

PROCESS GUIDANCE NOTE
JANUARY 2005

Process Guidance Note
NIPG 6/2 (Version 2)

Manufacture of Timber and Wood-Based Products

ENVIRONMENT (NI) ORDER 2002
POLLUTION PREVENTION AND CONTROL REGULATIONS (NI) 2003
INDUSTRIAL POLLUTION CONTROL (NI) ORDER 1997
IPC (PRESCRIBED PROCESSES AND SUBSTANCES) REGULATIONS (1998)

GUIDANCE FOR PROCESSES PRESCRIBED FOR
AIR POLLUTION CONTROL
AND
AIR POLLUTION PREVENTION AND CONTROL
BY DISTRICT COUNCILS



Department of the
Environment

www.doeni.gov.uk

The Department would like to acknowledge the work of the Environment Agency's Local Authority Unit in the drafting of this guidance note.



Environment
Agency

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1 Introduction

- 1.1 This Note is issued by the Department of the Environment to give guidance on the conditions appropriate for the control of emissions into the air from the manufacture of timber and wood-based products processes / installations¹. It supersedes guidance note NIPG 6/2 Version 1 Manufacture of Timber and Wood-Based Products that issued in March 1998.
- 1.2 This is one of a series of notes giving guidance on Best Available Techniques (BAT) and Best Available Techniques Not Entailing Excessive Cost (BATNEEC)². The notes are all aimed at providing a strong framework for consistent and transparent regulation of processes and installations.
- 1.3 This note is for use under both Local Air Pollution Control (LAPC) established by the Industrial Pollution Control (NI) Order 1997, and Local Air Pollution Prevention and Control (LAPPC) established by the Environment (NI) Order 2002³. It constitutes statutory guidance to regulators under regulation 38 of The Pollution Prevention and Control Regulations (NI) 2003. To the extent it provides guidance on techniques, it also constitutes statutory guidance to regulators under section 7(11) of the 1997 Order, and in any event regulators are expected to have regard to it. The note will be treated as one of the material considerations when determining any appeals against a decision under either the 1997 or 2002 Orders.
- 1.4 The note also (where appropriate) gives details of any mandatory requirements affecting air emissions which are in force at the time of publication, such as those contained in Directions from the Department.
- 1.5 All processes are subject to BAT/ BATNEEC. In general terms, what is BAT/ BATNEEC for one process in a sector is likely to be BAT/ BATNEEC for a comparable process; but in each case it is, in practice, for regulators (subject to appeal) to decide what is BAT/ BATNEEC for the individual process and the regulator should take into account variable factors (such as configuration, size and other individual characteristics of the process) and the locality (such as proximity of particularly sensitive receptors⁴). Ultimately, therefore, what constitutes BAT/ BATNEEC is site specific but this guidance note comprises guidance for the generality of processes in the sector and careful regard should be had to it, in order to maximise consistency of permits as appropriate.

Site specific BAT/ BATNEEC

Who is affected

- 1.6 This guidance is for:
 - regulators: who must have regard to the guidance when determining applications and reviewing extant authorisations and permits
 - operators: who are best advised also to have regard to it when making applications, and in the subsequent operation of their process
 - members of the public: who may be interested to know what the Government considers (in accordance with the legislation) amounts to appropriate conditions for controlling air emissions for the generality of processes in this particular industry sector

1. The term "process(es)" is used in the remainder of the note to mean both "processes" under the Industrial Pollution Control (NI) Order and "installations" and "activities" under the Environment (NI) Order 2002.
2. BATNEEC is the formulation used in the Industrial Pollution Control (NI) Order and BAT is used in the Environment (NI) Order 2002. For the purposes of this guidance note, the two concepts are regarded as having essentially the same effect.
3. In accordance with Part 2 of Schedule 3 to the PPC (NI) Regulations, SR 2003/46: timber and wood-based products processes transfer from regulation under the 1997 Order to the 2002 Order from 1 April 2005.
4. Guidance on the relationship between BAT/BATNEEC and air quality objectives is contained in the General Guidance Manual on policy and procedures for Part C installations

- 1.7 The guidance is based on the state of knowledge and understanding at the time of writing of:
- processes for the manufacture of timber and wood-based products
 - their potential impact on the environment ; and
 - what constitutes BAT/ BATNEEC for preventing and reducing air emissions
- 1.8 The note may be amended from time to time in order to keep abreast with developments in BAT/BATNEEC including improvements in techniques and new understanding of environmental impacts and risks. Such changes may be issued in a complete revision of this document, or in separate additional guidance notes which address specific issues. (It may not always be possible to issue amending guidance quickly enough to keep in absolute step with rapid changes, which is another circumstance where paragraph 1.5 above might apply.)
- 1.9 Steps will be taken to ensure that those who need to know about changes are informed. Operators (and their advisers) are, however, strongly advised to check with the regulator whether there have been any changes before relying on this note for the purposes of making an application under the 1997 or 2002 Orders or making any other decisions where BAT/ BATNEEC may be a consideration.

Consultation

- 1.10 This note has been produced in consultation with relevant trade bodies and representatives of regulators including members of the Industrial Pollution Liaison Committee and the NI Industrial Pollution Liaison Group.

Publication

- 1.11 This and other published guidance in this series are available, free of charge, via the Department at www.doeni.gov.uk/epd.
- 1.12 General guidance explaining policy and setting out LA-PPC policy and procedures is contained in the Department's "General Guidance Manual on Policy and Procedures for Part C Installations" available from www.doeni.gov.uk/epd and referred to in this document as the "General Guidance Manual". This is designed for operators and members of the public as well as district council regulators.
- 1.13 In addition to the General Guidance Manual referred to above, explanation or clarification of certain terms used in this sector guidance note can be found in a general guidance note issued under the Industrial Pollution Control (NI) Order 1997: "Interpretation of terms used in process guidance notes" that issued in March 1998 (NIGG4). Where there is any conflict between NIGG4 and the guidance issued in this note or in the General Guidance Manual, the latter two documents should prevail, as should any subsequent guidance issued in relation to LAPPC.

2 Timetable for compliance and reviews

Existing processes or activities

2.1 The previous guidance advised that upgrading to that standard should usually be completed by 1 January 2006 and for replacement of cyclones where necessary by 1 January 2010 for processes where the total exhaust volume air flow exceeds 300 m³/min and by 1 January 2013 in all other cases. Requirements still outstanding from any existing upgrading programme should be completed to the timescale of that programme.

Upgrading for this note

2.2 The new provisions of this note and the dates by which compliance with these provisions is expected are listed in the table below, together with the paragraph number where the provision is to be found. Compliance with the new provisions should normally be achieved by the dates shown. Authorisations/permits should be varied as necessary, having regard to the changes and the timetable.

Table 1: Compliance timetable

Provision	Paragraph / row	Compliance date
Cyclones with exhaust flows <300m ³ /min should have continuous indicative monitoring	Table 2 , row 4	31 December 2006
All other new provisions	-	To be complied with as soon as practicable, which in most cases should be within 12 months of the publication of this note

2.3 Replacement plant should normally be designed to meet the appropriate standards specified for new installations or activities.

Relaxation of conditions

2.4 Where provisions in the preceding guidance note have been deleted or relaxed, authorisations should be varied as necessary as soon as reasonably practicable. [Section 7](#) provides a summary of all changes.

New processes or activities

2.5 For new processes or activities, the authorisation/permit should have regard to the full standards of this guidance from the first day of operation.

Substantially changed processes or activities

2.6 For substantially changed processes or activities, the authorisation/permit should normally have regard to the full standards of this guidance with respect to the parts of the process that have been substantially changed and any part of the process affected by the change, from the first day of operation.

Permit reviews

Reviewing permits

2.7 Under LAPC the requirement is to review conditions in authorisations at least every four years. (Article 6(6) Industrial Pollution Control (NI) Order 1997).

2.8 Under LAPPC the legislation requires permits to be reviewed periodically but does not specify a frequency. It is considered for this sector that a frequency of once every six years ought normally to be sufficient for the purposes of Regulation 15(1) of Pollution Prevention and Control Regulations (NI) 2003.

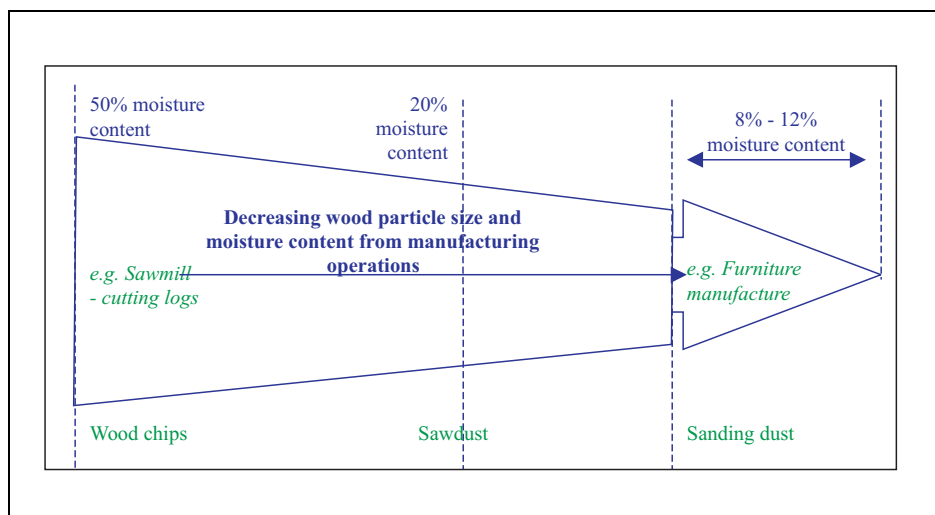
More frequent review may be necessary in individual cases for the reasons given in Regulation 15(2). Further guidance on permit reviews is contained in the General Guidance Manual available on www.doeni.gov.uk/epd. Regulators should use any opportunities to determine the variations to authorisations/permits necessitated by paragraph 2.2 above in conjunction with these reviews.

- 2.9 Under both LAPC and LAPPC, conditions should be reviewed where complaint is attributable to the operation of the process and is, in the opinion of the regulator, justified.

3 Process description

- 3.1 Manufacture of timber and wood-based products processes/installations are prescribed for:
- **Local air pollution control**, LAPC, under section 6.7 of Schedule 1 to the IPC (Prescribed Processes and Substances) Regulations 1998, SR 28
 - **Local air pollution prevention and control**, LAPPC, under section 6.6 of Schedule 1 of the Pollution Prevention and Control Regulations (NI) 2003 SR 46
- 3.2 This note refers to the manufacture of products wholly or mainly of wood at any works if the process involves the sawing, drilling, sanding, shaping, turning of wood and the throughput of the works in any 12 month period is likely to exceed -
- 10,000 cubic metres, in the case of works at which wood is sawn but at which wood is not subjected to any other relevant process or is subjected only to relevant processes which are exempt processes; or
 - 1,000 cubic metres in any other case.
- 3.3 Reference to wood particles in this PG note includes wood powder, wood dust, wood chips and sawdust. Composite material such as chipboard and MDF (medium density fibreboard) which comprise mainly of wood are included in this note.
- 3.4 The processes covered by this PG note range from sawmills cutting sawn logs to the manufacture of furniture where, for example, MDF is worked.
- 3.5 The size range and moisture content of wood particles consequently varies widely between operators who are covered by this PG note. **Figure 3.1** illustrates moisture content and particle size variation. (It should NOT be taken that sawmills produce only large particles and furniture manufacturers produce only fine particles.)

Figure 3.1: Moisture content and particle size variation



3.6 Examples of equipment used within the industry sector are given below.

(a) Mechanised sawmills - typical machine types.

Primary conversion (softwood logs to sawn timber)

- de-barking machines
- chipper canters
- reducer bandsaws
- band mills (bandsaws)
- double slabbers
- edgers
- resaws; and
- cross-cut saws

Secondary processing

- kilns
- planer/moulders
- treatment plants

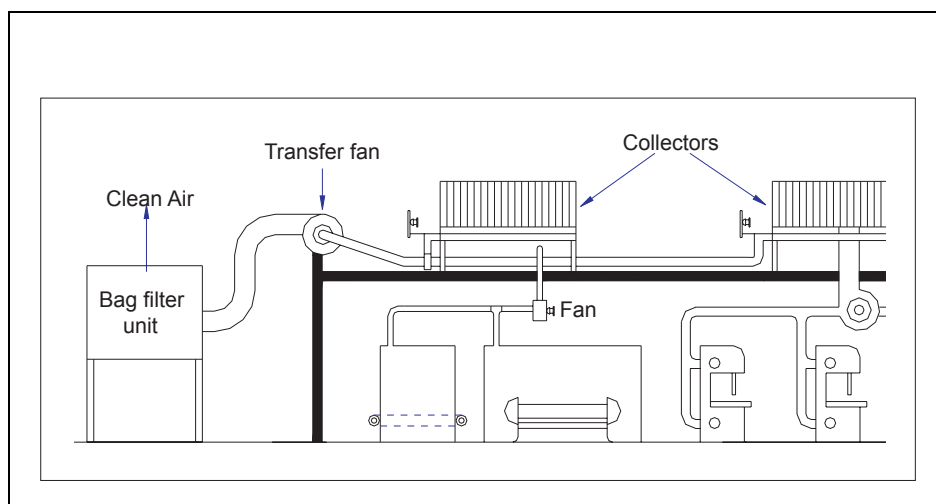
(b) Sawmills which process hardwood logs are less complex and in general utilise far fewer machine types. Machine types found in UK hardwood sawmills typically include:

- bandsaws
- re-saws
- sanding machines
- edgers; and
- cross-cut saws

Particles produced during this type of hardwood conversion are sawdust, rather than large wood chips.

3.7 **Figure 3.2** below illustrates a typical dust extraction system within the timber industry.

Figure 3.2: Typical dust extraction system (reproduced with permission of HSE)



4 Potential releases

- 4.1 The key emissions from these processes/activities that constitute pollution for the purposes of the Industrial Pollution Control (NI) Order or the Pollution Prevention and Control Regulations (NI) 2003 and therefore warrant control are those consisting of particulate matter.
- 4.2 The following parts of the process may give rise to particulate matter in the form of dust:
 - machining operations, for example, sawing, drilling, sanding, shaping, turning, and planing
 - transfer of wood particles created by sawing/machining operations, for example into holding areas or vehicles
 - size reduction operations, for example, granulation of wood offcuts
 - stockpiles, for example, woodchips
 - arrestment plant outlets, for example, cyclones and bag filtration units
 - bagging of sawdust / wood chips from arrestment plant outlet points
 - skips or containers where sawdust / wood chips are stored on site, for example, prior to removal from site

5 Emission limits, monitoring and other provisions

- 5.1 The emission limit values and provisions described in this section are achievable using the best available techniques described in [Section 6](#). Monitoring of emissions should be carried out according to the method specified in this section or by an equivalent method agreed by the regulator. (See Ref. [\(e\)](#) (M1) and Ref. [\(f\)](#) (M2))

When calculating the exhaust volume air flow, any part which is re-circulated into the workplace should not be included. i.e. these controls are only concerned with emissions to external atmosphere. In some cases re-circulation may be undertaken only for part of the year, and regulators may want to take this into account. N.B. Where air is re-circulated, this should be taken account of in the assessment and maintenance etc requirements of the Control of Substances Hazardous to Health (COSHH) Regulations.

Table 2: Emission limits, monitoring and other provisions

Row	Total particulate matter	Emission limits / provisions	Type of monitoring	Monitoring frequency
1	Whole Site	No visible emission	Visual observations Particular attention should be paid to areas where vehicles are filled with wood waste and wood dust.	On start-up, and on at least two more occasions during the working day
2	Arrestment plant (not cyclones) designed with exhaust flow rate >300 m ³ /min	No visible emission	Visual observations	On start-up, and on at least two more occasions during the working day.
3	Arrestment plant (not cyclones) designed with exhaust flow rate <300 m ³ /min	No visible emission	Visual observations	At least daily
4	Cyclones	No visible emission	Continuous indicative monitoring devices with visual and audible alarms which activate on cyclone malfunction and which indicate e.g. blockages. (Data logging should not normally be necessary). (Cyclones to be replaced before the final date for upgrading should normally be exempt from this requirement.)	Continuous to show arrestment equipment is functioning correctly.
5	Combustion processes (refer to paragraph 5.4)	No visible smoke and not exceed Ringlemann Shade 1 as described in BS 2742:1969	Visual observations	On start-up, and on at least two more occasions during the working day

Row	Droplets, persistent mist and fume	Emission limits / provisions	Type of monitoring	Monitoring frequency
6	All emissions to air (other than steam or condensed water vapour) (refer to paragraph 5.4)	no droplets, no persistent mist, and no persistent fume	Visual observations	On start-up, and on at least two more occasions during the working day

Monitoring, investigations and recording

- 5.2 The need for and scope of testing, and the frequency and time of sampling depend on local circumstances, operational practice and the scale of operation. As part of proper supervision the operator will monitor emissions, make tests and inspections of the process and keep records, in particular:
- ▶ The operator should keep records of inspections, tests and monitoring, including all non-continuous monitoring, inspections and visual assessments. The records should be:
 - kept on site
 - kept by the operator for at least two years; and
 - made available for the regulator to examine

Information required by the regulator

- 5.3 The regulator needs to be informed of monitoring to be carried out and the results; the results should include process conditions at the time of monitoring.
- ▶ The operator should provide a list of key arrestment plant and should have a written procedure for dealing with its failure, in order to minimise any adverse effects.
 - ▶ The operator should notify the regulator at least 7 days before any periodic monitoring exercise to determine compliance with emission limit values. The operator should state the provisional time and date of monitoring, pollutants to be tested and the methods to be used.
 - ▶ The results of non-continuous emission testing should be forwarded to the regulator within 8 weeks of the completion of the sampling.
 - ▶ Adverse results from **any** monitoring activity (both continuous and non-continuous) should be investigated by the operator as soon as the monitoring data has been obtained/received. The operator should:
 - identify the cause and take corrective action
 - record as much detail as possible regarding the cause and extent of the problem, and the action taken by the operator to rectify the situation
 - re-test to demonstrate compliance as soon as possible; and
 - notify the regulator

Visible emissions

- 5.4 Visible emissions should be limited and monitored as follows. Abnormal emissions require action as described in paragraph 5.5.
- ▶ Emissions from combustion processes should in normal operation be free from visible smoke and in any case should not exceed the equivalent of Ringelmann Shade 1 as described in British Standard BS 2742:1969. All reasonably practicable steps should be taken to minimise the duration and visibility of emissions during start-up and shut down, and changes of fuel or combustion load.
 - ▶ Visual assessments of external emission points should be made on at least three occasions throughout the day (if no illumination, this should be done during daylight hours). One of these assessments should be carried out at the start-up of the plant, and if there are multiple shifts involving start up it is preferable that the 3 visual assessments are all undertaken at start-up. These assessments are not likely to be needed where continuous indicative monitors are installed in accordance with paragraph 5.7. The time, location and result of these assessments should be recorded.
 - ▶ Visual assessments of fugitive sources of dust emissions should be made at start up and on at least two occasions during the day.
 - ▶ Where, in the opinion of the regulator, there is evidence of airborne dust/particulate matter from the process off the site, the operator should make their own inspection and assessment, and where necessary undertake ambient monitoring with the aim of identifying those process operations giving rise to the dust/particulate matter.

The monitoring may either be by a British Standard method or by a method agreed with the regulator. In these situations, determination of wind direction may be required. Once the source of the emission is known, corrective action should be taken without delay.

- ▶ All releases to air, other than condensed water vapour, should be free from persistent visible emissions.
- ▶ All emissions to air should be free from droplets.

Abnormal events

5.5 The regulator needs to be notified about certain events, whether or not there is related monitoring showing an adverse result, and the operator should respond to problems which may have an adverse effect on emissions to air.

- ▶ In the case of abnormal emissions, malfunction or breakdown leading to abnormal emissions the operator should:
 - investigate and undertake remedial action **immediately**
 - adjust the process or activity to minimise those emissions; and
 - promptly record the events and actions taken
- ▶ The regulator should be informed without delay:
 - if there is an emission that is likely to have an effect on the local community; or
 - in the event of the failure of key arrestment plant, for example, bag filtration plant or cyclones (where cyclones remain acceptable)

Continuous monitoring

5.6 Continuous indicative monitoring can be used as a management tool. It identifies any trends in emissions; for example, that emissions are gradually increasing, which may indicate a need for maintenance. It can also be used with or without continuous recording to trigger an alarm when there is a sudden increase in emissions; for example, if arrestment plant fails. For a given concentration of particulate matter, the output level varies with the instrument. It should be noted that not all monitors provide a linear response to an increase in particulate matter. The monitor should be set up to provide a baseline output when the plant is known to be operating under the best possible conditions; i.e. such that emissions are fully compliant with the requirement - no visible emission. The alarms are activated in response to any significant increase in particulate loading above the baseline, so that warning of the changed state is given before an unacceptable emission occurs.

5.7 Where continuous indicative monitoring is required, it should be carried out as follows:

- ▶ All continuous monitoring readings should be on display to appropriately trained operating staff.
- ▶ Instruments should be fitted with audible and visual alarms, situated appropriately to warn the operator of arrestment plant failure or malfunction.
- ▶ All continuous monitors should be operated, maintained and calibrated (or referenced) in accordance with the manufacturers' instructions, which should be made available for inspection by the regulator. The relevant maintenance and calibration (or referencing) should be recorded.
- ▶ All new continuous monitoring equipment should be designed for less than 5% downtime over any 3-month period.
- ▶ All continuous indicative monitoring instruments should be checked daily, for example by zero checking and confirmation of continued satisfactory operation. Regulators should consider whether it is appropriate in cases where continuous indicative monitoring is required, to specify continuous recording.

Arrestment plant maintenance

5.8 Regular maintenance is key in ensuring continued satisfactory operation of arrestment plant. A filter maintenance programme (which might, for example, propose replacement of all filter media once every 4 years, or replacement of 25% of filter media annually) or the use of automatic data logging from continuous indicative monitoring of the arrestment plant emissions is required. Suitable continuous indicative monitoring devices may include optical instruments or particle impingement instruments, which should be attached to data logging equipment.

Fabric filters

- ▶ A filter maintenance programme showing the timetable for replacement of filter media should be submitted to the regulator for approval.
- ▶ Where process exhausts are fitted with a suitable continuous indicative monitoring device attached to data logging equipment the data can be used as an alternative to the filter maintenance programme to instigate the replacement of filter media.
- ▶ Filter media should be replaced as follows:
 - (a) as necessary to ensure no visible emission from the process; and
 - (b) in accordance with the approved filter maintenance programme or if data logging equipment is being used when the results show an unacceptable deterioration in filter media efficiency.
- ▶ Details of filter media replacement should be recorded (refer to paragraph 5.2).

Table 3: Filter maintenance programme

Row	Arrestment plant exhaust flow rate design capacity	Inspection and replacement frequency
1	Where arrestment plant is designed with exhaust flow rate > 300 m ³ /min	<ul style="list-style-type: none"> • Visual assessments of emission points on start-up, and on at least two more occasions during the working day (Table 2, Row 2) and visual inspection of the arrestment plant at least once a month • Routine replacement of filter media every 4 years (Note 1) unless continuous indicative monitoring provides evidence that such regular replacement is unnecessary, in which case replacement of defective filter media as found necessary and supported by the monitoring evidence
2	Where arrestment plant is designed with exhaust flow rate < 300 m ³ /min	<ul style="list-style-type: none"> • Visual assessments of emission points at least daily (Table 2, Row 3) and visual inspection of the arrestment plant at least once a month. • Replacement of defective filter media as necessary • Routine replacement of filter media every 4 years (Note 1)

Note 1 - Less frequent replacement may be appropriate for filters which are used only on an irregular basis or where practice shows that 4 yearly replacement is unnecessarily frequent.

Cyclones

5.9 The use of cyclones should only be permitted in accordance with paragraph 6.3. (Refer to Table 2 for emission limits/provisions and monitoring provisions).

Varying monitoring frequency

5.10 The monitoring that is required is to demonstrate correct functioning of the arrestment plant. In this context it is not appropriate that reduced monitoring be applied.

5.11 Exhaust flow rates should be consistent with efficient capture of emissions, good operating practice and meeting the requirements of the legislation relating to the workplace environment.

5.12 The frequency of monitoring should be increased, for example, as part of the commissioning of new or substantially changed processes, or where emission levels are near to or approach the emission limits.

6 Control techniques

Summary of best available techniques

6.1 The following table provides a summary of the best available techniques that can be used to control the process in order to meet the emission limits and provisions in [Section 5](#). Provided that it is demonstrated to the satisfaction of the regulator that an equivalent level of control will be achieved, then other techniques may be used.

Table 4: Summary of control techniques

Release source	Substance	Control techniques
Whole train of process equipment	Particulate matter	Containment policy i.e. containment at source (refer to paragraph 6.4)
Machining operations i.e. sawing, drilling, sanding, shaping, turning		Arrestment plant - bag filters (usually preferred - refer to Table 1 and paragraph 6.3) - cyclones
Transfer and handling of wood dust and wood particles		Containment - pneumatic or enclosed handling systems - enclosed containers - enclosed transfer points ducted to arrestment plant
Trailers and other transport		Containment - enclosed trailers - correct management of vehicle filling operations - minimise vehicle movement where possible
External operations, e.g. - debarking - arrestment outlets - conveyors - loading and unloading operations - conveyor drop points		Appropriate siting and site layout - away from residential areas - away from other sensitive locations - reduce drop heights to a minimum - screened storage areas

Techniques to control emissions from contained sources

6.2 Particulate matter i.e. wood dust and wood particles that may become wind-entrained should be collected and ducted to suitable arrestment plant. All arrestment plant should be designed to prevent visible emissions (See [Table 2](#)).

Arrestment plant

6.3 Two types of arrestment plant commonly used in the timber / wood processing industry are;

- fabric filters; and
- cyclones

In most circumstances fabric filters of an appropriate specification or a combination of cyclones in line with fabric filters, or cyclo-filters should be fitted in preference to cyclones as they are significantly more efficient for the control of emissions of wood particles.

However, as the moisture content of the material processed increases fabric filters will begin to clog, reducing both their efficiency and lifespan, and requiring more maintenance.

Cyclones may remain acceptable in the following scenarios:

- (a) in circumstances when wood is processed for which the water content is above 20% of the solid content by weight, the particulate matter produced tends to be large wood particles and the high water content may damage filter fabric. In these circumstances cyclones are likely to remain acceptable, provided that no other timber is worked, or provided that only very minor amounts of such timber are worked on an occasional basis;
- (b) in cases where arrestment plant only serves operations which produce emissions mainly comprising large particles; and
- (c) in cases where a process is undertaken at a location well away from housing or other populated areas.

Automatic shut down of arrestment plant in the event of malfunction / blockage should be considered.

Techniques to control fugitive emissions

Materials handling

- 6.4 Effective containment at source will minimise fugitive emissions. A policy of containment at source should be used, (subject to consideration of dust explosion risk as advised by the guidance of the Health and Safety Executive), to prevent particulate matter emissions from the buildings or site.
- ▶ The transportation and handling of wood dust and wood particles should be carried out using pneumatic or enclosed handling systems. Such systems should be visually inspected regularly to identify damaged or worn ductwork and any build up of wood dust or wood particles around ducting, for example, on the floor, in gutters or on other equipment should be removed and the source of the fugitive emission repaired.
 - ▶ Displaced and transport air from automated handling systems should be vented to suitable arrestment plant.
 - ▶ Transfer points should be enclosed and ducted to suitable arrestment plant.
 - ▶ When wood dust is moved using site transport, it should be held in enclosed containers.
 - ▶ Silos for wood dust which are charged pneumatically should be vented to air through suitable arrestment plant, for example a fabric filter.
 - ▶ Storage silos and fixed containers should be equipped with audible or visual high-level alarms to warn of over filling. The correct operation and use of alarms should be checked at least once a week
 - ▶ Wood dust should be stored in silos or other enclosed containers.
 - ▶ Loading of wood dust and wood particles onto vehicles prior to removal from site should be done in such a way as to minimise the escape to air of particulate matter.
 - ▶ Waste should be removed from site in totally enclosed containers to minimise the escape to air of particulate matter. Where vehicles are filled directly from the arrestment plant, the extraction system should be turned off or a discharge pipe should be fitted with a two-way valve so that vehicles can be changed over without emissions occurring. Either vehicles should be fitted with side windows or, where these are not fitted, rotary or optical drop out sensors equipped with alarms to warn of over-filling should be used.

Spillage control

- 6.5 Adequate provision to contain spillage is needed. Closed containers can prevent wind whipping of dusty, dry material such as that collected from arrestment plant. A key aspect of this sector is the potential for emission from the storage of wood dust and wood particles prior to removal from the site. Wood dust and wood particles are usually stored in silos or in moveable containers, for example, trailer vehicles.
- ▶ All spillages should be cleared as soon as possible by vacuum cleaning, wet methods, or other appropriate techniques. Dry sweeping of dusty spillages should not be permitted
 - ▶ A high standard of housekeeping should be maintained.

Air quality**Ambient air quality management**

- 6.6 In areas where air quality standards or objectives are being breached or are in serious risk of breach and it is clear from the detailed review and assessment work under Local Air Quality Management that the Part C process itself is a significant contributor to the problem, it may be necessary to impose tighter emission limits. If the emission limit that is in danger of being exceeded is not an EC Directive requirement, then industry is not expected to go beyond BATNEEC/BAT to meet it. Decisions should be taken in the context of a district council's Local Air Quality Management action plan. For example, where a Part C process is only responsible to a very small extent for an air quality problem, the council should not unduly penalise the operator of the process by requiring disproportionate emissions reductions. More guidance on this is provided in the revised Local Air Quality Management Technical Guidance, LAQM. TG (03) and in the Environment (NI) Order 2002 Local Air Quality Management Policy Guidance. Both of these documents are available from the Environment and Heritage Service website www.ehsni.gov.uk.
- 6.7 Correct design of process exhausts is important in the control of emissions to air.
- ▶ Process vents should not be fitted with any restriction at the final opening such as a plate, cap or cowl, with the exception when such a device forms an integral part of the correct operation of arrestment plant, for example, in the case of a cyclone.

Management**Management techniques**

- 6.8 Important elements for effective control of emissions include:
- proper management, supervision and training for process operations;
 - proper use of equipment
 - effective preventative maintenance on all plant and equipment concerned with the control of emissions to the air; and
 - it is good practice to ensure that spares and consumables are available at short notice in order to rectify breakdowns rapidly. This is important with respect to arrestment plant and other necessary environmental controls. It is useful to have an audited list of essential items
- ▶ Spares and consumables - in particular, those subject to continual wear - should be held on site, or should be available at short notice from guaranteed local suppliers, so that plant breakdowns can be rectified rapidly.

Appropriate management systems

6.9 Effective management is central to environmental performance; It is an important component of BAT and of achieving compliance with permit conditions. It requires a commitment to establishing objectives, setting targets, measuring progress and revising the objectives according to results. This includes managing risks under normal operating conditions and in accidents and emergencies. It is therefore desirable that processes put in place some form of structured environmental management approach, whether by adopting published standards (ISO 14001 or the EU Eco Management and Audit Scheme [EMAS]) or by setting up an environmental management system (EMS) tailored to the nature and size of the particular process. Operators may also find that an EMS will help identify business savings.

Regulators should use their discretion, in consultation with individual operators, in agreeing the appropriate level of environmental management. Simple systems which ensure that LAPC considerations are taken account of in the day-to-day running of a process may well suffice, especially for small and medium-sized enterprises. While authorities may wish to encourage wider adoption of EMS, it is outside the legal scope of an LAPC authorisation/LA-PPC permit to require an EMS for purposes other than LAPC/LA-PPC compliance. For further information/advice on EMS refer to EMS Additional Information in [Section 8](#).

Training

6.10 Staff at all levels need the necessary training and instruction in their duties relating to control of the process and emissions to air. In order to minimise risk of emissions, particular emphasis should be given to control procedures during start-up, shut down and abnormal conditions.

Training may often sensibly be addressed in the EMS referred to above.

- ▶ Training of all staff with responsibility for operating the process should include:
 - awareness of their responsibilities under the authorisation / Permit; in particular; notification to regulator in accordance with paragraph [5.5](#), for example, bag breakage, arrestment plant failure, bag inspection procedures and start-up - shut down procedures
 - minimising emissions on start up and shut down
 - action to minimise emissions during abnormal conditions
- ▶ The operator should maintain a statement of training requirements for each operational post and keep a record of the training received by each person whose actions may have an impact on the environment. These documents should be made available to the regulator on request.

Maintenance

6.11 Effective preventative maintenance should be employed on all aspects of the process including all plant, buildings and the equipment concerned with the control of emissions to air. In particular:

- ▶ A written maintenance programme should be provided to the regulator with respect to pollution control equipment; and
- ▶ A record of such maintenance should be made available for inspection.

7 Summary of changes

Reasons for the main changes are summarised below.

Table 5: Summary of changes

Section / Paragraph / Row	Change	Reason	Comment
Control techniques			
Table 2, row 4	Cyclones with exhaust flow rate <math><300\text{m}^3/\text{min}</math> should have continuous indicative monitoring	To provide indication of malfunction	
6.10	The operator should maintain a statement of training requirements for each operational post and keep a record of the training received by each person whose actions may have an impact on the environment. These documents should be made available to the regulator on request.	Good management practice.	
6.11	A written maintenance programme should be provided to the regulator with respect to pollution control equipment	Good management practice which should ensure preventative maintenance is properly considered and planned. Preventative maintenance protects against incidents due to plant failure.	

8 Definitions and further information

This guidance	Process Guidance Note NIPG 6/2 (Version 2)
Previous guidance	Process Guidance Note NIPG 6/2 (Version 1)
LAPC	explained in the Introduction of this guidance
LAPPC	explained in the Introduction of this guidance
Permit	the written permission to operate an installation prescribed for LAPPC – (the replacement for authorisation under LAPC)
Authorisation	the written authority to operate a process prescribed for LAPC - (will be replaced by permit under LAPPC)
Existing process	should be taken to have the following meaning: <ul style="list-style-type: none">• a process which was being carried on at some time in the 12 months immediately preceding the first day of the month following publication of this guidance note;• a process which is to be carried on at a works, plant or factory or by means of mobile plant which was under construction or in the course of manufacture or in the course of commission on the first day of the month following publication of this guidance note, or the construction or supply of which was the subject of a contract entered into before that date.
New process	not an existing process.
Installation	should be interpreted in accordance with the guidance contained in the General Guidance Manual on Policy and Procedures for Part C installations
Process	the term "process" has been used in this guidance note to refer to both "processes" under the Industrial Pollution Control (NI) Order 1997 and "installations" under the Environment (NI) Order 2002.

Health and safety

Operators of processes and installations must protect people at work as well as the environment:

- requirements of a permit or authorisation should not put at risk the health, safety or welfare of people at work
- equally, the permit or authorisation must not contain conditions whose only purpose is to secure the health of people at work. That is the job of the health and safety enforcing authorities

Where emission limits quoted in this guidance conflict with health and safety limits, the tighter limit should prevail because:

- emission limits under the Industrial Pollution Control (NI) Order 1997 or the Environment (NI) Order 2002 relate to the concentration of pollutant released into the air from prescribed activities
- exposure limits under health and safety legislation relate to the concentration of pollutant in the air breathed by workers
- these limits may differ since they are set according to different criteria. It will normally be quite appropriate to have different standards for the same pollutant, but in some cases they may be in conflict (for example, where air discharged from a process is breathed by workers). In such cases, the tighter limit should be applied to prevent a relaxation of control

EMS additional information

Further information/advice on EMS may be found from the following:

- Envirowise at www.envirowise.gov.uk and www.energy-efficiency.gov.uk and Environment and Energy Helpline freephone 0800 585794
- ISO 14001 www.bsi.org.uk or telephone BSI information centre (020 8966 7022)
- EU Eco Management and Audit Scheme (EMAS) www.emas.co.uk or telephone the Institute of Environmental Management and Assessment (01522 540069)

Regulators and process operators may also like to be aware of:

BS 8555: a new standard to help SMEs implement an EMS, by offering a five-phase approach, is contained in BS 8555 which was published in 2003 following on from work undertaken by the Acorn Trust. The Institute of Environmental Management and Assessment, which has taken over the Trust's activities, is developing a scheme of accredited recognition for companies achieving different phases of BS 8555. BS 8555 can be used to achieve ISO 14001 and registration to the higher standard, EMAS.

Some of the **High Street banks**, such as NatWest and the Coop, now offer preferential loan rates to organisations that can demonstrate they are committed to improving their environmental performance. The NatWest also produce a self help guide for SMEs, 'The Better Business Pack', focusing on waste, utilities, transport and supply chain issues. It gives tools, guidance and examples. Contact: WWF-UK on 01483 426444.

References

- (a) The Department's guide on LAPPC "General Guidance Manual on Policy and Procedures for Part C Installations", September 2003- available from the Department at www.doeni.gov.uk/epd.
- (b) Section 10 of NIGG2 "Authorisations" (issued March 1998) provides further advice on the assessment of odour
- (c) Current air quality objectives are specified in: The Air Quality (NI) Regulations 2003 (2003 No 342)
- (d) HMIP Technical Guidance Note D1: "Guidelines on Discharge Stack Heights for Polluting Emissions", published by The Stationery Office, ISBN 0-11-752794-7.
- (e) M1 Sampling requirements for monitoring stack emissions to air from industrial installations, Environment Agency July 2002 ([EA website](#))
- (f) M2 Monitoring of stack emissions to air. Environment Agency May 2003 ([EA website](#))

Web addresses

Web-site of the Department's Environmental Policy Division: www.doeni.gov.uk/epd

Web-site of the Department's Environment and Heritage Service: www.ehsni.gov.uk/

Energy saving and environmental management measures can increase industry profits. Envirowise (formerly ETBPP) show how at www.envirowise.gov.uk (or freephone 0800 585794).

Appendix 1: Extract from Pollution Prevention and Control Regulations (NI) 2003, 2003 No 46

DEFINITION OF TIMBER ACTIVITIES IN SCHEDULE 1 TO THE POLLUTION PREVENTION AND CONTROL REGULATIONS (NI) 2003, 2003 No 46*.

(The processes for district council air pollution prevention and control are listed under "Part C". The "Part A" and Part "B" processes are for Chief Inspector control.)

SECTION 6.6

TIMBER ACTIVITIES

Part A

(a) Curing, or chemically treating, as part of a manufacturing process, timber or products wholly or mainly made of wood if any substance listed in paragraph 13 of Part 2 of this Schedule is used.

Part B

Nil.

Part C

(a) Unless falling within Part A of Section 6.1, manufacturing products wholly or mainly of wood at any works if the activity involves the sawing, drilling, shaping, turning, planing, curing or chemical treatment of wood ("relevant activities") and the throughput of the works in any period of 12 months is likely to be more than -

- (i) 10,000 cubic metres, in the case of works at which wood is sawed but at which wood is not subjected to any other relevant activities or is subjected only to relevant activities which are exempt activities; or
- (ii) 1,000 cubic metres in any other case.

Interpretation of Part C

In this Part -

"relevant activities" other than sawing are "exempt activities" where, if no sawing were carried out at the works, the activities carried out there would be unlikely to result in the release into the air of any substances listed in paragraph 12 of Part 2 of this Schedule in a quantity which is capable of causing significant harm;

"throughput" shall be calculated by reference to the amount of wood which is subjected to any of the relevant activities, but where, at the same works, wood is subject to two or more relevant activities, no account shall be taken of the second or any subsequent activity;

"wood" includes any product consisting wholly or mainly of wood; and

"works" includes a sawmill or any other premises on which relevant activities are carried out on wood.

*Every effort has been taken to ensure that this Appendix is correct at the date of issue of this Note, but readers should note that the Regulations are likely to be subject to periodic amendment, and this Appendix should not therefore be relied upon as representing the up-to-date position after the issue date.