

MPA CODE OF PRACTICE FOR THE USE OF WASTE MATERIALS IN CEMENT AND DOLOMITIC LIME MANUFACTURE

INTRODUCTION

1. Using waste-derived fuels (WDF) and alternative raw materials (ARM) in cement and dolomitic lime manufacture improves the sustainability of operations by reducing the use of fossil fuel and natural raw materials and helping to solve society's waste problem. Waste derived fuels have been used successfully by the UK cement industry since the early 1990's and have been demonstrated to deliver clear environmental benefits. The use of wastes from other industries as raw material has been in place for much longer with materials such as colliery shale, pulverised fuel ash and mill scales being used since the 1950s. The use of waste is subject to strict regulatory controls and this Code of Practice has been developed by the MPA with its Members and in collaboration with the Environment Agency to set out the minimum standards to which members will adhere when using waste materials¹.
2. Cement and dolomitic lime Members of the MPA using waste will comply with the requirements of this Code of Practice (after this referred to as the Code), the requirements of the Industrial Emissions Directive and permit issued under EPR, PPC or succeeding legislation whilst using waste. It is expected that Members will incorporate the requirements of the Code in to their Environmental Management Systems which are periodically audited by third parties.
3. Members will comply with the regulatory requirements imposed by the environmental regulator (here after referred to as the Regulator), the Health and Safety Executive and other relevant regulatory bodies at all times. This Code goes beyond these statutory legal requirements and is designed to ensure that employees and the public understand the strict conditions under which waste is used.
4. In addition to legislation there are applicable industry guidelines. In the cement industry the World Business Council for Sustainable Development has a Cement Sustainability Initiative (WBCSD CSI). The WBCSD CSI has produced Guidelines for the Selection and Use of Fuels and Raw Materials². The United Nations Environment Programme has also produced guidelines³ on the environmentally sound co-processing of hazardous waste in cement kilns. MPA Cement members have agreed to take these guidance documents into consideration when using waste materials in UK cement kilns.

¹ Although MPA is of the view that this Code complies with minimum legal requirements it is for individual companies to assess internally their own compliance with the law and the Code does not amount to a guarantee that legal requirements, which do vary from time to time, will be met. Companies are free to impose any additional standards they may choose to do so in the area covered by the Code and no limitation on their conduct other than agreement to comply with the Code as minimum standard is implied by this Code being issued.

² World Business Council for Sustainable Development, Cement Sustainability Initiative, "Guidelines for the Selection and Use of Fuels and Raw Materials in the Cement Manufacturing Process", http://www.wbcscement.org/pdf/tf2_guidelines.pdf

³

<http://www.basel.int/DNNAdmin/AllNews/tabid/2290/ctl/ArticleView/mid/7518/articleId/783/Technical-guidelines-on-the-environmentally-sound-co-processing-of-hazardous-wastes-in-cement-kilns.aspx>

NEW WASTE

5. The Code will apply the first time a particular waste is identified to be used at an installation.

ACCEPTANCE PARAMETERS

6. *Annex I* contains a specification list for the different categories of waste for recovery by the cement and dolomitic lime industry. The list has been agreed with the Environment Agency following careful consideration of technical and environmental aspects and the experience of the industry in using waste derived materials for over 20 years.
7. The industry will limit replacement to its process (thermal/mineral) needs. The risk assessment will identify any necessary controls on usage rates to ensure continued compliance with emission limits and no net increase in environmental impact.

UNSUITABLE MATERIALS

8. The industry recognises that some materials are not suitable for co-processing in cement/dolomitic lime kilns or that some materials represent particular hazards that alone or in combination with other materials are unsuitable for the industry to handle. A list of voluntary excluded substances and properties are included in *Annex II*.

ASSESSMENT PROCESS FOR NEW WASTE MATERIALS

9. Many waste materials are already permitted for use in cement and dolomitic lime operations in the UK. These permitted waste have undergone an assessment by both the operator and the regulator for suitability and environmental impact and they have been deemed to be suitable or 'BAT' (where their use is considered to be a Best Available Technique).
10. Cement and dolomitic lime operators are not disposal routes for wastes. Cement and dolomitic lime production is a carefully controlled process to meet exact specifications of the end product for quality and safety reasons. Waste materials will only be considered for use in cement and dolomitic lime operations where there is evidence of energy or mineral content recovery in recognition of the 'Waste Hierarchy'⁴.
11. Where a new material is identified for recovery in cement or dolomitic lime installations then an assessment and introduction process will be followed. This self-assessment and introduction process is summarised as the flow chart in *Annex III*.
12. In order to utilise the assessment process, operators have presented their 'risk assessment' procedure to the Regulator and embedded it in Environmental Management Systems.
13. Environmental Risk Assessment is at the core of the new waste introduction process and MPA has devised a list of criteria that each Member Company risk assessment should consider when introducing a new waste onto site. The Risk Assessment Criteria are detailed in *Annex IV*.

⁴ See Article 4 of the EU Waste Framework Directive

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14. Once the assessment process has been followed there are a range of outcomes. For the simplest of changes the operator will proceed without a detailed involvement with the regulator and for more complex changes the outcome of the assessment will involve communication with the Regulator such as 'pre-application' discussions for permit variations.

COMMUNICATION

15. Communication is an important consideration for MPA members and our cement and lime operators are committed to developing effective and constructive liaison with their local communities. They undertake to liaise with local communities and meet periodically to ensure that the information regarding environmental effects, in the widest sense, is in the public domain.
16. Communication with stakeholders will be tailored to the stakeholders, the complexity of the change and local circumstances.
17. The results of the assessment will be documented within the company Environmental Management System and retained for inspection by the Regulator. The environmental performance of the installation will be monitored according to the environmental permit requirements and the results will be reported to the Regulator.

Mineral Products Association
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***Annex I
Waste Specification List***

***Annex II
List of Excluded Substances and Properties***

***Annex III
Waste Assessment and Introduction Process***

***Annex IV
New Waste Environmental Risk Assessment Criteria***

Annex I- Specification list for the different categories of waste for recovery by the cement and lime industry.								
Waste Specifications for the Cement and Lime Sector								
Fuels								Blended ARM
Parameters	PSP	SRF	MBM	Tyres	WLF	RFO	Wood	ARM (Alternative Raw Materials)
Units mg/kg (unless otherwise)								
Gross Calorific Value (MJ/kg)	10 - 40	10 - 40	10 - 40	15 - 40	10 - 42	30 - 48	10 - 40	<10
Sulphur	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	
Chlorine	2.00%	2.00%	2.00%		2.00%	2.00%	2.00%	ARM shall contain no more than 1% halogenated organic substances
Total Fluorine, Bromine & Iodine		1.50%			1.50%		1.50%	
Mercury	10	10			20	10	10	2
Total Group II Metals (Cd + Tl)	30	30			40	40	30	50
Maximum Replacement	NA	NA	NA	NA	40%*	NA	NA	NA

* As required by Article 46(2) of the Industrial Emissions Directive (2010/75/EU).

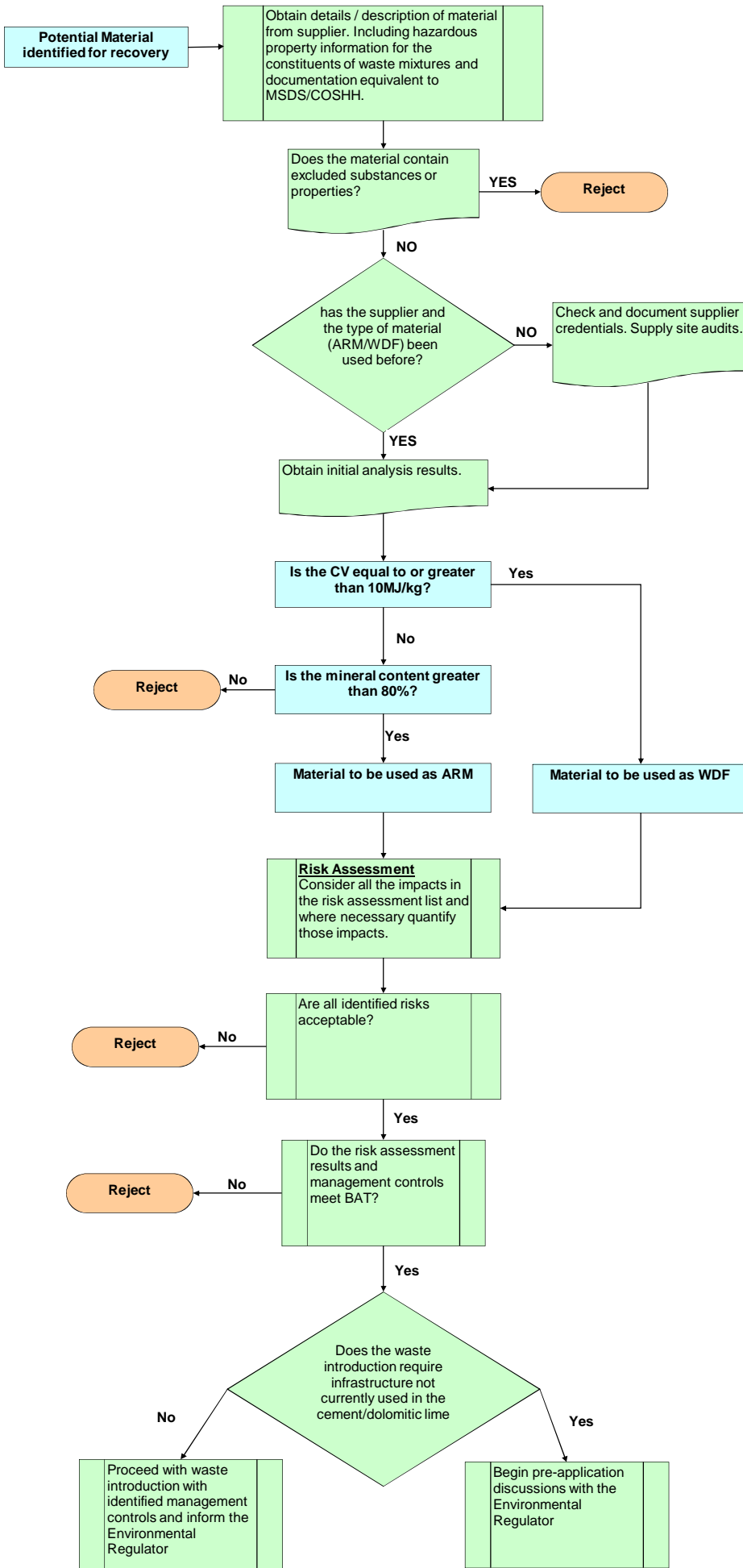
Annex II- List of Excluded Substances and Properties

The following properties and substances, where classified for the waste material to be used, are the absolute exclusions referred to in the code of practice. Where material under assessment contains substances which would individually attract these classifications but they appear in low concentrations then these would be subject to scrutiny by the risk assessment.

HP Code	WM2 Risk Phrase	ARM Absolute Exclusions
HP1	R2	Explosive
HP3	R10	Flammable
HP6	R23	Acute Toxicity
HP7	R45	Carcinogenic
HP9	-	Infectious
HP10	R60	Toxic for Reproduction
HP11	R46	Mutagenic
HP12	R29	Release of an acute toxic gas cat.1,2, or 3

HP Code	WM2 Risk Phrase	WDF Absolute Exclusions
HP1	R29	Explosive
HP7	R45	Carcinogenic
HP9	-	Infectious
HP10	R60	Toxic for Reproduction
HP11	R46	Mutagenic
HP12	R29	Release of an acute toxic gas cat.1,2, or 3

Annex III - Waste Assessment and Introduction process



Annex IV- New Waste Environmental Risk Assessment Criteria

The table below indicates the categories and the main suggested headings for the risk assessment. Each column is a different group of headings e.g. natural environment impacts contains habitats, biodiversity, restoration etc.

This risk assessment will consider the possible impacts of introducing a particular ARM/WDF. These impacts will be quantified where necessary, and measures will be taken to eliminate or minimise them taking account of relevant guidance where necessary.

Natural Environment Impacts	Natural Resource Impacts	Change Management	Health and safety	Product Assessment
Habitats: assess any potential to affect sites of heritage, landscape or nature conservation, and/or protected species or habitat.	Air, Land Water: Assess the changes to point and fugitive releases to air, water and land and provide appropriate measures to ensure that routine releases are minimised	Legislative change assessment: Assess the need to change permits, authorisations and licences	Accident and Emergency Procedures: review accident and emergency procedures and make the necessary modifications to ensure a safe operating environment	Product quality changes - assess and ensure that the new activities do not compromise product quality and where necessary reject the material or modify the planned arrangements so that product quality is not adversely impacted.
Biodiversity: assess any potential to affect sites of heritage, landscape or nature conservation, and/or protected species or habitat.	Pollution Incidents: Assess is there is increased potential for unauthorised pollution incidents and if necessary put in place additional controls to manage the likelihood and severity of pollution incidents.	Planning permission: assess the requirements for planning applications or modifications	Security: assess the requirement for changes to existing infrastructure and procedures to ensure the site remains secure	
Restoration: assess any requirements for minimising the impact on restoration	Waste minimisation and waste generation: assess measures to ensure that waste production will be avoided as far as possible and where waste is produced it will be recovered unless technically or economically unfeasible.	Storage Compatibility: assess the requirements for new or modified storage and the compatibility of the new materials with existing materials	Bulking compatibility: where the waste is combined with other materials, assess the compatibility of the planned materials and bulking arrangements	
Litter and vermin: assess the requirements for litter and vermin control	Resource efficiency: assess impact on resource efficiency and natural resource protection. Ensure that the waste introduction results in an overall net environmental benefit	Public perception: assess the likely reaction of the public to the new or modified activity and customise communication methods where justified.	Identify and record any accident and emergency procedures specific to the waste	
Decommissioning: assess the requirements for end of life/decommissioning	Sustainability: assess the impact on the company sustainable development initiatives	Changes to management system: assess the need for new procedures or other changes to the management system		
Odour: assess appropriate measures to prevent/ minimise odour.	Energy efficiency- assess the impact on energy consumption and introduce appropriate measures to ensure that energy is used efficiently.	Monitoring, sampling and analysis: assess what monitoring and sampling is required to meet permit conditions and modify procedures where necessary.		
Noise: assess appropriate measures to prevent/ minimise noise.	Responsible sourcing - assess the impact on responsible sourcing accreditation and where necessary introduce appropriate measures to ensure the efficient use of materials.	Training: assess the need for any new or modified training needs		
Nuisance: assess the potential for nuisance and the controls necessary for nuisance minimisation	Climate change: assess the impact on GHG emissions.	Material movement and handling: assess the suitability of the existing material handling techniques and where necessary the need for new or modified handling equipment/techniques		
Visual impact: assess the potential for visual impact and the controls necessary for visual impact minimisation	Water use: assess the impact on natural and potable water consumption and introduce appropriate measures to ensure the efficient use of water.			
	Groundwater: assess the impact on ground water quality and quantity and introduce appropriate management.			
	Transport: where significant transport is required assess and where necessary manage the impact associated transport movements.			