



Description of the Paper by Nature Certification Process

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1 - General Presentation of the PAPER BY NATURE Certification System

This Association is constituted in compliance with the provisions of title I of the Belgian Law of June 27, 1921 on non-profit associations, foundations and international non-profit associations. Founder members are MECSEA, FEPE, Arjowiggins, Stora Enso, UPM-Kymmene.



The Paper by Nature Eco-label applies to the product group “converted paper products”. It shall comprise any converted product made of paper, paper board or paper based substrates. Examples of eligible items include envelopes and other paper stationery, exercise books, pads, drawing paper sheets, drawing pads, albums, diaries, binders, folders, manila products, suspension files, lever arch files, cutsize paper and reams. Inserts, covers and any printed paper part of the final converted paper product are included in the scope. If different printing/converting technologies are used, each technology must fulfil the criteria specific for that technology.

It takes into account the potential environmental impacts of the product:

- Raw materials: The Eco-label includes criteria concerning responsible forest management and paper manufacturing.
- Converting process: The Eco-label includes criteria concerning most environmental impacts that are potentially generated by the paper converting process: energy saving, reduction of emissions to water and air and limitation of the use of substances during processing that are harmful to the environment.

The technical criteria shall be reviewed at least every five years by the General Assembly.

The Eco-label shall be in compliance with the ISO 14020 standard that establishes guiding principles for the development and use of environmental labels and declarations.

The Ecolabel shall be awarded by an accredited certification body that shall be designated by the Board of Directors.

The Board of Directors shall designate the certification body after invitation for offers according to specifications that shall be defined by the General Assembly. The certification



body shall be designated for a period of two years. Please refer to the *Accreditation Procedure* on this subject.

2 - Description of the Certification Process

Application for obtaining the Paper by Nature Eco-label can only be made by a company that is an effective or an adherent member of the Association, willing to apply for certification. Please refer to the *Accreditation Procedure* on this subject.

The company will be audited by an accredited certification body. After the assessment of the applicant company's audit report, the certification body will deliver a Certificate of Compliance (for the company) to the Paper by Nature Association.

The Paper by Nature Association will then sign a Paper by Nature Brand License Contract with the company and will grant the company a license number that will be managed by the Paper by Nature Association. The Paper by Nature Association will also deliver one or several Paper by Nature Eco-label Certificates of Compliance to the Company.

Eco-label certification shall be reviewed as follows:

- The certification shall be reviewed every three years as from the date it has been awarded. This review shall cover the whole set of criteria.
- Besides, the fulfilment of criteria regarding fibres content (as expressed in the Appendix of the internal document *Paper by Nature Eco-label*) shall be documented and sent to the auditing body every year.



3 - Paper by Nature Certification Audit

3.1 - Certification Audit Programme

In due course, the certification body will give to the applicant company a forward-looking intervention programme which specifies the applicant company's organization elements which will be undergoing assessment as well as a timetable of the interventions. In order to avoid disrupting the company's operations, this programme could be reconsidered afterwards, according to its coherence with the organization of operations and availability of the people that the auditors want to meet with.

In case the documentary review or the preliminary audit showed numerous dysfunctions that could not be corrected before the certification audit and would put the certification process at risk, the applicant company could ask the certification body to postpone the audit so as to put itself in conformity. This request should nevertheless be presented within reasonable time previous to the planned audit.

3.2 - Initial Audit Realisation

The initial audit consists in checking that the applicant company is in line with all the requirements of the Paper by Nature criteria (defined in the document *Paper by Nature Eco-label*). This will determine the granting of an Attestation of Compliance.

3.2.1 - Opening Meeting

The audit starts by a meeting during which the Audit Manager confirms the certification extent, presents the audit course and confirms the audit programme according to the latest changes that the applicant company may perhaps wish to bring.

The presence of the applicant company's managers and heads of departments is necessary during that meeting so that they can clearly understand the audit processes and be able to inform their staff.



3.2.2 - Course of the Audit

The on-site audit is carried out through interviews with staff during which the Audit Manager assesses whether the measures outlined in the Paper by Nature eco-label management system (or in the Manual of Quality & Environment), are implemented at all the company levels.

To do so, the Audit Manager will make sure that the modus operandi and processes are in accordance with the requirements of the Paper by Nature criteria (defined in the document *Paper by Nature Eco-label*) and, where necessary:

- That a list of products together with their composition (nomenclature) is available;
- That procedures have been set up to describe these activities;
- That the corresponding records are kept properly.

In addition and in order to have an overview of the Paper by Nature management system effectiveness, the Audit Manager analyses one or more shop packets, browses the company's history and checks that the management system in place is compliant with the Paper by Nature criteria, together with the products' compositions.

The auditor has the right and duty to look beyond the documents and to check any information they want if there is a lack of clarity in the documents or company's statements..

This field approach is characterized by pragmatism. It focuses on the existence of tools and management systems that are well adapted both to the company's needs in the field of risks control and to the company's constraints.

3.2.3 - Wrap-up Meeting

At the end of each audit day (or after each main stage of the audit), meetings are held so as to sum up the audit progress and synthesize the first results. The dysfunctions that may have been encountered during the day (or the stage) are analyzed thus allowing the applicant company to consider the corresponding corrective actions.

These meetings also enable to carry through an analysis of the results of the corrective actions already led, and in certain cases to close the corresponding nonconformities.

3.2.4 - Final Meeting

The Audit Manager organizes a closing meeting at the end of the audit. As far as possible, this meeting should gather the same people as in the opening meeting.



During the final meeting, the audit results and its conclusions are presented, and the nonconformity reports are handed in, together with a copy of the audit summary.

The audit conclusions are signed by the applicant company.

The audit manager grants the applicant company with an Attestation of Compliance encompassing the audit results.

At that stage, the initial audit results only expose the observed situation and facts. They do not allow a Certificate of Compliance issuing decision.

The audit team produces a temporary initial audit report and submits it to the concerned the certification body Technical Manager. The temporary initial audit report is then reviewed by the certification body. It will then be handed in to the applicant company.

4 - Nonconformities and Corrective Actions

4.1 - Nonconformities

The dysfunctions met during the audit are commented with the applicant company representative, who can then bring complementary elements so as to analyze them in a more global context.

If the difference remains as is, it is then formalized on a nonconformity report, the original of which is left to the applicant company. The originals of these reports are signed by the company representative.

The nonconformities thus formalized always meet the 3 following criteria:

- Be objective and motivated by failure to meet a standard requirement or a disposition planned by the company;
- Be founded on proof and in no case on presumptions;
- Be understood and accepted by the Company.

From that moment, the applicant company can start implementing corrective actions to find a solution for the nonconformities. On the applicant company's request, the certification body's auditors give a decision on the admissibility of the corrective actions that it intends to start.



4.2 - Corrective actions

The nonconformity reports originals filled in by the applicant company are returned to the Audit Manager. There are three corrective action levels:

- Corrective action carried out during the audit. In that case, the nonconformity report is filled in and signed during the audit.
- Corrective action which concerns documents changes. In that case, a complementary visit is not necessary if the nonconformity report can be closed by examining the documents sent to the auditor.
- Corrective action the implementation of which should be noted on site. The complementary audit is proposed to the company. The steps taken for the solving of the differences are checked on field by the audit manager before settling the nonconformity files and issuing a complementary audit report.

The corrective actions should be implemented and settled by the audit in less than 90 days from the end of audit meeting. If that deadline is not respected, a complete reassessment can prove to be necessary.

5 - Certification

Once all the nonconformity reports are closed and the audit report is finished, the Audit Manager recommends the applicant company for certification. The case is then controlled and validated by the Technical Center of the certification body.

When the evaluation is completed and satisfactory, a Certificate of Compliance is sent to the Paper by Nature Association. One of the Pbn's board duties is too look deeper into the details of the audit in case of known issues. It reserves the right to ask for further enquiries, should any issue arise.

When the certification decision is registered by the Paper by Nature Association, the Association signs a Paper by Nature Brand License Contract with the company and grants the company a license number that will be managed by the Paper by Nature Association.



The Paper by Nature Association also delivers one or several Paper by Nature Eco-label certificates of Compliance to the Company. They specify:

- The company name.
- The applicable standard.
- The certification scope.
- The site or sites concerned with their address.

This certificate is valid for a period of three years, starting as from the date of the last day of the audit.

Nevertheless, the three years validity of the Certificate of Compliance is subject to a yearly review of the criteria regarding fibre content (as expressed in the Appendix of the internal document *Paper by Nature Eco-label*). The fulfilment of these criteria shall be documented and sent to the auditing body every year.

For certification renewals, the expiry date of the previous certificate that is taken into account.

The Technical Center of the certification body or the Paper by Nature Board may request additional information or the carrying out of further investigation on site before making a decision. Their decision can also be subject to a complementary follow-up visit on site.



Appendix: Paper by Nature Standard

	Criteria	Assessment and verification	Comments	Conformity
Part I	SECTION A: MANDATORY REQUIREMENTS			
CRITERIA THAT APPLY TO THE PRODUCTION OF ECO-LABELLED CONVERTED PAPER PRODUCTS ONLY				
	1 SUBSTRATE			
	a) The eco-labelled converted paper product shall consist of at least 70% by weight of paper or paperboard apart from metallic constituent components	The applicant shall provide the specifications of converted paper products concerned, including the trade names, amounts and weight/m2 of the paper used. The list shall also include the names of the suppliers of the papers used.	<p>Establish the list of products together with their Paper and Paperboard composition (nomenclature)</p> <p>The environmental criteria concern the media composed of renewable vegetable fibre materials and their associated printing processes.</p> <p>Non renewable components as well as the associated printing processes (for example screen printing) are therefore not concerned. The writing media correspond to the term "Paper"</p> <p>The other media besides writing correspond to the term "Paperboard"</p> <p>Calculation of the "Paper product" proportion in the product. The (Paper + Paperboard / Total weight) ratio is to be calculated on the basis of the actual weighing of the components.</p> <p>For a family of product homogeneous in components, a theoretical calculation can be set on the basis of these components grammages and the dimensions of the product. That estimate should nevertheless be corroborated statistically by actual weightings.</p>	Yes/No
	b) Papers and paperboards used for the production of the eco-labelled converted paper shall comply with the requirements as laid down in the Appendix.	For the criterion 1.b the assessment and verification requirements set under Appendix shall apply.	<p>See appendix</p> <p>The "glassine paper" (Crystal paper) used for envelope windows is part and parcel of the product and is to be considered as "Paperboard".</p> <p>The siliconed protective band of the adhesive part is considered as packaging and the eco-label criteria do not apply to that component.</p>	Yes/No



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	Criteria	Assessment and verification	Comments	Conformity
	2 CHEMICAL PRODUCTS USED IN CONVERTING AND PRINTING PROCESSES			
	Criteria defined for “chemical additives” concern all the products implemented during processing of the product except the products used during the maintenance of the production equipment. Similarly, the making of printing forms is not concerned by these criteria. Other components used for printing on substrate other than paper and paperboard are not covered by the eco-label criteria. For example, the printing of a polypropylene cover.			
2.1	Printing inks, dyes, toners, overprinting varnishes, varnishes, adhesives, washing agents or damping solutions/ Printing inks, dyes, toners, overprinting varnishes, varnishes, adhesives, washing agents or damping solutions shall only be allowed if:	<p>The applicant shall provide a list of chemical products used in the printing house for the production of the eco-labelled converted paper products. The requirement applies to printing inks and dyes, toners, overprinting varnishes, varnishes and adhesives, washing agents and damping solutions that are used in the process. The list provided by the applicant shall include the amount, function and supplier of any chemical product used, together with the Safety Data Sheet, designed in accordance with Directive 2001/58/EC.</p> <p>For Rotogravure Printing: The applicant shall provide appropriate documentation on the recovery efficiency of the closed/encapsulated installation/recovery system, or any equivalent, that has been put in place to deal with the use of toluene in rotogravure printing processes according to the criterion 2.1.b.</p>	<p>A questionnaire listing the criteria is to be communicated to all the suppliers. The safety data sheets are available during the audit. That questionnaire should be signed by the supplier’s representative.</p> <p>The answers should be coherent with the pieces of information available in the safety data sheets.</p> <p>The latter should be managed so as to be quickly accessible by the auditor.</p>	Yes/No



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	Criteria	Assessment and verification	Comments	Conformity
	<p>2.1 a) they are not classified Dangerous to environment (N) (cf. Directive 1999/45/EC and its amendments): R50 (very toxic to aquatic organism) R50-53 (very toxic to aquatic organism and may cause long term adverse effects in the aquatic environment) R51-53 (toxic to aquatic organism and may cause long term adverse effects in the aquatic environment) R59 (dangerous for the ozone layer)</p> <p>2.1 b) they are not classified Dangerous to health (Directive 1999/45/EC and its amendments) - Toxic (T) R23 (by inhalation), R24 (in contact with skin), R25 (if swallowed), R48 (Danger of serious damage to the health by prolonged exposure). - Very toxic (T+) R 26 (by inhalation), R27 (in contact with skin), R28 (if swallowed), R39 (Danger of very serious irreversible effects) - Carcinogenic (T) R45 (may cause cancer), R49 (may cause cancer by inhalation) - Mutagenic (T) R46 (may cause heritable genetic damage). - Reprotoxic (T) R60 (may impair fertility), R61 (may cause harm to the unborn child), R62 (possible risk of impaired fertility). - Harmful (Xn) R40 (possible risk of cancer) R63 (possible risk of harm to the unborn child).</p> <p>This requirement does not apply to toluene for use in rotogravure printing processes if a closed/encapsulated installation/recovery system, or any equivalent, is in place to control and monitor;</p>			<p>Yes/No</p>



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	Criteria	Assessment and verification	Comments	Conformity
2.2	<p>Biocide products. Biocide products shall only be allowed if the active biocide component, used to counter slime-forming organisms in water-circulating systems in the printing house is not potentially bio-accumulative.</p> <p>In this context, a biocide is considered to be potentially bio-accumulative if the log Pow (log octanol/water partition coefficient) ≥ 3.0 (unless the experimentally determined BCF ≤ 100)</p>	<p>The applicant shall provide a declaration of compliance with this criterion together with the relevant Safety Data Sheet or a test report, which shall include the test method, threshold and conclusion stated. The reference test methods are the OECD 107, 117 or 305 A-E.</p>		Yes/No
2.3	<p>Washing agents. Washing agents used for cleaning in printing processes and/or sub-processes that contain aromatic hydrocarbon shall only be allowed if they are in compliance with criteria 2.1.a and 2.1.b and if:</p> <p>a) The content of aromatic hydrocarbons in the used washing agent products does not exceed 0.1 % (w/w). OR</p> <p>b) The annually used amount of the aromatic hydrocarbon-based washing agent does not exceed 10% of the total amount of washing agent used in one calendar year.</p> <p>This criterion shall not apply to toluene used as washing agent in rotogravure printing.</p>	<p>The applicant shall provide the Safety Data Sheet for each washing agent used during the year to which the annual consumption refers. The washing agent suppliers shall provide declarations of the aromatic hydrocarbon contents in the washing agents.</p> <p>A Review aromatic hydrocarbons cleaning products must to establish</p>	<p>The content of annual used aromatic carbon is estimated from the following formula applied to all the washing agents</p> $\frac{\sum_1^n \text{Content Aromatic Hydrocarbons} \times \text{Annual Used}}{\sum_1^n \text{Annual Used}}$	Yes/No
2.4	<p>Alkyl phenol ethoxylates - Halogenated solvents – Phthalates</p> <p>The following substances or preparations shall not be added to inks, glues, or washing agents or other cleaning chemicals:</p> <ul style="list-style-type: none"> - Alkyl phenol ethoxylates and their derivatives that may produce alkyl phenols by degradation. - Halogenated solvents that at the time of application are classified with risk phrases R26/27, R45, R48/20/22, R51/53, R52/53 and R59 cf. Directives 67/548/EEC, 1999/45/EC and their amendments. - Phthalates that at the time of application are classified with risk phrases R60, R61, R62, cf Directive 67/548/EEC and its amendments. 	<p>Assessment and verification:</p> <p>The applicant shall provide a declaration of compliance with this criterion.</p>		Yes/No



	Criteria	Assessment and verification	Comments	Conformity
CRITERIA THAT APPLY TO THE ENTIRE PRODUCTION ON SITE				
3	EMISSIONS			
	<p>In case all or part of the activity is subcontracted, the following criteria are applicable to the subcontractor's site. The audit of a subcontractor can focus on the entire site or on the part concerned by the subcontracting operation. The audit on the subcontractor's site will be carried out according to the environmental impact that the subcontracted activity may have. For example:</p> <ul style="list-style-type: none"> - The complete printing of a medium entails major environmental impacts: the subcontractor's audit should be carried out by the appointed auditor; - The laminating of a polyethylene film onto a medium, presents little environmental impacts. The applicant to the label "Paper by Nature" should in that case prove that he audited his subcontractor on all the criteria. The safety data sheets and proof of compliance to the environmental criteria of the chemical components should be available during the audit 			
3.1	<p>Emissions to water. a) Rinsing water containing silver from film processing, as well as from plate production, and photo-chemicals shall not be discharged to a sewage treatment plant.</p>	<p>The applicant shall provide a declaration of compliance with this criterion, together with a description of the management of photo-chemicals and silver containing rinsing water on site. If the film processing and/or the plate production is outsourced, the sub-contractor shall provide a declaration of compliance with this criterion, together with a description of the management of photo-chemicals and silver containing rinsing water at the subcontractors.</p>		Yes/No



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	Criteria	Assessment and verification	Comments	Conformity
	<p>3.1 b) Emission to water of chromium (Cr) and copper (Cu) in rotogravure printing.</p> <p>i) the amount of Cr discharged into a sewage treatment plant must not exceed 45 mg per m² of printing cylinder surface area used in the press.</p> <p>ii) the amount of Cu discharged into a sewage treatment plant must not exceed 400 mg per m² of printing cylinder surface area used in the press.</p>	<p>Discharges of Cr and Cu into the sewage shall be checked at rotogravure printing plants after treatment and before their release.</p> <p>A representative sample of Cr and Cu discharges shall be collected each month. At least one annual analytical test shall be carried out by an accredited laboratory to determine the content of Cr and Cu in a representative sub-sample of these samples.</p>	<p>The compliance with the criterion shall be assessed dividing the content of Cr and Cu, as determined by the annual analytical test, by the cylinder surface used in the press during the printing. The cylinder surface used in the press during printing is calculated by multiplying the cylinder surface ($= 2\pi rL$, where r is the radius and L the length of the cylinder) by the number of printing productions during a year (= number of different printing jobs).</p>	<p>Yes/No or N/a</p>
<p>3.2</p>	<p>Emissions to air. a) Printing processes for which no legislative measures apply to emissions to air: Volatile solvents from the drying process of heat-set offset, flexography, and rotogravure printing shall be managed by means of recovery or combustion or any equivalent system. In all cases, for which no legislative measures apply, the emissions of VOC to air must not exceed 20 mg C/Nm³.</p>	<p>The applicant shall provide a description of the system in place together with documentation and test results related to the control and the monitoring of emissions to air.</p>	<p>Whenever no legal or regulatory limit is applicable, compliance with the limit value of the VOC waste in the air of the processing is to be proved by measurement.</p>	<p>Yes/No</p>
	<p>3.2 Emissions to air. b) Rotogravure printing Equipment for reduction of emission to air of Cr⁶⁺ shall be installed. Emissions of Cr⁶⁺ to air must not exceed 15 mg/tonne paper.</p>	<p>The applicant shall provide a description of the system in place, together with a documentation related to the control and the monitoring of Cr⁶⁺ emissions. The documentation shall include the test results related to the reduction of Cr⁶⁺ emissions to the air.</p>		<p>Yes/No or N/a</p>



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	Criteria	Assessment and verification	Comments	Conformity
4	Waste Management			
	<p>The facility where converted paper products are produced shall have in place a system for handling waste, including residual products derived from the production of the eco-labelled converted paper products, as defined by local and national relevant regulatory authorities.</p> <p>The system shall be documented or explained and shall include information on at least the following procedures:</p> <ul style="list-style-type: none"> - handling, collection, separation and use of recyclable materials from the waste stream, - recovery of materials for other uses, such as incineration for raising process steam or heating, or agricultural use, - handling, collection, separation and disposal of hazardous waste, as defined by the relevant local and national regulatory authorities. 	<p>The applicant shall provide a declaration of compliance with this criterion, together with a description of the waste management system in place. Where appropriate the applicant shall provide the corresponding declaration to the local authority every year.</p>	<p>A Waste management scheme is to be set</p>	<p>Yes/No</p>



	Criteria	Assessment and verification	Comments	Number of points
Part II	SECTION B: SCORING SCHEME			
CRITERIA REFERRED TO IN FRAMEWORK, POINT 4				
A scoring has to be done for each printing process associated to one substrate, for instance one scoring for flexographic printing on paper and one scoring for sheet fed offset on paperboard.				
5	ENVIRONMENTAL MANAGEMENT SYSTEM (4 POINTS)			
	4 points shall be attributed to converted paper products produced by printing houses that are EMAS registered or ISO 14001: 2004 certified.	The applicant shall provide a declaration reporting the registration number of EMAS registration or ISO 14001:2004 certification, where relevant.		Nb of Points
6	SUBSTRATE			
	<i>Note: The number of points may be weighted proportionally if the amount of paper or paperboard in some of the cases above in the converted paper products is lower than 100%.</i>	The applicant shall provide the name of the Eco-labelling system and a declaration reporting the registration number of the eco-labelled printing paper, EMAS or ISO 14001:2004 certificates, where relevant. Appropriate documentation shall be provided to show the compliance with the requirements 6.c and 6.d for papers that are not awarded of any eco-label based on ISO standard 14024:1999 for type I environmental labels that include the same or stricter requirements as set in criteria 6.c and 6.d	The list of products applying for the label “Paper by Nature” with mention of <ul style="list-style-type: none"> • Their composition (nomenclature); • The amount of components used or, the number of items manufactured in the period of time. Should enable to assess the consumption of each “Paper” and “Paperboard” implemented in the product manufacturing. That distribution should enable to weigh the respect of the “paper” or “paperboard” criteria, and to determine the number of points applicable in the “Scoring Scheme”	



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	Criteria	Assessment and verification	Comments	Number of points
	A - PAPER PRODUCTS (4-20 POINTS)			
	A number of points up to a maximum total of 20 points shall be attributed to converted paper products that fulfil the criteria 1.a and 1.b and fall under one or more of the following cases:			
	A a) 10 points if the printing paper used in the product is awarded the EU Eco-label (according to Commission Decision 2002/741/EC establishing ecological criteria for the award of the Community Eco-label to copying and graphic paper) or the Nordic Swan Eco-label			Nb of Points
	Or	A b) 6 points if the printing paper used in the product is made of more than 50 % post-consumer recycled fibres.		Nb of Points
		A c) 6 points if the printing paper used in the product is made of virgin fibres from sustainably managed forest, of which at least 50% comes from sustainably managed forest that are certified by independent third party forest certification schemes fulfilling the criteria listed in paragraph 15 of the Council Resolution of 15 December 1998 on a Forestry Strategy for the EU and further development thereof.		
		A d) 4 points if the printing paper is produced at a paper mill that is EMAS registered or ISO 14001:2004 certified.		Nb of Points
	B - PAPERBOARD PRODUCTS (4-10 POINTS)			
	A number of points up to a maximum total of 10 points shall be attributed to converted paperboard products that fulfil the criteria 1.a and 1.b and fall under one or more of the following cases:			
	Or	B a) 6 points if the paperboard used in the product is made of more than 50 % post-consumer recycled fibres.		Nb of Points
		B b) 6 points if the paperboard used in the product is made of virgin fibres from sustainably managed forest, of which at least 50% comes from sustainably managed forest that are certified by independent third party forest certification schemes fulfilling the criteria listed in paragraph 15 of the Council Resolution of 15 December 1998 on a Forestry Strategy for the EU and further development thereof.		
		B c) 4 points if the printing paper is produced at a paper mill that is EMAS registered or ISO 14001:2004 certified.		Nb of Points



	Criteria	Assessment and verification	Comments	Number of points
CRITERIA THAT APPLY TO THE ENTIRE PAPER CONVERTING ON SITE				
7	EMISSIONS TO AIR			
7.1	<p>VOC (1-30 points) VOC (Volatile Organic Compounds) are defined as those whose Vapour pressure > 0.01 kPa at 293.15 K, or with an equivalent volatility in particular uses (e.g. the solvents in heat-set inks when heated in drying) according to Council Directive 1999/13/EC .</p> <p>Points ranging from 1 to 30 shall be attributed in proportion to the annual level of VOC contained in the chemical products purchased and used for printing processes. The calculation is made according to the equation (1).</p> <p>$A = 30 - 4.28 \times b$ Equation (1)</p> <p>Where:</p> <p>A = number of points [when $b > 6.78$ kg/tonne, A will be less than 1 and therefore no points can be attributed.]</p> <p>$b = (PVOC - RVOC) / P_{paper}$ [kg/tonnes]</p> <p>PVOC = annual total kilos of VOC contained in the purchased chemical products used for the annual total production of converted paper products</p> <p>RVOC = annual total kilos of VOC recovered from printing processes and sold, or reused</p> <p>P_{paper} = annual total tonnes of paper purchased and used for the production of converted paper products.</p>	<p>A declaration of the VOC content in alcohols, washing agents, inks, damping solutions or other corresponding chemical products shall be provided by the chemical supplier. The applicant shall provide evidence of the calculation for the parameter 'b' according to the criteria laid down above. The period for the calculations shall be based on the production during 12 months. In case of a new or a rebuilt production plant, the calculations shall be based on at least 3 months of representative running of the plant.</p>	<p>If the products nomenclature does not allow to know the consumption of components linked to printing, the global consumption of a printing process as well as its rate of corresponding VOC can be globally and annually assessed.</p> <p>Similarly concerning waste, the global waste rates may be used. This data is then kept as the standards of a substratum associated to a printing process</p>	Nb of Points



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	<p>i) <u>For heat-set offset printing with an after-burner unit in place for the drying unit</u>, where the temperature level is controlled by an automatic system connected to the printing process and the printing process is stopped in case of incorrect temperature in the after-burner: PVOC = (90% of the annual total kilos of VOC contained in damping solutions used for the annual production of converted paper products + 85% of the annual total kilos of VOC contained in washing agents used for the annual production of converted paper products).</p> <p>ii) <u>For heat-set offset printing, with an after-burner unit in place for the drying unit</u>, where the temperature level is not controlled by an automatic system connected to the printing process: PVOC = (90% of the annual total kilos of VOC contained in damping solutions used for the annual production of converted paper products + 85% of the annual total kilos of VOC contained in washing agents used for the annual production of converted paper products + 10% of annual total kilos of VOC contained in the printing inks used for the annual production of converted paper products).</p>			
	<p><i>For i) and ii), proportionately lower percentages than 90% and 85% may be used in this calculation if more than 10% or 15% of annual total kilos of VOC contained in the damping solutions or washing agents respectively used for the annual production of converted paper products can be shown to be abated in the treatment system for combusting gases from the drying process.</i></p>			
7.2	<p>Emissions from a closed recovery system (2 points) 2 points shall be attributed to the converted paper product if the percentage of toluene recovered, in the rotogravure printing processes, by means of a closed/encapsulated installation/recovery system, or any equivalent, is at least 95%.</p>	<p>The applicant shall provide appropriate documentation on the recovery efficiency of the closed/encapsulated installation/recovery system, or any equivalent, that has been put in place to deal with the use of toluene in rotogravure printing processes according to this criterion.</p>		Nb of Points or N/a
7.3	<p>Emissions from publication rotogravure printing (2 points) 2 points shall be attributed to the converted paper product produced by publication rotogravure printing if emissions of VOC to air are not above 50 mg C/Nm³</p>	<p>The applicant shall provide appropriate documentation showing compliance with this criterion.</p>		Nb of Points or N/a



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	Criteria	Assessment and verification	Comments	Number of points
8	PAPER WASTE (1 – 10 POINTS)			
	<p>a) "Paper waste" is defined as the amount of paper spillage collected and sent to recovery on annual basis. Points ranging from 1 to 10 shall be attributed to the converted paper product according to the different annual amounts of paper waste from the production produced on site.</p> <p>The number of points is calculated according to the equation (2). $Y = 10 - (0.25 \times X)$ Equation (2) Where: Y = number of points [when $X > 36$, Y will be less than 1 and therefore no points can be attributed] X = annual tonnes of paper waste produced on site, divided by annual tonnes of paper purchased and used for the production of converted paper products.</p>	<p>The applicant shall provide a description of the calculation of the paper waste, together with a declaration from the contractor collecting the paper waste from the printing house. The period for the calculations shall be based on the production during 12 months. In case of a new or a rebuilt production plant, the calculations shall be based on at least 3 months of representative running of the plant.</p>	<p>If it is not possible to know which waste paper quantity is due to the printing process, the waste paper amount can be evaluated globally and annually.</p>	Nb of Points
	<p>b) If the printing house carries out finishing operations on behalf of another printing house, the paper waste produced in these operations shall not be included in the calculation of 'X'.</p> <p>c) If the finishing operations are outsourced to another company then the amount of paper waste resulting from the outsourced work must be calculated and declared in the calculation of 'X'.</p>	<p>For compliance with criteria 8.b and 8.c the outsourcing terms and calculations on the amount of paper waste involved in the finishing operations shall be provided.</p>		



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	Criteria	Assessment and verification	Comments	Number of points
9	PREPRESS (3 – 5 POINTS)			
	Points ranging from 3 to 5 shall be attributed to the converted paper product if one or more of the following technologies are used for the image transfer to the press: If the printing form production is partially outsourced and several technologies for the prepress are used, the technology with the lowest point will determine the number of points that is awarded the converted paper product.	The applicant shall provide a description of the technology used. Information about the technology used by subcontractors for the production of the eco-labelled converted paper product shall be provided, where relevant.	3 points is awarded for a Computer To Plate (CTP) system.	Nb of Points
10	USE OF CHROMIUM FOR THE MANUFACTURE OF PRINTING FORMS FOR ROTOGRAVURE PRINTING (1 POINT)			
	1 point shall be attributed for the purchase of dissolved chromium trioxide in liquid form for the manufacture of printing forms for rotogravure printing.	A declaration or Safety Data Sheet, containing the relevant information to show compliance with this criterion shall be provided by the applicant.		Nb of Points or N/a
11	EMISSIONS OF CHROMIUM (Cr) AND COPPER (Cu) TO WATER IN ROTOGRAVURE PRINTING (1-2 POINTS)			
	a) 1 point shall be attributed to the converted paper product if the amount of Cr discharged into a sewage treatment plant is less than 20 mg per m2 of printing cylinder surface area used in the press.	The amount of Cr and Cu discharged into a sewage treatment plant shall be checked at rotogravure printing plants after treatment and before their release into the sewage.		Nb of Points or N/a
	b) 1 point shall be attributed to the converted paper product if the amount of Cu discharged into a sewage treatment plant is less than 200 mg Cu per m2 of printing cylinder surface area used in the press.			Nb of Points or N/a
<p><i>A representative sample of Cr and Cu discharges shall be collected each month. At least one annual analytical test shall be carried out by an accredited laboratory to determine the content of Cr and Cu in a representative sub-sample of these samples. The compliance with the criterion shall be assessed dividing the content of Cr and Cu, as determined by the annual analytical test, by the cylinder surface used in the press during the printing.</i></p> <p><i>The cylinder surface used in the press during printing is calculated by multiplying the cylinder surface (= $2\pi rL$, where r is the radius and L the length of the cylinder) by the number of printing productions during a year (= number of different printing jobs).</i></p>				



	Criteria	Assessment and verification	Comments	Number of points												
12	ENERGY USE															
12.1	<p>Use of renewable electricity (1-5 points)</p> <p>A number of points are attributed for the use of renewable electricity according to the table</p> <table border="1"> <thead> <tr> <th>% of the purchased electricity is renewable</th> <th>Points</th> </tr> </thead> <tbody> <tr> <td>100</td> <td>5</td> </tr> <tr> <td>50-99</td> <td>4</td> </tr> <tr> <td>30-49</td> <td>3</td> </tr> <tr> <td>10-29</td> <td>2</td> </tr> <tr> <td>0.1-9</td> <td>1</td> </tr> </tbody> </table>	% of the purchased electricity is renewable	Points	100	5	50-99	4	30-49	3	10-29	2	0.1-9	1	<p>The applicant shall provide a copy of the delivery agreement with the electricity supplier. Specification of the fuel used for the generation of the electricity together with information about the purchased amounts of the renewable electricity shall be provided if available.</p>	<p>Rates on the energy supplies invoices.</p>	<p>Nb of Points</p>
% of the purchased electricity is renewable	Points															
100	5															
50-99	4															
30-49	3															
10-29	2															
0.1-9	1															
12.2	<p>System for recovery of energy (2 points)</p> <p>2 points are attributed to the presence on site of a plant for heat energy recovery, such as a combined heat and power plant.</p>	<p>The applicant shall provide a description of the energy recovery system.</p>		<p>Nb of Points</p>												



	Criteria	Assessment and verification	Comments	Conformity
APPENDIX				
Criteria and assessment and verification requirements for paper and paperboard substrate, as defined in criterion 1 of the section A				
<p>Every single criterion of the Appendix will be audited by a third party on the paper or paperboard production site. The European Eco-label certification for paper or equivalent (Nordic Swan Eco-label) are equivalent to the requirements relative to emissions in water and air, to energy consumption, to forests sustainable management, to dangerous chemical substances and to waste management. A paper or paperboard component used in an NF Environment certified product does not enable automatically meet the Paper by nature eco-label criteria. The audit by third party of the Paper Paperboard manufacturer having to be carried out. Materials and associated processing of packaging are not covered by the eco-label criteria. Documentation: Buying and supplying processes checked by the auditor (traceability and monitoring of the products used allowing to guarantee the respect of the criterion).</p>				
1	Fibres			
	<p>Fibres may be wood fibres, or recycled fibres from recovered paper, or other cellulose fibres. Fibres from paper mill broke shall not be considered as recycled fibres.</p> <p>The product shall contain a minimum percentage of post-consumer recycled fibres OR virgin wood fibres that originate from sustainability managed forests which shall be certified by independent third party forest certification schemes fulfilling the criteria listed in paragraph 15 of the Council Resolution of 15 December 1998 on a Forestry Strategy for the EU and further development thereof. This requirement shall comply with the following timetable:</p>	<p>The applicant shall provide appropriate documentation from the paper supplier indicating the types, quantities and precise origins of fibres used in the pulp and the paper production.</p> <p>Appropriate Certificates have to be provided.</p>	<p>The <i>FSC Recycled</i>, <i>PEFC Recycled</i> and <i>Blue Angel</i> certifications for paper and paperboard all meet the Paper by Nature requirements relative to recycled fibres.</p> <p>The FSC and PEFC certification with the percentage system or the credit system meet the Paper by Nature requirements relative to certified virgin fibres.</p>	Yes/No
	<p>The remaining virgin wood fibres from forests shall be audited by an independent third party not to be from controversial sources.</p> <ul style="list-style-type: none"> - Wood must be from legally harvested sources. - No genetically modified (GM) trees allowed. - Traditional or civil rights must be respected in logging operations. - Wood must not come from protected areas or areas in the official process of designation for protection 	<p>The applicant shall provide the appropriate declarations from the paper supplier, charter, code of conduct or statement, verifying that the above requirements are met.</p>		Yes/No



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	Criteria	Assessment and verification	Comments	Number of points
THE FOLLOWING CRITERIA SHALL APPLY ONLY TO PAPER				
2	EMISSIONS TO WATER AND AIR			
	<p>a) COD, Sulphur (S), Nox</p> <p>For each of these parameters, the emissions to air and/or water from the pulp and the paper production shall be expressed in terms of points (PCOD, PS, PNOx) as detailed below.</p> <p>None of the individual points PCOD, PS, or PNOx shall exceed 1.5.</p> <p>The total number of points (Ptotal = PCOD + PS + PNOx) shall not exceed 3.0.</p> <p>The calculation of PCOD shall be made as follows (the calculations of PS and PNOx shall be made in exactly the same manner).</p> <p>Calculation for pulp production: For each pulp i used, the related COD emissions (COD pulp,i expressed in kg/air dried tonne — ADT), shall be divided by the reference value for that pulp type (CODreference,pulp) given in the table below for to give the number of points for the pulp production. The real COD emissions shall be weighted according to the proportion of each pulp used (pi with respect to moist paper), and summed together. The COD reference value shall be calculated in the same manner as the sum of the weighted reference values for each pulp used. (P COD, pulp).</p>	<p>The applicant shall provide appropriate documentation from the paper supplier showing detailed calculations showing compliance with this criterion, together with related supporting documentation, which shall include test reports using the following test methods:</p> <ul style="list-style-type: none"> - COD: ISO 6060; - NO x : ISO 11564; - S(oxid.): EPA no.8; - S(red.): EPA no 16A; - S content in oil: ISO 8754:1995; - S content in coal: ISO 351. <p>The supporting documentation shall include an indication of the measurement frequency and the calculation of the points for COD, S and NOx. It shall include all emissions of S and NOx, which occur during the production of pulp, and paper, including steam generated outside the production site, except those emissions related to the production of electricity.</p>		Yes/No



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	Criteria	Assessment and verification	Comments	Number of points
	<i>Measurements shall include recovery boilers, limekilns, steam boilers and destructor furnaces for strong smelling gases. Diffuse emissions shall be taken into account. Reported emission values for S to air shall include both oxidised and reduced S emission.</i>			
	<i>Measurements of emissions to water shall be taken on unfiltered and unsettled samples either after treatment at the plant or after treatment by a public treatment plant. The period for the measurements shall be based on the production during 12 months. In case of a new or a rebuilt production plant, the measurements shall be based on at least 45 subsequent days of stable running of the plant. The measurement shall be representative for the respective campaign.</i>			
	<p>b) AOX The AOX emissions from the production of each pulp used shall not exceed 0,4 kg/ ADT.</p>	<p>The applicant shall provide appropriate documentation from the paper supplier of test reports using the following test method: AOX ISO 9562 (1989). The supporting documentation shall include an indication of the measurement frequency. AOX shall only be measured in processes where chlorine compounds are used for the bleaching of the pulp. AOX need not be measured in the effluent from non-integrated paper production or in the effluents from pulp production without bleaching or where the bleaching is performed with chlorine-free substances.</p>		Yes/No
	<i>Measurements shall be taken on unfiltered and unsettled samples either after treatment at the plant or after treatment by a public treatment plant. The period for the measurements shall be based on the production during 12 months. In case of a new or a re-built production plant, the measurements shall be based on at least 45 subsequent days of stable running of the plant. The measurement shall be representative for the respective campaign.</i>			



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	Criteria	Assessment and verification	Comments	Number of points																								
	<p>c) CO2 The emissions of carbon dioxide from non-renewable sources shall not exceed 1150 kg per tonne of paper produced, including emissions from the production of electricity (whether on-site or off-site). For non-integrated mills (where all pulps used are purchased market pulps) the emissions shall not exceed 1250 kg per tonne. The emissions shall be calculated as the sum of the emissions from the pulp and paper production.</p> <table border="1"> <thead> <tr> <th>Fuel</th> <th>CO2 emission</th> <th>Unit</th> </tr> </thead> <tbody> <tr> <td>Coal</td> <td>95</td> <td>g CO2 fossil/MJ</td> </tr> <tr> <td>Crude oil</td> <td>73</td> <td>g CO2 fossil/MJ</td> </tr> <tr> <td>Fuel oil 1</td> <td>74</td> <td>g CO2 fossil/MJ</td> </tr> <tr> <td>Fuel oil 2-5</td> <td>77</td> <td>g CO2 fossil/MJ</td> </tr> <tr> <td>LPG</td> <td>69</td> <td>g CO2 fossil/MJ</td> </tr> <tr> <td>Natural gas</td> <td>56</td> <td>g CO2 fossil/MJ</td> </tr> <tr> <td>Grid electricity</td> <td>400</td> <td>g CO2 fossil/kWh</td> </tr> </tbody> </table>	Fuel	CO2 emission	Unit	Coal	95	g CO2 fossil/MJ	Crude oil	73	g CO2 fossil/MJ	Fuel oil 1	74	g CO2 fossil/MJ	Fuel oil 2-5	77	g CO2 fossil/MJ	LPG	69	g CO2 fossil/MJ	Natural gas	56	g CO2 fossil/MJ	Grid electricity	400	g CO2 fossil/kWh	<p>The applicant shall provide appropriate documentation from the paper supplier of detailed calculations showing compliance with this criterion, together with related supporting documentation. The applicant shall provide data on the air emissions of carbon dioxide. This shall include all sources of non-renewable fuels during the production of pulp and paper, including the emissions from the production of electricity (whether on-site or off-site). For grid electricity, the value quoted in the table above (the European average) shall be used unless the applicant presents documentation establishing the average value for their supplier(s) of electricity, in which case the applicant may use this value instead of the value quoted in the table.</p>		<p>Yes/No</p>
Fuel	CO2 emission	Unit																										
Coal	95	g CO2 fossil/MJ																										
Crude oil	73	g CO2 fossil/MJ																										
Fuel oil 1	74	g CO2 fossil/MJ																										
Fuel oil 2-5	77	g CO2 fossil/MJ																										
LPG	69	g CO2 fossil/MJ																										
Natural gas	56	g CO2 fossil/MJ																										
Grid electricity	400	g CO2 fossil/kWh																										
	<p><i>.The period for the calculations or mass balances shall be based on the production during 12 months. In case of a new or a rebuilt production plant, the calculations shall be based on at least 45 subsequent days of stable running of the plant. The calculations shall be representative for the respective campaign.</i></p>																											



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	Criteria	Assessment and verification	Comments	Number of points
3	HAZARDOUS CHEMICAL SUBSTANCES			
	For all chemical products used during the pulp and paper processes	The applicant shall supply a list of the chemical products used in the pulp and paper production, together with appropriate documentation (such as SDSs). This list shall include the quantity, function and suppliers of all process chemicals used.		Yes/No
	a) Chlorine Chlorine gas shall not be used as a bleaching agent. This requirement does not apply to chlorine gas related to the production and use of chlorine dioxide	The applicant shall provide a declaration from the pulp producer(s) that chlorine gas has not been used as a bleaching agent. Note: while this requirement also applies to the bleaching of recycled fibres, it is accepted that the fibres in their previous life cycle may have been bleached with chlorine gas.		Yes/No
	b) APEO Alkylphenol ethoxylates or other alkylphenol derivatives shall not be added to cleaning chemicals, de-inking chemicals, foam inhibitors, dispersants or coatings. Alkylphenol derivatives are defined as substances that upon degradation produce alkyl phenols.	The applicant shall provide appropriate documentation from the paper supplier consisting of a declaration(s) from their chemical supplier(s) that alkylphenol ethoxylates or other alkylphenol derivatives have not been added to these products.		Yes/No



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	Criteria	Assessment and verification	Comments	Number of points
	<p>c) Surfactants in de-inking formulations for return fibres</p> <p>Where surfactants are used in quantities of at least 100 g/ADT (summed over all the surfactants used in the all the different formulations used in de-inking return fibres), each surfactant shall be readily biodegradable. Where such surfactants are used in quantities of less than 100 g/ADT, each surfactant shall be either readily biodegradable or ultimately biodegradable (see test methods and pass levels below).</p>	<p>The applicant shall provide appropriate documentation from the paper supplier consisting of a declaration of compliance with this criterion together with the relevant safety data sheets or test reports for each surfactant which shall indicate the test method, threshold and conclusion stated,</p>		<p>Yes/No</p>
	<p>Test methods and pass levels:</p> <p>for ready biodegradability OECD 301 A-F (or equivalent ISO standards), with a percentage degradation within 28 days of at least 70 % for 301 A and E, and of a least 60 % for 301 B, C, D and F;</p> <p>for ultimate biodegradability OECD 302 A-C (or equivalent ISO standards), with a percentage degradation (including adsorption) within 28 days of at least 70 % for 302 A and B, and of at least 60 % for 302 C.</p>			
	<p>d) Biocides</p> <p>The active components in biocides or biostatic agents used to counter slime-forming organisms in cRFQulation water systems containing fibres shall not be potentially bio-accumulative.</p>	<p>The applicant shall provide appropriate documentation from the paper supplier consisting of a declaration of compliance with this criterion together with the relevant safety data sheet or test report which shall indicate the test method, threshold and conclusion stated, using the following test methods: OECD 107, 117 or 305 A-E.</p>		<p>Yes/No</p>
	<p><i>Note: Applicants using paper that has been awarded the EU eco-label for 'copying and graphic paper', or paper that has been awarded any other eco-label based on ISO standard 14024:1999 for type I environmental labels, may fulfil any of the individual criterion above if the requirements of that scheme are as stringent as, or more stringent than, the individual criterion laid down in this appendix. If this is the case then the applicant need only provide a declaration reporting the registration number of the eco-labelled printing paper, together with evidence that that individual criterion of the awarded label is as stringent or more stringent than those above and that this has been assessed and verified under the environmental label of reference.</i></p>			