	x					x							
Purchasing / Supply Chain Manager												x		
Marketing										x	x			
Sales											x			
HR								x						



## Clause 6: Competence, training and awareness

The aim of this clause is to ensure that your employees who are running processes with the potential for pellet loss can do so in such a way that they do not lose or spill any pellets ... and if they do, they know how to contain them, clean them up and prevent it from happening again. If you have an ISO 14001 Environmental Management System, you will recognise the three-step process of competence, training and awareness. In PAS 510, the competence and training sub-clauses are targeted at employees that handle or manage pellets, and awareness is for all employees of your organisation, whether they handle pellets or not.



### Competence

The first step is to identify what skills and abilities are needed for a person to perform their job to avoid pellet spills, leaks and loss. This competence can be gained through education, training or industry experience. Demonstrated competence should include maintenance, containment and clean-up techniques, monitoring and reporting, risk assessments and handling techniques and **procedures**.



### Training

PAS 510 is specific about the training that needs to be provided to personnel that handle pellets, in the areas of prevention, containment and clean-up. Training needs to include maintenance of equipment, procedures, containment and clean-up techniques, how to monitor and record incidents, disposal and recycling.

Training does not have to be traditional classroom sessions, it can be offline or online, on the job, using an app or website, quizzes or informational meetings, but it does need to be effective! (A requirement of the standard is to review the effectiveness of any training carried out).



### Awareness

You need to make all employees aware of the pellet loss prevention policy, its contents, their role and contribution in preventing pellet loss, the consequences of non-conformance and the procedures for containment and clean-up of spills as well reporting. The standard also requires you to make employees aware of the environmental impact of pellet loss.



### Environmental impact of pellet loss

- Causes harm to wildlife such as fish and birds
- Pollutes streams, rivers, and other waterways
- Poor transportation, handling and management can lead to spills in which pellets find their way into storm drains and be carried out to sea



## Clause 7: Risk assessment of pellet loss

The risk assessment process is to evaluate how likely it is that the environment may be impacted because of your organisation's handling and management of plastic pellets. Again, the standard gives you specific provisions for documenting your risks, including:

1. Ranking risks according to the potential for pellet loss
2. All the activities identified in Clause 4

The areas to cover as part of the risk assessment are also detailed in the PAS and include site boundaries, infrastructure, transportation vehicles, storage facilities, equipment, materials, physical conditions, handling practices, management practices and historical incident information, including near misses (if it is available).

In addition, the risk assessment must include the availability of effective equipment for prevention, containment, clean-up, maintenance, pathways into local environment and watercourses, high risk areas, processes and procedures.

To ensure they are effective, risk assessments need to be reviewed and approved by management at least every two years.



## Example risk assessment

Risk Area	Description	Availability of Equipment	Maintenance	Pathways into the local environment or waterways	High risk area(s)	Processes and Procedures Available	Overall Risk (L   M   H)
Site boundary	Small stream on the north-east boundary of the site	Mesh screening placed on storm drains  Surface skimmers used to remove accumulated pellets	Storm drains cleaned weekly (or after heavy rain) to prevent drain clogging and overflow	Potential escape from site boundaries into stream	Silos Doorways Moving pellets round site from storage to production	SOP_005: Outside clean-up of pellets SOP_006: Emergency procedures for pellet spills and leaks into watercourses	High
Infrastructure	Building used for plastics processing, mainly extrusion and injection moulding	Vacuums, brooms, dustpans and rakes, catch-trays, tape, forklift clean-up kits	Weekly inspections of building to monitor pellet spills and leaks	Open doorways	Entrance/exits to the building	SOP_008: Infrastructure	Low
Transportation Vehicles	Release of pellets from vehicles when transporting pellets to site	Pallet guards, spill kits	Regular cleaning of transportation vehicles	During transportation – release onto roads	Loading and unloading of vehicles	SOP_007: Requirements for the transportation of pellets SOP_009: Purchasing	Medium
Storage Facilities	Pellets stored in octobins, on pallets within the warehouse facility	Cardboard caps used on top and bottom of pallets to minimise puncturing and contain loose pellets	Octobins checked for damage before reuse	Limited - No internal drains	When moving the pellets using pallet trucks or forklifts	SOP_001: Storage of plastic pellets SOP_002: Storage of pellets at off-site facilities SOP_003: Handling and storage of waste pellets	Medium
Equipment	Storage of pellets in silos	Catch trays	Monitoring checks carried out before and after pellet deliveries	Blown across the site during transfer	Connecting hoses	SOP_004: Transfer of pellets to silos	High
Materials	Processing of resin powders	Vacuum Conveying system	Monitoring checks for leaks, especially around seals	Wind and traffic can easily disperse powders into the environment	Silos, tanks and containers Conveyors Processing equipment	SOP_010: Storage and processing of powders	High

Risk Area	Description	Availability of Equipment	Maintenance	Pathways into the local environment or waterways	High risk area(s)	Processes and Procedures Available	Overall Risk (L   M   H)
Site boundary						SOP_011: Preventative maintenance	High
Physical Conditions	Maintenance of gravel yards	Vacuums for outside use	Routine inspections of gravel areas	Outside environment – blown across site	Close to drains and waterways	SOP_005: Outside clean-up of pellets SOP_006: Emergency procedures for pellet spills and leaks into watercourses	Low
Handling Practices	Filling and handling of bags for pellet storage	Tape, spill kits, replacement bags	Pellets spilled during filling process are cleaned up immediately	During transportation – release onto roads	Limited - No internal drains	SOP_012: Handling pellets and filling bags	Medium
Management Practices	Pellet loss visible across the site	Vacuums, brooms, dustpans and rakes, catch-trays, tape, forklift clean-up kits	Routine inspections of the site, including production areas, car parking, drainage and yards	Drains, blown out of site boundaries	Site boundaries	SOP_005: Outside clean-up of pellets SOP_006: Emergency procedures for pellet spills and leaks into watercourses SOP_008: Infrastructure	Medium
Past incident information	75% of spills occur during transfer of pellets to silos	Catch trays, spill kits	Monitoring checks carried out before and after pellet deliveries	Blown across the site during transfer	Connecting hoses	SOP_004: Transfer of pellets to silos SOP_005: Outside clean-up of pellets	High



## Clause 8: Operational controls

The operational controls you implement need to be proportional to the anticipated risk of pellet loss. The key steps for preventing plastic pellets being lost to the environment are:

- prevent** spills and leaks
- if there is a spill or leak, **contain** them so that they do not become lost to the environment
- clean-up** pellets after spills or leaks

Your organisation needs documented procedures to prevent the loss of pellets and contain and manage clean-up after spills or leaks.

Operation Clean Sweep® can help you with this. The OCS manual contains pellet management and loss prevention procedures that can be adapted to suit the needs of your business. It also includes management checklists, employee checklists and staff communication posters and leaflets to promote preventing pellet loss across your organisation.

There are other sources of information that can help with good practice for preventing pellet loss, such as the European Chemical Transport Association, Plastics Europe, British Retail Consortium Global Standards and the British Plastics Federation.



### Prevention

To fulfil the requirements of PAS 510, you need to take effective action to prevent spills, leaks and loss of pellets by implementing documented procedures, monitoring and reporting spills and leaks (as well as any near misses). You will also need to provide training and ensure your employees are aware of the prevention measures and their responsibilities.

Equipment needs to be available that is correctly designed, maintained and tested to ensure its effectiveness. Furthermore, when the equipment is undergoing maintenance, measures need to be in place to prevent any further spills or leaks.



### Containment

There are additional requirements for containing pellets in the event of a spill, including assigning specific personnel responsibility for managing, monitoring and reporting the spill. As with prevention, the PAS highlights that effective actions need to be taken in areas such as equipment, documented procedures, monitoring and reporting, training, awareness and responsibility.



### Clean-up

Specific personnel must be assigned responsibility for the management and monitoring of pellet clean-up after a spill, leak or loss. Again, the requirement is to take effective action to clean-up pellets and includes equipment, documented procedures, monitoring and reporting, training and awareness and responsibility. An additional point of this clause includes the identification of compliance obligations and the relevant authorities to report pellet spills, leaks and loss to. For example, international and national maritime authorities if the loss occurs at sea.

To be Continued →

An important aspect to note of this clause, is the requirement to clean up pellets where they have built up on site and are deemed to be a risk to the environment.

Whether the controls are related to prevention, containment or clean-up, records must be maintained to demonstrate the actions taken.

## Procurement, suppliers and subcontractors

If you buy goods and services that use, process, manufacture, handle, store or transport pellets you need to implement a process along with selection criteria to ensure responsible pellet handling. This supply chain approach encourages you to work with your suppliers and subcontractors to identify pellet loss risks associated with your activities and operations.

For example, when pellets are being unloaded into silos or storage areas the responsibility should be mutually shared between your organisation and the supplier delivering the pellets.



### Example selection criteria

- ISO 14001:2015 certification
- Compliance with PAS 510:2021
- Signing the pledge, and demonstrating commitment to Operation Clean Sweep®
- Pellet loss prevention policy
- Specific processes or procedures in place



## Clause 9: Communication

If you have already achieved certification to an ISO management system, you should already have internal and external communication processes in place, and the requirements for PAS 510 can be integrated into your current process.

If you do not, you will need to establish a process for communicating your commitment to preventing pellet loss. Ultimately, the goal is to ensure that all internal and external stakeholders are correctly informed to ensure that you are compliant to PAS 510.

Clear, concise and accurate communication is fundamental to this clause. Establish when you are going to communicate, who with and how. Collate your planned communications in a table to demonstrate your activities for this requirement.

Communication	Audience	Prompt or Frequency	Documented Information
Preventing pellet loss posters	Visitors to site Employees	Always available Updated to include relevant site data	Posters displayed on-site
Pellet loss prevention workshop	Operational staff with responsibility for managing and/or handling pellets	Annually	Training materials
Team Briefing	All staff	Six-monthly	Notes prepared in advance of meeting
Pellet loss prevention policy	All staff, stakeholders, suppliers and interested parties	Always available	Available on website, displayed on site, company intranet
Newsletter	Stakeholders, suppliers and interested parties	Quarterly	Electronic newsletter

## Internal communication

Internal communication related to preventing pellet loss needs to be managed, delivered and logged. It is critical that employees continue to understand the importance of compliance and improvement as well as the impact their working practices can have on the environment. To ensure effective internal communication:

- Inform employees in advance about your commitment to PAS 510 and preventing pellet loss and encourage them to start thinking about the role they can play
- Ask employees for ideas – they do the job every day and may have ideas to be more effective or efficient
- Keep everyone updated through emails, posters, noticeboards, team briefings, intranet etc.
- Be open and share good and bad feedback
- Highlight the value of the policies and procedures put in place to prevent pellet loss

## External communication

This includes how, what and when you communicate with your suppliers, sub-contractors, stakeholders and other interested parties (the ones we identified in Clause 4). Start by giving your suppliers and sub-contractors a copy of your pellet loss prevention policy. Where sub-contractors need a higher degree of awareness, provide them with a training session that includes an induction and introduction to your pellet loss prevention procedures and requirements.

Examples of communicating with your supply chain:

- Posters displayed in unloading/silo areas detailing what to do in the event of a spill and who to contact
- Requirements for handling, storage, transportation etc. detailed in contract
- Environmental / Pellet Loss Performance report
- Company newsletter
- Website



## Clause 10: Performance evaluation

The standard requires that your performance in preventing plastic pellet loss to the environment is measured and monitored. You need to consider what should be measured, the methods employed and when the data should be analysed and reported on.

It is important to note that this clause requires you to estimate the quantity of pellets lost per year and keep appropriate documented information as evidence.

Suppliers' performance also needs to be monitored, and incidents of non-compliance fed back to them. The information gathered will also support your procurement selection criteria (Clause 8).



- Performance evaluation criteria
- Number of spills
- Estimated quantity of pellets lost to the environment versus gross quantity of pellets handled
- Number of near misses
- Number of leaks recorded

## Monitoring and documentation

Your actions to prevent pellet loss need to be monitored to assess their effectiveness as well as being documented.



### How to measure the effectiveness of your actions

- A year-on-year reduction in the amount of pellets lost to the environment
- Reduction in the amount of leaks and spills caused by damage to packaging
- Number of customer or supplier complaints relating to pellets
- Amount of pellets cleaned-up where they have built up on site
- Increase in the number of suppliers achieving PAS 510 or pledging their commitment to Operation Clean Sweep®

As with all standards, there is a requirement to develop, maintain and document systems to manage and monitor effectiveness, and in the case of PAS 510 it is the effectiveness of your pellet loss prevention actions. This includes ensuring documents are readily available for use, easily retrievable, and protected.

## Auditing and verification of conformity



### Frequency

An annual audit programme needs to be established, but the frequency of the audits for your different processes, operational activities and records should be based on the potential consequences of non-compliance.



### Implementation

Perform the audit and keep records of the results. The person(s) carrying out the audit needs to be competent, which can include knowledge of your activities as well as knowledge of legislation, regulations and the PAS. Visual inspections need to be performed across the site to identify areas where pellets have been spilt.



### Reporting

The results of the audits need to be reported to management, but can also be reported to stakeholders, shareholders, customers and employees.



### Action

If you identify non-compliances, treat them as a non-conformity. Record them, take action to correct and evaluate the cause to ensure that it does not recur.



### Communication

Communicate the results to your interested parties, where applicable. Demonstrate your ongoing commitment to the overarching aim of zero pellet loss to the environment.



## Clause 11: Improvement

A non-conformity is the failure to meet a requirement. If you do not satisfy the requirements of the standard, your own procedures of relevant third-party requirements, then it will be considered a non-conformance.

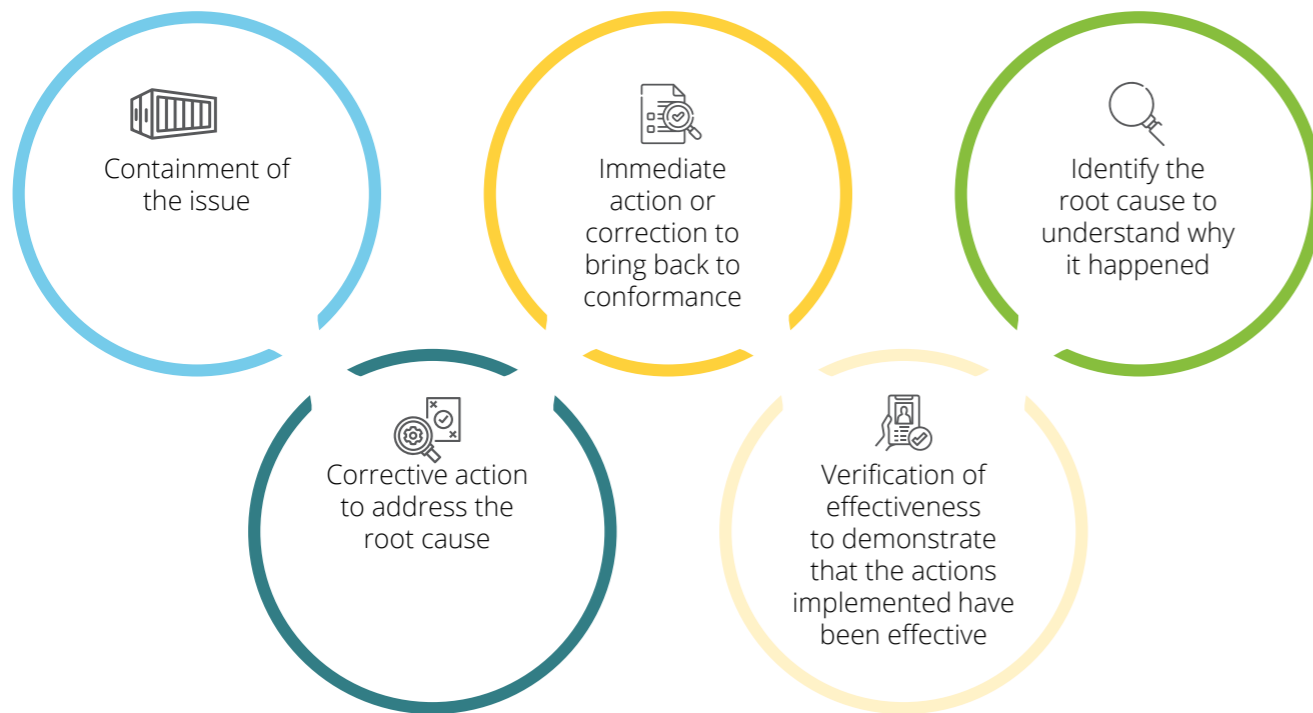
### Non-conformity and corrective action

If a non-conformance does occur, PAS 510 requires you to take action to control and correct it, as well as deal with the consequences. More importantly, you are required to evaluate the non-conformity to eliminate the cause(s) to prevent it from happening again.

Log your non-conformities in an Action Improvement Register, which will enable you to keep track of them, as well as support the requirement for retaining documented information.

No.	Date	Raised by	Location	Reference Document	Description	Cause	Improvement Action	Date Closed
1	01/02/22	A Jones	Silos	AUD001-Silos	Large quantity of pellets on the ground in the silo area	No equipment, spill kits or disposal bins available in silo area to support clean-up when spills occur	Equipment available in silo area. Spill procedure available in silo area. Poster displaying who to contact in the event of a spill	15/02/22
2	31/03/22	F Smith	Car park	AUD125-Boundaries	Large quantity of pellets in the gravel on the site boundary, close to visitor car park	Legacy pellets that have built up on site	A programme is in place to clear up pellets that have built up, that pose a threat to the environment	Ongoing
3	01/05/22	S Peel	Stores	PS-374	Large pellet spill in stores	Ripped storage bags damaged by forklift truck	Additional training for forklift truck drivers, spill kits added to trucks and pallet guards added to minimise puncturing and contain loose pellets	

When it comes to addressing non-conformances and corrective actions it is important to follow five key principles:



## Supply chain non-conformity

The standard also requires the pellet loss performance of your supply chain to be monitored, as well as any events they may have caused. For example, has your haulier delivered pellets to a customer site and damaged the packaging? Does a customer have poorly designed outdoor storage facilities and a pellet spill has contaminated a local waterway?

These non-conformities also need to be reviewed to eliminate the causes and demonstrate commitment to preventing pellet loss to the environment.

## Continual improvement

Continual improvement is the need to systematically improve the management and handling of pellets across the organisation. There is always room to improve ... and the overarching aim of PAS 510 is to achieve (and maintain) zero pellet loss to the environment.

To identify where improvements can be made, use information and results from internal audits, monitoring and measuring, performance evaluation and risk assessments and determine where there will be benefits.

## Case Study: Sealed Air

Sealed Air St Neots first carried out an Operation Clean Sweep ® audit in 2019. The comprehensive audit involved a tour of the plant following the OCS checklists and manual covering worksite setup, reviewing procedures for prevention, containment and clean-up, identification of transfer points and spill areas, recycling and disposal and employee participation and accountability.

The audit highlighted a number of areas of concern including training, housekeeping, availability of cleaning equipment and operational controls.

As the next step, Sealed Air are implementing the requirements of PAS 510 across three of their UK sites to demonstrate their commitment to preventing plastic pellet loss to the environment.

### Simple but effective actions

The initial audit helped to identify the high-risk areas where pellets were being lost to the environment, namely silos and where pellets were being received or transferred. A project team was put together to address the gaps, brainstorming sessions held to gather ideas and expense proposals prepared for capital items. Key to the success of the actions has been the communication programme, both with suppliers and sub-contractors as well as Sealed Air employees.

Hygiene boards around the plant have improved housekeeping, drains are better protected with tight meshed guards and responsibilities allocated for cleaning of specific areas.

### Communication

The communication strategy includes posters displayed round the site, training and awareness on spills including prevention and clean-up techniques, training on the impact of pellets on the environment, clear roles and responsibilities detailed for dealing with pellets and providing information to contractors, suppliers and visitors to site



### The challenge

The audit showed areas where pellets had built up. Huge efforts have been made to clear these up, particularly round the silo areas. This has had a positive impact on both the appearance and reputation of the site.

### Progress

Visible progress has been made since 2019 in preventing plastic pellet loss to the environment. Areas outside the plant have been cleared of the build up of pellets and a new cleaning and inspection regime has been implemented. A large external vacuum has been installed in the baler area, and the baler is cleaned weekly to prevent pellet build up. Drivers are now involved in cleaning the goods in area, an area first identified as high risk.

Preventing pellets being lost into the environment has now become a responsibility for everyone on-site and there is commitment from everyone in the company.

### Benefits

The Sealed Air site at St Neots has seen a number of benefits from implementing both Operation Clean Sweep and the requirements of the PAS, including:

1. DSEAR/ATEX improvement
  - a. Identification of equipment with leaks and faults
  - b. Improved efficiencies
  - c. Improvement in project motivation
2. Increased awareness of the issues associated with pellet loss across the site
3. Less waste to recycle
4. Improved site appearance and in turn reputation
5. The purchase of new and more effective equipment
6. Increased awareness amongst logistics suppliers



All technical and other information has been given for information purposes only. Although the information is believed to be reliable, the data is provided without implied warranties of any kind. PS Partnerships & Consultancy Ltd and The British Plastics Federation shall not be liable or obligated under any contract, negligence, strict liability or other legal equitable theory to any party for any amounts representing loss of profits, loss of business, indirect, consequential, special or punitive damages, even if advised on the possibility of such damages. This report has been prepared solely based on information supplied up to the point of its completion and has been accepted in good faith.