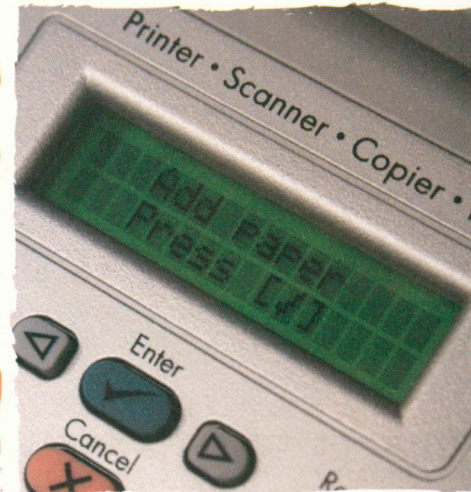
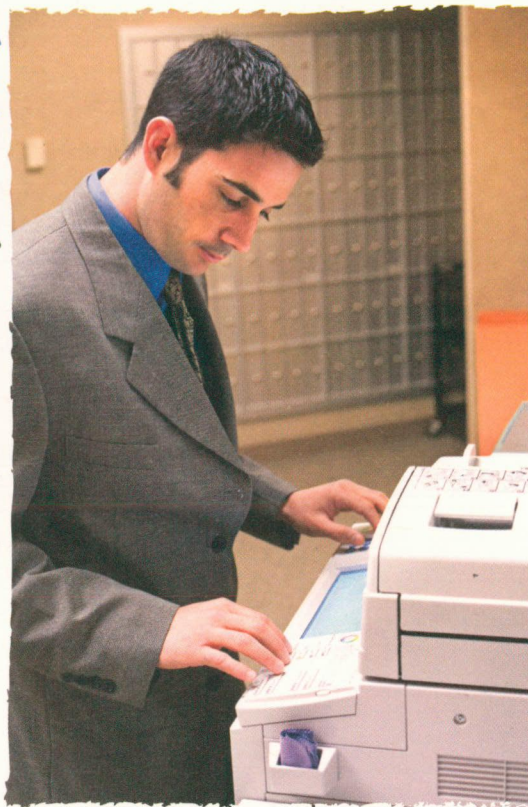


SER/NSWDECC  
2009/91



# Know your paper

## A guide to purchasing recycled content office paper



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**Disclaimer:**

The Department of Environment and Climate Change NSW (DECC) has compiled this document in good faith, exercising all due care and attention. The State of NSW and DECC do not accept responsibility for inaccurate or incomplete information. Readers should seek professional advice when applying this information to their specific circumstances.

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# The purpose of this guide

*Know your paper* is the fourth edition of the popular Know your paper guide, originally compiled in 2000 and updated in 2002 and 2004. *Know your paper* assists anyone wishing to purchase 80gsm all-purpose office paper containing recycled fibre. It has:

- a list and samples of office papers that contain some recycled fibre and are readily available in Australia
- up-to-date product and performance information on the available brands
- contact details for companies that supply the papers
- answers to commonly asked questions; and
- links to further information about recycled content office papers and buying recycled products in general.

The Department of Environment and Climate Change NSW (DECC) aims to keep all recycled product guides up-to-date in line with market changes to make sure you are well informed about recycled content alternatives. This guide retains much of the original information compiled for the earlier guides and also has additional information, new papers and changes to existing paper products.

*Know your paper* is based on data and information obtained from manufacturers and suppliers of recycled office papers. This information changes as the quality of products is improved and new products are developed or become available in the Australian marketplace. Always check that the information is current and make sure that any paper you buy suits your purposes. Because of the variation in the recycled fibre content of different papers, all are collectively described as 'recycled content', meaning that they contain a percentage of recycled wastepaper fibre.

The availability of recycled content office papers has grown since the first Know your paper in 2000. Sixteen brands of recycled content office paper are now readily available and manufacturers increasingly provide more detailed information to support environmental claims and assist consumers in making more informed purchasing decisions.

This guide is written in response to the most frequently asked questions about recycled content office papers by users.

This updated fourth edition contains additional information about:

- environmental labels
- sustainably managed forests
- energy and water savings associated with recycled content paper.

It provides an overview and straightforward information about what recycled office papers are available, what they are made of, where they come from, what they are suitable for and how to get them. A sample page of each paper discussed in the guide is provided to assist with the selection of the most appropriate paper for your needs.

Contact DECC for further information, other waste reduction resources or if you have updates or additional information that should be included in the next edition.

*Market demand places more emphasis on environmentally preferable products.*

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## Section 1: Why buy recycled content paper?

*A wide range of high-quality recycled content papers is now available due to improvements in waste recovery and paper manufacturing processes. So, if you have avoided recycled content papers because of reservations related to paper quality, now is the time to reconsider your paper needs and test the performance of a recycled content paper.*

**There is an increasing demand for paper products, with printing and writing papers showing strong growth<sup>1</sup>.**

In the 2006/07 financial year, Australians used about 1.72 million tonnes of printing and writing paper.<sup>2</sup> This is equivalent to more than 40 million trees, as 1 tonne of virgin office paper requires the equivalent of 24 trees.<sup>3</sup>

Office paper makes up a significant percentage of the commercial paper waste stream and is the largest component of solid waste generated by offices.<sup>4</sup> It is estimated that in NSW about 700,000 tonnes of paper and paper products are sent to landfill each year.<sup>5</sup>

There are sound economic and ecological reasons for recycling paper and also for buying products that are manufactured from recovered fibre. The eight primary goals for recycling and 'buying recycled' are:

### 1. Energy savings

Producing paper from recovered fibres uses about 50% less energy than manufacturing paper from virgin pulp.<sup>6,7</sup>

### 2. Water conservation

Producing paper from recovered fibres uses up to 60% less water than manufacturing paper from virgin pulp.<sup>8,9</sup>

### 3. Reduced consumption of natural resources

Buying recycled content products helps to reduce pressure on natural resources.

### 4. Diversion of materials from landfill

Recycling and buying recycled products ensures valuable resources are not sent to landfill.

### 5. Greenhouse gas benefits

Paper sent to landfill is a significant contributor to methane gas, which has a global warming potential 21 times more damaging than carbon dioxide.<sup>10</sup>

1 [www.nafi.com.au/faq/index.php3?fact=11](http://www.nafi.com.au/faq/index.php3?fact=11)

2 Australian Bureau of Agricultural and Resource Economics (2007) *Australian Commodity Statistics 2007*

3 [www.dolphinblue.com/whybuy.html#howmuch](http://www.dolphinblue.com/whybuy.html#howmuch)

4 Resource NSW (2002) *'Waste Reduction in Office Buildings, A Guide for Tenants'*

5 DECC (2008) *'Industry and DECC Paper Materials Flows analysis 04,05,06,07'* (Internal Document Only)

6 Waste and Resources Action Programme (WRAP) (2006) *'Environmental benefits of recycling – an international review of life cycle comparisons for key materials in the UK recycling sector'*

7 AMCOR (2002) *'Submission to State Sustainability Strategy'*

8 [www.treecycle.com/info.html](http://www.treecycle.com/info.html)

9 Institute for Energy and Environmental Research Heidelberg (IFEU) (2006) *'Ecological comparison of office papers in view of fibrous raw material'*

10 Department of Climate Change (2008) *'National Greenhouse Accounts (NGA) Factors'*

## 6. Improved collection and processing infrastructure

Increasing the demand for recycled content products supports the economy and diversity of secondary markets.

## 7. Corporate social responsibility

Using recycled content products is an easy way to demonstrate that you take environmental impacts in the workplace into consideration.

## 8. Employment

Supporting recycling markets helps to create more jobs. The recycling industry provides jobs both directly and indirectly – the direct employment of member companies of the industry group the Australian Council of Recyclers is estimated at over 10,000 jobs.<sup>11</sup>

You can find more information about introducing and improving office recycling systems in *Waste Reduction in Office Buildings* at: [www.environment.nsw.gov.au](http://www.environment.nsw.gov.au)

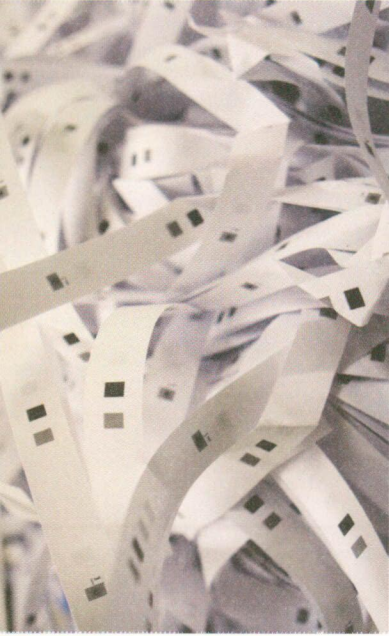
*The combination of successful office recycling programs and buying recycled content paper helps complete the cycle for paper recycling.*



Image courtesy of Forest NSW

<sup>11</sup> [www.acor.org.au/whoisacor.html](http://www.acor.org.au/whoisacor.html)

## Section 2: What is recycled content paper?



Recycled content paper includes a proportion of recovered fibres as well as moisture, binders and pigments/fillers (e.g. clay), which determine the characteristics of the paper such as opacity, weight and texture.

### Paper waste streams

The three types of waste are pre- and post-consumer materials<sup>12</sup> and mill broke.

#### Pre-consumer material

Pre-consumer material is diverted from the waste stream during a manufacturing process.

In the case of fibre used to manufacture office paper, sources of pre-consumer waste are generally companies such as printers and paper converters. Pre-consumer material does not include re-utilisation of materials such as rework, regrind or scrap, generated in a process that can be reused within the same process. These companies produce paper waste from some of the following activities:

- envelope and paper packaging manufacture
- paper sack converting
- printed stationery manufacture
- office paper converting – offcuts and trimmings
- Tetra Pak, carton and drinking cup manufacture
- printed products manufacture – offcuts and trimmings.

The paper sourced from these companies is generally high quality, provides a regular supply and would be sent to landfill if it was not used in new paper products.

#### Post-consumer material

Post-consumer material, which can no longer be used for its intended purpose, is generated by households or by commercial, industrial and institutional facilities. Much of this material is collected as mixed grades of paper, which may include newspapers, office paper, magazines and cardboard packaging.

#### Mill broke

A third type of waste, which is sometimes confused with pre-consumer waste, is material that can be reused by the company that creates the waste. For example, mill broke is the paper waste generated by the mill in the production of paper. Mill broke is not classed as recycled fibre because it is regarded as good business practice to reuse it.

<sup>12</sup> AS/NZS ISO 14021:2000 Environmental Labels and Declarations – Self-declared Environmental Claims (Type II Environmental Labelling)



Figure 1 provides a visual representation of the three paper waste streams and the movement of wastepaper through distribution back to the mill.

It is important to have an understanding of the origin of the recycled content in paper because it may influence your purchasing decisions. Australian and New Zealand definitions of pre- and post-consumer materials may differ from some international definitions. Therefore, when comparing International and Australian products make sure that terms are given the same meaning. The products listed in this guide have been described according to the definitions of the pre- and post-consumer waste specified in the Australian and New Zealand standards AS/NZS ISO 14021:2000.

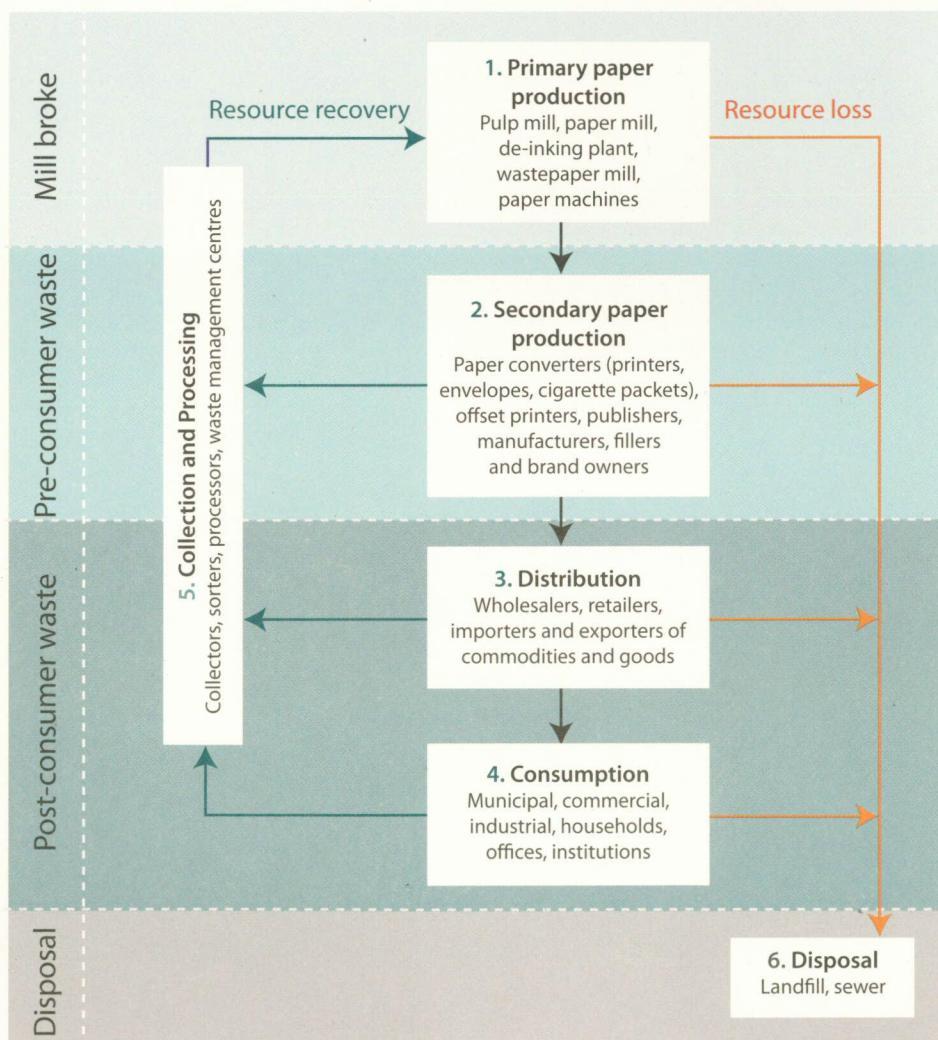


Figure 1: Movement of paper through the distribution chain, and waste and recycling system.

## Does it make a difference if fibre is sourced from pre- or post-consumer waste streams?

Any wasted paper recovered for recycling reduces the amount of virgin material (trees) needed to produce paper and cardboard products. Purchasing products made from post-consumer recycled materials encourages recycling.

All-purpose copy and office paper must be of high quality to meet a certain standard of performance. To achieve the expected quality in the paper, only certain grades of recovered fibre can be used in the paper making process and they need to be carefully monitored and sourced from suitable operations.

Whether the source of recycled fibre is from printers' off-cuts, office waste or kerbside paper collections, the fibre is a resource that should be diverted from landfill. If pre-consumer waste is not recycled it will still end up disposed to landfill.

## Should you choose 100% recycled fibre?

Paper fibres differ from other recyclable materials, such as glass and steel, in that they can only be recycled five or six times. They become damaged during the recycling process – they shrink and break – so eventually they are no longer strong enough to form paper.

Fibres that are too short for paper production can be removed during the manufacturing process. Any fibres that are too short will be filtered out and discarded, therefore fibre length and paper quality is maintained.

While some may think using a paper made from less than 100% recycled content is not truly supporting recycled products, purchasing any product with recycled content has benefits. Using a higher quality paper that contains a percentage of new fibre utilises wastepaper without compromising the reliability of the paper.

## What about product warranties and service agreements?

We consulted office equipment manufacturers – incorporating manufacturers of photocopiers, fax machines and printers – to investigate the legitimacy of claims that using recycled content office paper would have an impact on service agreements, servicing costs and/or product warranties.

All companies were positive and supportive of good quality brands of recycled content office paper. They understand that, like all paper products, there is variation in the quality of different brands of recycled paper and each brand should be treated individually. Office equipment manufacturers do test their products and may be able to provide further testing if requested by a client.

Most companies are clearly well informed about the improved quality of recycled papers over recent years. Overall, company representatives see the importance of implementing sound environmental practices and the need to make a commitment to sustainability.

Office equipment manufacturers agree that good quality recycled content papers are satisfactory as long as they meet the specifications for the machines in which they will be used. It is important to ensure that a paper is compatible with your office equipment before conducting a trial and also to contact the manufacturer to find out if there has been any previous testing. Trials of new papers should always be conducted prior to full scale use.

*Choose the paper with the highest recycled material content which suits your purpose – in many cases this will be a 100% recycled content product. See Tables 2 and 3 for specifications about the papers included in this guide.*

If, over time, you can prove that a brand of paper is causing problems with office equipment, you should discontinue use of the paper, otherwise you could incur costs for additional service calls or repairs.

Note that the above issues relate to both recycled content papers and virgin papers. When asked about the performance of different brands of paper in office equipment, a number of companies mentioned that some cheaper, imported virgin papers are prone to causing problems in office equipment. They believed these papers posed a more significant risk than recycled content papers.

## Green marketing and the Trade Practices Act 1974

Any claims by a company that using recycled office paper will increase the cost of service agreements and violate product warranties, or that only a specific brand of paper can be used in their equipment, may constitute a breach of the *Trade Practices Act 1974*.

Under the Act, it is an offence to mislead the public about the characteristics or suitability for purpose of any goods. It is also an offence to make a false or misleading representation about the exclusion or effect of any condition, warranty or guarantee.

If a competitor's recycled paper is equivalent in performance to their own, equipment manufacturers or suppliers cannot legally discriminate against the competing products. This includes either misleading claims about competing products or attempts to establish bias through conditions in service contracts and warranties.

No office equipment manufacturer can legally discourage the use of recycled paper if it meets the specifications for the machine in which it will be used. Contact the Australian Competition and Consumer Commission (ACCC) for further information.

*Office equipment manufacturers say that quality recycled content papers are satisfactory as long as they meet the specifications for the machines in which they will be used.*

## Environmental labels and certifications

There is a range of voluntary environmental labels and certifications both in Australia and internationally. Environmental labels identify products that are sensitive to environmental criteria (not just recycled fibre) in their manufacture or use, providing consumers with valuable information when considering products to purchase.

The labels relate to the nature of the environmental claims made, and are grouped by the International Organisation for Standardisation<sup>13</sup>:

- Type I labels<sup>14</sup> – are multi criteria based, third party certified environmental labelling programmes that compare products in the same category across their life cycle. The criteria are set by an independent body and monitored through an auditing process, e.g. the Forest Stewardship Council (FSC), Good Environmental Choice Australia (GECA).
- Type II labels<sup>15</sup> – are self declared environmental claims made by the manufacturer, distributor or importer. They are not independently verified nor do they use pre-set criteria. Common terms for self declared environmental claims include 'recycled content', 'degradable' and 'compostable'. The recycled content claims described in this document are considered Type II declarations and closely follow the standards described by Standards Australia/Standards New Zealand.

<sup>13</sup> [www.iso.org/iso/home.htm](http://www.iso.org/iso/home.htm)

<sup>14</sup> AS/NZS ISO 14024

<sup>15</sup> AS/NZS ISO 14021

*The Australian Competition and Consumer Commission (ACCC) has recently published guidelines about the increasing use of environmental claims by businesses. The guidelines aim to: educate businesses about their obligations under the Trade Practices Act 1974; improve accuracy and usefulness of labelling for consumers; and prevent misleading unsupported environmental claims being made.\* See Section 5 for more information.*

- Type III labels<sup>16</sup> – provide quantified information regarding the environmental aspects of products and services based on life cycle impacts<sup>17</sup>, and are primarily for use in business to business communications.

Companies and other organisations can also implement environment management systems to evaluate, improve and report on their environmental performance, and these systems can be applied to the manufacture of paper and paper mills.

A range of labels (Type I) and certifications are described below. They refer to the recycled content claims, the virgin fibre source or a broader range of environmental criteria in the manufacture of the product. Some recycled content papers and the mills from which they are produced carry these labels and/or certifications, as described in Table 2 (pages 22-23).

### Forest Stewardship Council (FSC)

The Forest Stewardship Council (FSC) promotes responsible forest management through its international standards<sup>18</sup>, its certification system and its product labelling system. Papers can carry one of three types of FSC labels on their packaging to indicate compliance of the fibre with FSC standards (including recycled content).

FSC product labels can only be applied by organisations that have been certified as complying with FSC standards. There are two types of FSC certificates:

- Forest Management (FM) Certificate – which requires an inspection of the forest management unit to check that practices comply with the internationally agreed FSC Principles of Responsible Forest Management. Certified forest operations can claim the forest products they produce come from a responsibly managed forest. However, before a certified forest operation can sell products as FSC certified, they must also obtain Chain of Custody (COC) certification.
- Chain of Custody (COC) Certificate – provides verification of the supply chain from the forest to the consumer, including all stages of processing, transformation, manufacturing and distribution. Operations that have been independently verified for FSC COC certification are eligible to label their products with the FSC trademark.

Where forest management does not yet meet the standards of the FSC – but does meet five criteria of avoiding serious social and economic impacts – it is known as 'Controlled Wood' which can be used in FSC 'Mixed Sources' products. Claims of controlled wood must be verified at the wood source.

The FSC has produced three paper products labels which identify those products that have been manufactured in compliance with FSC standards and support responsible forest management.<sup>19,20</sup>

- FSC 100% label – products that come from forests certified as complying with the FSC environmental and social standards.
- FSC Mixed Sources label – wood for products with a Mixed Sources label may be from a mix of FSC certified forests, FSC controlled sources and/or recycled material. These products support the development of responsible forest management worldwide.
- FSC Recycled label (Figure 2) – products that support reuse of forest resources and only use 100% FSC defined post-consumer recovered fibre in a product.



© 1996 FSC A.C.

Figure 2: FSC Recycled Label

<sup>16</sup> AS/NZS 14025

<sup>17</sup> [www.gednet.org/?page\\_id=2](http://www.gednet.org/?page_id=2)

<sup>18</sup> [www.fscaustralia.org/](http://www.fscaustralia.org/)

<sup>19</sup> [www.scs-certified.com/forestry/fsclabels.html](http://www.scs-certified.com/forestry/fsclabels.html)

<sup>20</sup> pers. comm. FSC Australia (14/07/08)

\* [www.accc.gov.au/content/index.php/html/itemId/815763](http://www.accc.gov.au/content/index.php/html/itemId/815763)

### Good Environmental Choice Australia (GECA)

The Good Environmental Choice Australia (GECA) label (Figure 3) has recently been introduced by the Australian Environmental Labelling Association (AELA) and is currently the only environmental labelling program in Australia. The GECA label indicates the environmental performance of consumer goods from a whole of product life perspective. The label is awarded to products that meet voluntary environmental performance standards, which have been created and assessed to international environmental labelling standards.<sup>21</sup>

Criteria for GECA labelled papers include fibre source requirements, restricted use of chemicals and heavy metals, additives and adhesives, and consideration of water, energy, noise and air quality consumption during production and manufacture.

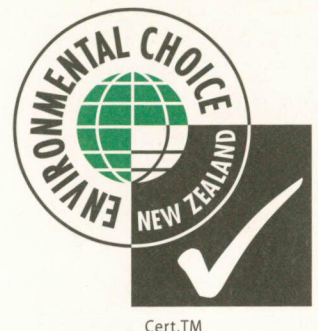


Figure 3: GECA Label

### Environmental Choice New Zealand (ECNZ)

The New Zealand Ecolabelling Trust operates the Environmental Choice New Zealand (ECNZ) ecolabelling programme, which was initiated and endorsed by the New Zealand government. The ECNZ label (Figure 4) aims to minimise environmental impact generated by the production, distribution, use and disposal of products. The purpose of the label is to provide a credible and independent guide for consumers who want to purchase products that are better for the environment.

The ECNZ label is awarded to office paper and stationery products that meet a range of product and environmental criteria, including recycled content claims and virgin fibre source, the use of hazardous substances, and impacts associated with pulp and paper production.<sup>22</sup>



Cert.TM

Figure 4: ECNZ Label

### The Blue Angel label

The German Blue Angel label (Figure 5) highlights products and services that are made and delivered according to strict environmental guidelines and high standards of health, safety and functionality. This certification helps consumers choose products that are environmentally sustainable. It is one of the world's first environmental accreditation programmes and is internationally recognised.<sup>23</sup>

The Blue Angel label is awarded to recycled content papers that consist of 100% recovered fibres, and which minimise chemicals and additives in pulp and paper production.



Figure 5: The Blue Angel Label

### The Nordic Swan label

The Nordic Swan label (Figure 6) can be applied to environmental criteria of 60 product groups, highlighting those products that are a good environmental choice. The Nordic Swan checks that products fulfil certain criteria through samples from independent laboratories, certificates and control visits. It was introduced in 1989 with the purpose of being the common, impartial, official environmental label for the Nordic region.<sup>24</sup>

Criteria for Nordic Swan labelling of paper products includes forestry management, emissions, energy, chemicals and waste in pulp and paper manufacturing.



Figure 6: Nordic Swan Label

<sup>21</sup> [www.aela.org.au](http://www.aela.org.au)

<sup>22</sup> <http://www.enviro-choice.org.nz/>

<sup>23</sup> [www.blauer-engel.de](http://www.blauer-engel.de)

<sup>24</sup> [www.svanen.nu](http://www.svanen.nu)



Figure 7: NAPM Label

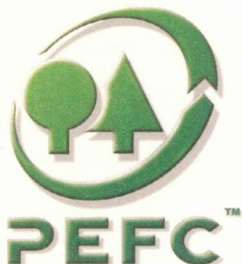
## The National Association of Paper Merchants (NAPM)

The National Association of Paper Merchants (NAPM) in the United Kingdom (UK) awards the Recycled Paper Mark (Figure 7) to paper and board manufactured from a minimum of 50% genuine recovered fibre, no part of which should contain mill produced waste. This label aims to provide consumers with confidence in the recycled content claims of a product.<sup>25</sup>



AFS/01-10-01

Figure 8: AFS Logo



PEFC/21-1-1

Figure 9: PEFC Label

## Programme for the Endorsement of Forest Certification (PEFC)

The Programme for the Endorsement of Forest Certification (PEFC) – which originated in Europe – is an independent, non-profit, non-government organisation, which promotes sustainably managed forests through independent third party certification. It provides an international framework for national forest certification systems.<sup>26</sup>

The Australian Forest Certification Scheme (AFCS)<sup>27</sup> is endorsed by the PEFC and aims to provide consumers with an independent, internationally recognised third party certification scheme for forest management in Australia. It is managed by Australian Forestry Standard Limited (Figure 8), which is a member of the PEFC Council. The key elements of the AFCS are The Australian Forestry Standard (AS 4708—2007) for forest management and the COC Standard (AS 4707—2006) to track forest and wood products through the supply chain.

Both the PEFC and AFCS aim to provide an assurance mechanism to purchasers of wood and paper products that they are promoting the sustainable management of forests. In terms of papers with a recycled content, the PEFC label (Figure 9) applies to the certified mix of virgin fibres and recycled material exceeding 70%.

## Paper Profile

Paper Profile is a voluntary environmental product declaration scheme developed and provided by leading paper producers. It helps consumers make well informed choices by presenting figures on essential environmental parameters in a uniformed way for specific products.<sup>28</sup> Paper Profile is primarily used by European paper manufacturers and paper information is usually available on manufacturers' websites.

Paper Profile does not appear as a label on a paper product but provides information about the product.

<sup>25</sup> [www.napm.org.uk/recycled\\_mark.htm](http://www.napm.org.uk/recycled_mark.htm)

<sup>26</sup> [www.pefc.org/internet/html/](http://www.pefc.org/internet/html/)

<sup>27</sup> [www.forestrystandard.org.au/default.asp](http://www.forestrystandard.org.au/default.asp)

<sup>28</sup> [www.paperprofile.com](http://www.paperprofile.com)

## ISO 14001

ISO 14001 is an international standard for an environmental management system (EMS). Paper making mills can be certified to ISO 14001 if they meet all its specifications for an EMS. Certification of a mill with ISO 14001 provides evidence of environmentally sustainable management.<sup>29</sup>

AS/NZS ISO 14001 is the Australian and New Zealand standard for an EMS and is identical to the international standard. Within Australia and New Zealand, AS/NZS ISO 14001 may be used as evidence a mill meets all the standard specifications.

ISO 14001 refers to the overarching environmental management and is not a forest certification scheme or product based certification.

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## Eco-Management and Audit Scheme (EMAS)

The European Union's Eco-Management and Audit Scheme (EMAS) can be used to communicate key environmental information using third party verified EMAS reports. The EMAS uses the ISO 14001 as its management system, but adds several 'pillars' to the requirements of the international standard. The EMAS logo symbolises the manufacturer's commitment to continuous improvement and can only be used after the manufacturer conducts an environmental review, establishes an effective environmental management system, carries out an environmental audit and provides a statement of environmental performance.<sup>30</sup>

The EMAS logo can only be applied to organisations in the European Union or European Economic Area. It refers to their overarching environmental management and is not a forest certification scheme or product based certification.<sup>31</sup>

The EMAS label is carried by the paper product and applied to the mill where the paper is manufactured.



Figure 10: EMAS Logo

29 [www.iso.org](http://www.iso.org)

30 [www.emas.org.uk/](http://www.emas.org.uk/)

31 [www.forestsforever.org.uk/sustainability/management/emas.asp](http://www.forestsforever.org.uk/sustainability/management/emas.asp)

## Section 3: Environmental impacts

The environmental impacts associated with the use of virgin fibre paper vary greatly depending on the source of the fibre (that is, either plantation forest or native forest) and how the forests are managed.

### Sustainably managed forests

Sustainable forestry aims to enhance, maintain or restore a range of factors including the ecological processes of the forests (e.g. the water cycle), biological diversity, natural and cultural heritage, sustainable timber supply, economic development and social development.<sup>32</sup>

Essentially, plantation forests are managed tree farms. They are often established on unused pastoral land and can improve the environmental quality of the land by reducing soil erosion and salinity, improving water quality and increasing the total carbon stored on the land.<sup>33</sup> New trees are planted on an ongoing basis as mature trees are harvested. The management quality of a plantation will help determine how sustainable it is.

Native forests intrinsically have a greater biodiversity value than plantation forests because they have a wider variety of tree and scrub species, and typically support more wildlife habitat due to their complex ecosystem and vegetation structure.<sup>34</sup> Where native forests are replaced by plantation forests the biodiversity value will decrease substantially. Similarly, when native forests are logged extensively for paper production, biodiversity, soil and water quality are significantly impacted.<sup>35</sup>

The quality and environmental value of different forests varies, as do the management techniques employed in forestry. Certifications such as the PEFC and FSC ensure that both native and plantation forests are managed sustainably to meet certain criteria that will lower the environmental impacts associated with logging.

Many of the recycled content papers that contain some virgin fibre now have the proportion of virgin fibre certified as sustainable. If choosing recycled content paper that contains a portion of virgin fibre, select one that contains virgin fibres that are certified sustainable.

### Resource savings

Manufacturing paper from recovered fibres ultimately has less environmental impact than manufacturing paper from virgin fibres.

Key environmental impacts associated with paper making include energy and water consumption, greenhouse gas emissions, solid waste generation and wastewater emissions. Soil degradation and deforestation, human and eco-toxicity, air emissions [other than carbon dioxide (CO<sub>2</sub>)], noise and odours from paper mills and issues surrounding landfill sites also have a significant impact.<sup>36</sup>



Image courtesy of Forest NSW

*Producing paper from recovered fibre instead of virgin fibre consumes up to 60% less water and 50% less energy.*

32 Food and Agriculture Organization of the United Nations (2003) *Forest Management Working Paper*

33 [www.forest.nsw.gov.au/publication/forest\\_facts/forestry\\_NSW/default.asp](http://www.forest.nsw.gov.au/publication/forest_facts/forestry_NSW/default.asp)

34 Intergovernmental Panel on Climate Change (1998) *Land Use, Land-use change and Forestry*

35 [www.forest.nsw.gov.au/publication/forest\\_facts/forestry\\_NSW/default.asp](http://www.forest.nsw.gov.au/publication/forest_facts/forestry_NSW/default.asp)

36 Integrated Pollution and Prevention Control European Commission (2001) *Reference documentation Best available techniques in the Pulp and Paper industry*



## Less energy in production

The energy requirements for the manufacture of recycled content paper are generally 50% lower than that of virgin paper,<sup>37,38</sup> because much of the paper mass has already been processed. Significant amounts of energy are required to convert wood into pulped fibres in the manufacture of virgin paper. Once the pulp is produced, both virgin and recycled paper require the same amount of energy for the paper making phase.

Also, energy required for forestry activities, the harvesting of trees and transportation to mills is often greater than that required to collect reused paper, sort it and transport it to mills.<sup>39</sup>

## Less water in production

Water is used in paper manufacture to create pulp, to de-ink waste papers and as steam for drying. The manufacture of virgin paper requires far greater volumes of water than recycled paper<sup>40</sup> due to the water intensive processes involved in boiling wood to create pulp. Producing paper from recovered fibres consumes up to 60% less water than manufacturing paper from virgin pulp.<sup>40</sup>

Water saving technologies are widely used in paper manufacturing, especially in Australia<sup>41</sup> where the majority of paper mills now recycle water on site. This helps reduce the environmental impacts of paper production, but water is a valuable resource and its use, or over use shouldn't be forgotten when considering the environmental impacts of paper manufacture<sup>42</sup>.

## Climate change

The sources of greenhouse emissions from the paper making process include the harvesting of trees, transport of raw materials to the mills, paper making plants and/or wastepaper collection, the manufacturing process and the end of life disposal. Overall, many of these impacts relate to the individual forestry, waste collection and manufacturing processes of different companies, whether they produce virgin paper or recycled content paper. However, when comparing the basic energy requirements of manufacturing paper from recovered fibre versus virgin fibre, recycled paper is generally less energy intensive.

Less greenhouse gases are emitted during the manufacture of recycled paper because less energy is required to create the paper pulp. Also, manufacturing paper from recycled fibre:

- eliminates emissions resulting from the harvesting of trees and reduces the removal of forests, which operate as carbon sinks
- eliminates the amount of CO<sub>2</sub> and methane produced when paper breaks down in landfill – when paper is sent to landfill it decomposes anaerobically (without oxygen), releasing methane (a greenhouse gas 21 times more powerful than CO<sub>2</sub>). Recycling paper avoids these emissions.

Some suggest that emissions associated with the collection and transport of recovered paper for recycling eliminates any benefits gained elsewhere in the recycling process.



37 Waste and Resources Action Programme (WRAP) (2006) 'Environmental benefits of recycling-An international review of life cycle comparisons for key materials in the UK recycling sector'

38 AMCOR (2002) 'Submission to State Sustainability Strategy'

39 Wiegard (2001) 'Quantification of Greenhouse Gases at Visy Industries using Life Cycle Assessment'

40 Institute for Energy and Environmental Research Heidelberg (IFEU) (2006) 'Ecological comparison of office papers in view of fibrous raw material'

41 Department of Environment and Conservation NSW (2005) 'Benefits of Recycling'

42 Department of Environment and Conservation NSW (2005) 'Benefits of Recycling'

*By recycling paper and cardboard at the kerbside, a typical NSW household avoids generating 45.9 kg carbon dioxide equivalent (CO<sub>2</sub>-e) each year. These savings are primarily attributable to reducing landfill emissions.\**

However, there are also emissions associated with the transportation of wood products to the mill to manufacture virgin paper. These really need to be assessed case by case, but generally the savings from recycled paper manufacture outweigh emissions generated.

Although virgin paper production requires much higher energy input, many pulping mills use biofuels (wood waste) as an energy source, or they purchase renewable energy. Therefore, individual brands of recycled content or virgin fibre paper may reduce the overall greenhouse related impacts of production via the energy source used. Again, this depends on the fuel source used at the mill and needs to be treated case by case.



### Carbon neutral paper

A carbon neutral product is one where the greenhouse gas emissions associated with the production, use and disposal of certified products or services are fully offset by abatement activities or programs.<sup>43</sup> Certification programs verify the measurement and processes involved.

While carbon neutral office paper is not yet available, it is a feasible development.

<sup>43</sup> [www.greenhouse.gov.au/greenhousefriendly/business/certification.html](http://www.greenhouse.gov.au/greenhousefriendly/business/certification.html)

\* Department of Environment and Conservation NSW (2005) 'Benefits of Recycling'

## Section 4: Recycled content paper brands

In New South Wales there are currently 16 brands of recycled content office paper available. They have various characteristics and recommended usage.

To help you source a paper that meets your environmental preferences and performance needs, we have compiled three tables that compare the different brands:

- **Table 1** – Specifications of recycled content office papers
- **Table 2** – Environmental characteristics of recycled content office papers
- **Table 3** – Recommended use of recycled content office papers.

Sample pages of all 16 brands are included at the end of the guide.

### Specifications of recycled content office papers

**Table 1** details specifications for the different brands of recycled content office paper as reported by paper manufacturers and suppliers. They are:

#### Whiteness

The Centre Internationale d'Eclairage (CIE), based in Austria, has developed an internationally recognised standard of paper brightness known as CIE whiteness. The higher the score, the whiter the paper will appear. Recycled content papers were traditionally off-white with a lower CIE whiteness than new paper, however new advances in manufacture have seen an improvement in the relative whiteness of many brands of recycled papers.

While whiteness may be a purchasing factor, it's important to remember that it's an aesthetic consideration and not an indicator of performance.

#### Bleaching process and agents

Bleaching agents are used in both the virgin and recycled paper pulping process for delignification (which improves the paper's lifespan), brightening and stripping of coloured dyes. The chlorine and other chemicals used have environmental impacts.

In the past, the paper industry<sup>44</sup> used elemental chlorine combined with small amounts of chlorine dioxide as the bleaching agent. Elemental chlorine has now been determined to be the source of highly chlorinated organic compounds (dioxins), which are toxic to animal and human health and are considered a probable human carcinogen.

Today, most office papers are manufactured without elemental chlorine and are described as:

**Totally Chlorine Free (TCF)** – virgin pulp (not recycled) that has been bleached with no chlorine compounds. Bleaching agents used include oxygen and hydrogen peroxide.

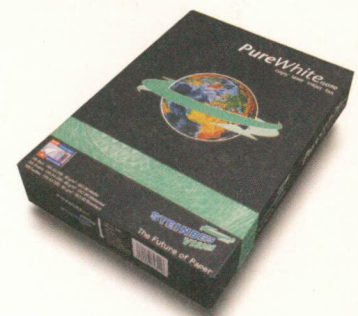
**Elemental Chlorine Free (ECF)** – pulp bleached without 'elemental' chlorine gas but still using chlorine compounds. ECF usually refers to chlorine dioxide. Toxic by-products are reduced by ECF, they are not eliminated.



Australian 10%



Australian 80%

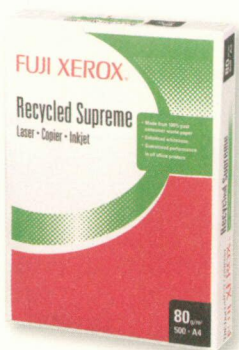


Vision Pure White



Ecocern

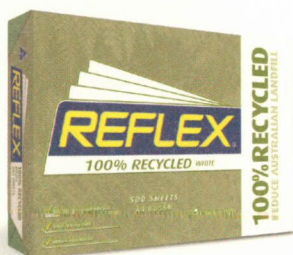
44 [www.sustainableforestprods.org/node/27](http://www.sustainableforestprods.org/node/27)



*Recycled Supreme*



*Reflex Recycled*



*Reflex 100% Recycled*



*Officeworks Recycled*

**Processed Chlorine Free (PCF)** – recycled fibres that are not re-bleached with chlorine compounds.

It's preferable to choose paper that is TCF or PCF as no chlorine is used in the process.

See pages 28 to 31 for websites containing more detailed information about the use of bleaching agents in recycled office papers and possible environmental impacts.

## Archival properties

### Acid free

Acid free paper has a neutral or basic pH of 7 or slightly greater, meaning it is more suitable for archiving than acidic paper. Alkaline papers are preferable to acidic papers as they maintain quality over time and are suitable for long-term storage.

### Lignin free

Lignin is an organic substance that, with cellulose, forms the chief part of woody tissue – that is, it is the bonding element that holds wood fibres together. Lignin free refers to paper made with less than 1% lignin, and is most accurately called low lignin. Papers having a high lignin content (including papers made using a mechanical pulping process) should not be used for archival applications because the paper changes colour and becomes brittle over time.

### Recommended years

Many recycled papers are not recommended for archival purposes because the history of the recycled fibre that has gone into the manufacture of the paper is unknown. Without a guarantee that all fibre in the paper is of archival quality, the manufacturers will not guarantee paper for archival use. However manufacturers often do recommend their paper for a specific number of years, either based on a certain standard or individual recommendations.

## Moisture content

The amount of moisture contained in paper is expressed as a percentage of its total weight. Moisture can influence how the paper performs in office equipment because the dimensional stability of the paper may be altered by changes in temperature and humidity levels. For example, a paper that has high moisture content is likely to curl when put through a photocopier or printer.

All papers listed in **Table 1** have a moisture content of 4–5% and meet the standard specification for office paper.

### Finish

The term 'finish' describes the apparent smoothness or roughness when handling or visually appraising the paper. Paper is produced in a variety of surface finishes, which are expressed in terms of Sheffield, Gurley, Bekk or Bendtsen units. In some cases the Bendtsen units are provided for the 'top side' (TS) or the 'bottom side' (BS) of the paper.

## Opacity

The opacity of a paper is the property that prevents 'show-through' of printing from one side to the other. A paper that has a low opacity rating is more transparent and less suitable for double-sided printing or copying. The opacity of most of the recycled content papers is 91–99%. This is above the minimum requirement for office paper, which is generally around 85%.

## Environmental characteristics of recycled content office papers

**Table 2** presents the environmental characteristics relating to the papers' fibres and the environmental credentials of recycled content paper product and manufacture. It examines:

### Country of manufacture

The country of manufacture refers to the area where the paper was manufactured, not necessarily where the fibre was sourced.

### Recycled fibre

#### Percentages

Office paper can be manufactured from fibres recovered from pre- and post-consumer waste streams.

The table gives the overall percentage of recycled content and the proportions of recycled fibre sourced from pre- or post-consumer waste streams – where they are known. Some manufacturers are not able to distinguish the proportion of pre- and post-consumer waste materials in purchased pulp.

#### Country of origin and source of fibres

The waste stream or source of fibres is also provided. For example, whether the paper was sourced from offices, locally, or kerbside collections, and the country of origin for the recovered fibre.

### Virgin fibre

Detail about virgin fibre is provided in terms of country of origin and type (generally state forest or plantation).

## Environmental labels and certifications

Paper labelling and certifications can provide additional information regarding a product's environmental credentials. This section lists the labels and certifications that products in this guide carry. See pages 9–13 for more information.

#### Certification of virgin fibre

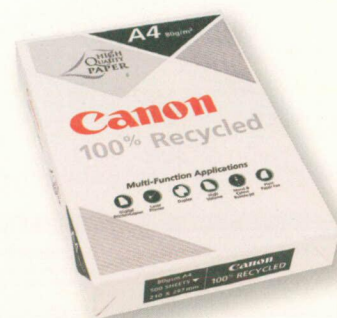
Virgin paper may be awarded with labels or certifications that provide evidence that the source (plantation or forest wood) is managed sustainably according to relevant standards. This includes PEFC and FSC certifications.

#### Independent verification

To boost consumer confidence, companies are increasingly seeking independent verification of their environmental claims. Paper manufacturers and importers providing information for this guide were asked to report if the claims for the recycled content papers (that is, the recycled content) are independently verified – this is most commonly achieved through eco-labelling schemes such as GECA.

#### Environmental credentials of mills

Consumers are now looking beyond the individual characteristics of products to the manufacturers' overall environmental performance and the outputs of the manufacturing



Canon 100% Recycled



Era Pure Copy



Evolve Office



Evolve Business



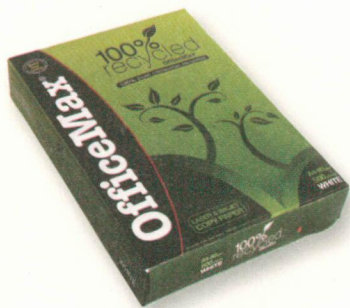
EXP 50R



Green Wrap



IQ Triotec Unique



OfficeMax 100% Recycled

process. Therefore, manufacturers were asked to report if the mill has an EMS currently accredited, recognised by a third party or any other type of certification. The most common accreditation for mills are ISO14001, EMAS or FSC COC.

### Environmental labels

Environmental labelling is one way to increase consumer confidence in the environmental claims made by manufacturers. Some imported products carry internationally accredited environmental labels and some local products carry Australian labels. Environmental labels can be specific to one aspect of the product, e.g. a 'recycled' label may indicate a product has recycled content. Other labels may indicate the product's production meets environmental standards (e.g. the GECA label indicates a product has a good environmental performance throughout its production and life). Labels include GECA, ECNZ, Blue Angel, Nordic Swan, NAPM and FSC (see Section 2).

## Recommended use of recycled content office papers

As well as paper characteristics, it's important to be aware of the recommended use of different papers – and only use them for the purpose for which they were designed.

**Table 3** provides a matrix of supplier recommendations.

The four categories of recommended use provided here are:

### Guaranteed

Where a paper is suitable for a particular use and has been tested extensively across a range of office equipment in a particular category, it is guaranteed by the manufacturer.

### Recommended

Where a paper is suitable for a particular use, it is recommended by the manufacturer for that application. The recommended rating does not involve the same level of testing and the manufacturer's certification of the product as guaranteed products.

### Not Recommended – Quality

Where a paper is not recommended (Q) by the manufacturer, it is because the final quality of the printed product may be affected. This category is only an indication that the quality may be compromised and not that the paper is unsatisfactory for use in office equipment (e.g., it won't cause paper jams). Recycled paper with a low 'whiteness' may be unsuitable for colour printing.

### Not Recommended – Performance

Where a paper is not recommended (P) by the manufacturer, it is because its performance in office equipment may be affected. This category is assigned if the paper is not designed for use in particular office equipment. For example, a particular paper may not be recommended for high speed copying because it is likely to curl and jam.

**Table 1 – Specifications of recycled content office papers**

See pages 17-19 for explanations of the abbreviations and terminology used.

Paper name	Whiteness (CIE)	Bleaching		Archival Properties			Moisture content (%)	Finish (Sheffield/Bendtsen)	Opacity (%)
		Process	Agent	Acid free	Lignin free	Recommended years			
Australian 10%	145	PCF / ECF	Formamidine sulfonic acid / oxygen and chlorine dioxide	Yes*	Yes*	>100*	4.5	145+/-20 (Bendtsen)	92
Australian 80%	145	PCF / ECF	Formamidine sulfonic acid / oxygen and chlorine dioxide	Yes*	Yes*	>100*	4.5	180+/-20 (Bendtsen)	91
Canon 100% Recycled	110	PCF	Formamidine sulfonic acid	Yes	Yes	>100*	4.7 +/- 0.7	275 +/-75 (Bendtsen)	93+/-2
Ecocern	Brown	N/A	None	No	No	+20	<5	Coarse	99
Era Pure Copy	150	PCF	Sodium hydrosulphite and hydrogen peroxide	Yes*	Yes*	>100*	4.5	160+/-20 (Sheffield)	92
Evolve Business	160	PCF	Sodium hydrosulphite and hydrogen peroxide	Yes	Yes	>100**	4.5	160+/-20 (Sheffield)	92
Evolve Office	150	PCF	Sodium hydrosulphite and hydrogen peroxide	Yes	Yes	>100**	4.5	160+/-20 (Sheffield)	91
EXP50R	150	PCF / ECF	Formamidine sulfonic acid / Oxygen and chlorine dioxide	Yes*	Yes*	>100*	4.5	145+/-20 (Bendtsen)	92
Green Wrap	145	PCF / ECF	Formamidine sulfonic acid / Oxygen and chlorine dioxide	Yes*	Yes*	>100*	4.5	180+/-20 (Bendtsen)	91
IQ Triotec Unique	160	PCF / TCF	Oxygen	Yes	Yes	>100**	4.5 +/-0.5	200+/-50 (Bendtsen)	90
OfficeMax 100% Recycled	135+/-3	PCF	Oxygen	Yes	Yes	>100**	<4.5+/-0.4	TS 350+/-100 BS 300+/-100 (Bendtsen)	>93
Officeworks Recycled	135 +/-3	PCF	Oxygen	Yes	Yes	>100**	<4.5	TS 350+/-100 BS 300+/-100 (Bendtsen)	>93
Recycled Supreme	135 +/-3	PCF	Oxygen	Yes	Yes	>100**	<5	TS 350+/-100 BS 300+/-100 (Bendtsen)	>93
Reflex Recycled	150	PCF / ECF	Formamidine sulfonic acid / oxygen and chlorine dioxide	Yes*	Yes*	>100*	4.5	120+/-20 (Bendtsen)	92
Reflex 100% Recycled	150	PCF	Formamidine sulfonic acid	Yes	No	>100**	4.5	200+/-20 (Bendtsen)	91
Vision Pure White	110+/-3	PCF	Oxygen	Yes	Yes	>100**	<4.5	TS 350+/-100 BS 300+/-100 (Bendtsen)	>95

\* According to ISO 9706:1994 Information and documentation – Paper for documents – Requirements for permanence

\*\* According to DIN 6738 – German permanent paper standard (Paper and Board: Lifespan Classes, April 1992) approved by the German Standards Institute

### Table 2 – Environmental characteristics of recycled content office papers

See pages 19-20 for explanations of the abbreviations and terminology used.

Paper name	Country of manufacture	Recycled fibre			Virgin fibre		Environmental labels and certifications			
		Recycled fibre (%)	Country of origin	Source of fibres	Type	Country of origin	Certification of virgin fibre	Verification of recycled content claims	Environmental credentials of mills	Environmental labels on product
Australian 10%	Australia	10% Pre- and post-consumer	Australia	Commercial and household sources, including printed wastes and returns from the distribution chain	State forest and plantation	Australia, New Zealand, Sth. America	PEFC or equivalent and FSC certified	No	AS/NZS ISO 14001, FSC, PEFC	No
Australian 80%	Australia	80% Pre- and post-consumer	Australia	Commercial and household sources, including printed wastes and returns from the distribution chain	Plantation	New Zealand	PEFC or equivalent and FSC certified	GECA	AS/NZS ISO 14001, FSC, PEFC	GECA
Canon 100% Recycled	Austria	100% 67% post-consumer and 33% pre consumer	Austria, Switzerland, Germany	Industrial scrap and collected office papers	N/A	N/A	N/A	Blue Angel	ISO 14001	Blue Angel, Nordic Swan, NAPM
Ecocern	Australia	100% Post-consumer	Australia	Household waste and industrial scrap such as cardboard boxes	N/A	N/A	N/A	No	No	No
Era Pure Copy	France	100% Pre- and post-consumer	France	Household and office waste, printers waste, converters waste	N/A	N/A	N/A	FSC	ISO14001, FSC, PEFC	FSC 100% Recycled
Evolve Business	UK	100% Pre- and post-consumer	UK	Household and office waste, printers waste, converters waste	N/A	N/A	N/A	Paper Profile	ISO14001, FSC, PEFC, EMAS	No
Evolve Office	UK	100% Pre- and post-consumer	UK	Household and office waste, printers waste, converters waste	N/A	N/A	N/A	Paper Profile	ISO14001, FSC, PEFC, EMAS	No
EXP50R	Australia	50% Pre- and post-consumer	Australia	Commercial and household sources, including printed wastes and returns from the distribution chain	State forest and plantation	Australia, New Zealand, Sth. America	PEFC or equivalent and FSC controlled wood.	No	AS/NZS ISO 14001, FSC, PEFC	No



Paper name	Country of manufacture	Recycled fibre			Virgin fibre		Environmental labels and certifications			
		Recycled fibre (%)	Country of origin	Source of fibres	Type	Country of origin	Certification of virgin fibre	Verification of recycled content claims	Environmental credentials of mills	Environmental labels on product
Green Wrap	Australia	60% Pre- and post-consumer	Australia	Commercial and household sources, including printed wastes and returns from the distribution chain	State forest and plantation	Australia, New Zealand, Sth. America	PEFC or equivalent and FSC controlled wood.	No	AS/NZS ISO 14001, FSC, PEFC	No
IQ Triotec Unique	Austria	30% Post-consumer	Austria	Newspapers, magazines, kerbside waste	Forest and plantation	Various, mostly South Africa	FSC Mixed Sources (controlled wood)	No	ISO14001	FSC Mixed Sources (controlled wood)
OfficeMax 100% Recycled	Germany	100% Post-consumer	Germany	Magazines, book waste, newspapers, sorted household waste and office waste	N/A	N/A	N/A	Blue Angel	ISO 14001, EMAS	Blue Angel, Nordic Swan, EMAS
Officeworks Recycled	Germany	100% Post-consumer	Germany	Magazines, book waste, newspapers, sorted household waste and office waste	N/A	N/A	N/A	Blue Angel	ISO 14001, EMAS	Blue Angel, Nordic Swan, EMAS
Recycled Supreme	Germany	100% Post-consumer	Germany	Office waste, newsprint, catalogues and carton box board	N/A	N/A	N/A	Blue Angel	ISO 14001, EMAS	Blue Angel, Nordic Swan
Reflex Recycled	Australia	50% Pre- and post-consumer	Australia	Commercial and household sources, including printed wastes and returns from the distribution chain	State forest and plantation	Australia, New Zealand, Sth. America	PEFC or equivalent and FSC certified.	ECNZ	AS/NZS ISO 14001, FSC, PEFC	FSC, ECNZ
Reflex 100% Recycled	Australia	100% Pre- and post-consumer	Australia	Commercial and household sources, including printed wastes and returns from the distribution chain	N/A	N/A	N/A	No	AS/NZS ISO 14001, FSC, PEFC	No
Vision Pure White	Germany	100% Post-consumer	Germany	Magazines, book waste, newspapers, sorted household waste and office waste	N/A	N/A	N/A	Blue Angel	ISO 14001, EMAS	Blue Angel, Nordic Swan



## Section 5: Contacts and further information

### Who sells recycled content office paper?

This list will help you find recycled content office paper.

Company name	Contact	Website	Email	Papers available
Australia Post	13 13 18	<a href="http://www.auspost.com.au">www.auspost.com.au</a>	N/A	Evolve Business Reflex Recycled Reflex 100% Recycled
BiLo	Not provided	<a href="http://www.bilo.com.au">www.bilo.com.au</a>	N/A	Reflex Recycled
Big W	1800 251 311	<a href="http://www.bigw.com.au">www.bigw.com.au</a>	N/A	Reflex Recycled
Canon	13 13 83	<a href="http://www.canon.com.au">www.canon.com.au</a>	N/A	Canon 100% Recycled
Complete Office Supplies	02 8832 6300	<a href="http://www.cos.net.au">www.cos.net.au</a>	N/A	Australian 10% Australian 80% Era Pure Copy Evolve Office Reflex Recycled
Coles	1800 061 562	<a href="http://www.coles.com.au">www.coles.com.au</a>	N/A	Reflex Recycled
Corporate Express Australia	13 26 44	<a href="http://www.ce.com.au">www.ce.com.au</a>	N/A	Australian 10% Australian 80% EXP 50R Reflex Recycled Reflex 100% Recycled
Dalton	02 8746 8200	<a href="http://www.dalton.com.au">www.dalton.com.au</a>	<a href="mailto:epaper.nsw@dalton.com.au">epaper.nsw@dalton.com.au</a>	Australian 10% Australian 80% Reflex Recycled
Ecocern	02 9337 2737	<a href="http://www.ecocern.com">www.ecocern.com</a>	<a href="mailto:ecocern@ecocern.com">ecocern@ecocern.com</a>	Ecocern Evolve Office
Edwards Dunlop	02 8746 8600	<a href="http://www.edpaper.com.au">www.edpaper.com.au</a>	N/A	Evolve Business Evolve Office Vision Pure White
Especially Office	02 9909 8807	<a href="http://www.especiallyoffice.com">www.especiallyoffice.com</a>	<a href="mailto:sales@especiallyoffice.com">sales@especiallyoffice.com</a>	Evolve Office IQ Triotec Unique Reflex Recycled Reflex 100% Recycled Vision Pure White
Fuji Xerox	13 14 11	<a href="http://www.xeroxsupplies.com.au">www.xeroxsupplies.com.au</a>	<a href="mailto:supplieswebsupport@aus.fujixerox.com">supplieswebsupport@aus.fujixerox.com</a>	Green Wrap Recycled Supreme

Company name	Contact	Website	Email	Papers available
Genesis	1300 842 000	<a href="http://www.genesisaustr.com.au">www.genesisaustr.com.au</a>	<a href="mailto:sales@genesisaustr.com.au">sales@genesisaustr.com.au</a>	Australian 10% Australian 80% Canon 100% Recycled Evolve Office Evolve Business Green Wrap IQ Triotec Unique Officemax 100% Recycled Reflex Recycled Reflex 100% Recycled Recycled Supreme
Imagetec Solutions	1300 787 871	<a href="http://www.imagetec.com.au">www.imagetec.com.au</a>	<a href="mailto:business_supplies@imagetec.com.au">business_supplies@imagetec.com.au</a>	Evolve Office
Kmart	1800 124 125	<a href="http://www.kmart.com.au">www.kmart.com.au</a>	N/A	Reflex Recycled
K.W.Doggett	03 8470 2244	<a href="http://www.kwdoggett.com.au">www.kwdoggett.com.au</a>	<a href="mailto:cdoggett@kwdoggett.com">cdoggett@kwdoggett.com</a>	Australian 10% Evolve Office
Longbottom Paper Pty Ltd	02 9709 3299	<a href="http://www.longbottom.com.au">www.longbottom.com.au</a>	<a href="mailto:sales@longbottom.com.au">sales@longbottom.com.au</a>	IQ Triotec Unique
Lyreco	1300 36 36 08	<a href="http://www.lyreco.com.au">www.lyreco.com.au</a>	N/A	Australian 10% Australian 80% Evolve Office Reflex Recycled
Mondi	03 9501 2331	<a href="http://www.mondigroup.com">www.mondigroup.com</a>	N/A	IQ Triotec Unique Canon 100% Recycled
Neco Holdings Pty Ltd	02 9028 7900	<a href="http://www.neco.com.au">www.neco.com.au</a>	<a href="mailto:product@neco.com.au">product@neco.com.au</a>	Australian 80% Ecocern Evolve Business Evolve Office Reflex Recycled Vision Pure White
OfficeMax	1800 817 370	<a href="http://www.officemax.com.au">www.officemax.com.au</a>	N/A	Australian 10% Australian 80% Canon 100% Recycled Evolve Office IQ Triotec Reflex Recycled Officemax 100% Recycled
Office National	Varies according to locality	<a href="http://www.officenational.com.au">www.officenational.com.au</a>	N/A	Australian 80% Evolve Office Reflex Recycled Reflex 100% Recycled
Officeworks	1300 633 423	<a href="http://www.officeworks.com.au">www.officeworks.com.au</a>	N/A	Australian 80% Officeworks Recycled Reflex Recycled Reflex 100% Recycled
RAM Paper	02 8787 7979	<a href="http://www.rampaper.com.au">www.rampaper.com.au</a>	<a href="mailto:rampapersw@rampaper.com.au">rampapersw@rampaper.com.au</a>	Australian 80% Reflex Recycled

Company name	Contact	Website	Email	Papers available
Shoalhaven Paper Pty Ltd	02 4421 5199	N/A	paper@shoalhaven.net.au	Australian 10% Australian 80% Evolve Office
Specialty Office Supplies	02 9428 9000	www.sos-supplies.com	sales@sos-supplies.com	Australian 10% Australian 80% Evolve Office Green Wrap Reflex Recycled Reflex 100% Recycled Vision Pure White
Target Australia Pty Ltd	1300 130 000	www.target.com.au	N/A	Reflex Recycled
Todae	1300 138 483	www.todae.com.au	info@todae.com.au	Ecocern Evolve Office
WC Penfold Stationary Stores	02 9603 9750	www.wcpdirect.com.au	N/A	Australian 80% Evolve Office Green Wrap Reflex Recycled Vision Pure White
Woolworths	N/A	www.woolworths.com.au	N/A	Reflex Recycled
NSW government agencies can find more information about purchasing at <a href="http://www.contractservices.nswp.commerce.nsw.gov.au/Home.htm">www.contractservices.nswp.commerce.nsw.gov.au/Home.htm</a>				

## Recycling your company's office paper

For information about recycling your office paper, look under Recycling Services in the *Yellow Pages*, visit Recycling Near You at [www.recyclingnearyou.org.au](http://www.recyclingnearyou.org.au), or visit the DECC website [www.environment.nsw.gov.au](http://www.environment.nsw.gov.au) or phone (02) 8837 6000.

Other ways of finding out about the types and quality of recycling services available in your area are to make enquiries at other companies nearby or ask the Building Manager for your office building.



## Where to find out more about recycled content products

### In Australia

#### Department of Environment and Climate Change NSW

[www.environment.nsw.gov.au](http://www.environment.nsw.gov.au)

DECC's Sustainability Programs Division works in partnership with industry, governments and the community to implement state-wide and local programs. The NSW Waste Avoidance and Resource Recovery Strategy 2007 provides the framework and targets for waste reduction and better use of resources. The website provides access to directories, tools, reports and other information including the *Office Products Guide* and *Waste Reduction Guides for Office Buildings*.

#### Australian Council of Recyclers (ACOR)

<http://www.acor.org.au/>

The Australian Council of Recyclers (ACOR) is Australia's peak industry association representing companies involved in recovering secondary resources. ACOR's mission is to maximise resource recovery and achieve the highest resource order of Australia's secondary materials. The website provides information and answers to frequently asked questions regarding recycling materials.

#### Sustainable Choice

[www.lgsa-plus.net.au/sustainablechoice](http://www.lgsa-plus.net.au/sustainablechoice)

Sustainable Choice – a sustainable procurement program for NSW local government – aims to increase the level of sustainable purchasing within the local government sector. The website also contains a sustainable products and services database that can be accessed by all internet users.

#### Australian Competition and Consumer Commission (ACCC)

[www.accc.gov.au/content/index.phtml/itemId/815763](http://www.accc.gov.au/content/index.phtml/itemId/815763)

The ACCC website provides a guide to Green Marketing and the *Trade Practices Act* to educate businesses about their obligations regarding environmental claims under the *Trade Practices Act 1974*. The information is useful for assessing the strength of environmental claims.

#### ECO-Buy Limited

[www.ecobuy.org.au](http://www.ecobuy.org.au)

ECO-Buy is a not-for-profit company established to encourage the purchasing of green products.

#### EcoOFFICE

[www.ecoOFFICE.com.au](http://www.ecoOFFICE.com.au)

The EcoOFFICE website was established by the Nature Conservation Council of New South Wales. It's an invaluable site, packed with ideas and practical tips on how to reduce the environmental impact of your office.

## The Green Pages

[www.thegreenpages.com.au](http://www.thegreenpages.com.au)

This is an online eco-directory including a wide range of products and services that meet certain environmental criteria.

## Good Environmental Choice Australia (GECA)

[www.aela.org.au](http://www.aela.org.au)

GECA is a non-profit organisation working to provide the Australian market with an independent environmental labelling system in line with international best practice standards. The website provides information about sustainable procurement, the GECA label and sustainable living.

## Paper Round

[www.paperround.com.au](http://www.paperround.com.au)

The Australian print and paper industries' product stewardship initiative is dedicated to addressing concerns about sustainable paper outcomes. The website provides news articles and resources on paper.

## Paper to Paper

[www.papertopaper.com.au](http://www.papertopaper.com.au)

Paper to Paper offers products and services in paper recovery, paper recycling, product stewardship and waste auditing.

## Commissioner for Environmental Sustainability Victoria

[www.ces.vic.gov.au](http://www.ces.vic.gov.au)

The Commissioner for Environmental Sustainability Victoria website contains information and a guide on choosing recycled office paper.

## Buy Recycled Business Alliance (BRBA)

[www.brba.com.au](http://www.brba.com.au)

The BRBA is a non-profit organisation which promotes the purchase and use of recycled content products and materials through leadership by example, education and information, research and development and partnerships. The recently launched Recycled Product Directory includes a detailed listing of recycled content products (including some office papers) available in Australia.

## In New Zealand

### Environmental Choice New Zealand (ECNZ)

[www.enviro-choice.org.nz](http://www.enviro-choice.org.nz)

The website of the ECNZ label is managed by the New Zealand Ecolabelling Trust. This ecolabel recognises the genuine moves made by manufacturers to reduce the environmental impacts of their products. It provides a credible and independent guide for consumers who want to purchase products that are better for the environment.



## New Zealand Business Council for Sustainable Development

[www.nzbcSD.org.nz/paper/Paper\\_buying\\_guide.pdf](http://www.nzbcSD.org.nz/paper/Paper_buying_guide.pdf)

The New Zealand Business Council for Sustainable Development website has a downloadable guide 'Which Paper', to help consumers select sustainable paper and other useful information on paper and the environment.

## In the United States

### Chlorine Free Products Association

[www.chlorinefreeproducts.org](http://www.chlorinefreeproducts.org)

The Chlorine Free Products Association is a unique trade association representing companies dedicated to implementing advanced technologies and/or groups supporting products free of chlorine chemistry. Advances in TCF pulp and paper making, water purification, air conditioning etc. make it possible to eliminate releases of toxic chlorinated compounds into our air, water, and soil. The website includes information on how to tell whether paper has been produced using chlorine processes and certification marks for chlorine free products.

### Conservatree

[www.conservatree.com](http://www.conservatree.com)

Conservatree is a non profit organisation that provides extensive resources on ecologically sustainable paper markets. The website includes information on standards for recycled content papers and labelling of products, consumer information and answers to concerns and myths that create resistance to environmental papers, as well as strategies for source reduction, to reduce paper use as well as costs.

### Dolphin Blue

[www.dolphinblue.com](http://www.dolphinblue.com)

Dolphin Blue has an assortment of recycled content office products. Dolphin Blue products contain, at minimum, 20% post-consumer recycled material. Packages and labels are made using only post-consumer recycled materials and are printed using only soy and vegetable-based inks. Dolphin Blue supports initiatives that foster education and awareness in issues of sustainability, energy alternatives, organic agriculture and reducing waste, and educates consumers on the effects of conventional office product consumption. The website includes information resources about sustainable purchasing.

### Office of the Federal Environmental Executive (OFEE)

[www.ofee.gov](http://www.ofee.gov)

The Office of the Federal Environmental Executive (OFEE) was formed in 1993 to oversee the implementation of Executive Order 12873, Federal Acquisition, Recycling, and Waste Prevention. The OFEE advocates for, coordinates and assists environmental efforts of the community in waste prevention, recycling, and the acquisition of recycled and environmentally preferable products and services. Site resources include a downloadable study of performance of paper containing 30% post-consumer content compared with other papers, a newsletter and success stories.

### Reach for Unbleached Campaign

[www.rfu.org](http://www.rfu.org)

Reach for Unbleached started as a campaign to encourage consumer acceptance of unbleached or oxygen-bleached paper for many routine uses. The campaign now encourages other aspects of environmentally preferred paper use, such as reduction, and





also includes a broad focus on toxics in its work towards sustainability in the pulp and paper industry. Its online publication, Mill-Watch, features news, analysis, resources and contacts for pulp and paper issues and paper and pulp mill monitoring.

## Recycled Paper Coalition

[www.papercoalition.org](http://www.papercoalition.org)

The Recycled Paper Coalition is an innovative group of major organisations representing a unique effort to rethink traditional business practices regarding office paper purchase and usage. The website includes information/publications on paper-related terminology and symbols, identifying the paper product for a buy recycled program, paper use reduction tips, how to cut costs while buying recycled, recycled paper coalition surveys and a recycled paper fact sheet.

## Environmental Defense Fund (EDF)

[www.edf.org](http://www.edf.org)

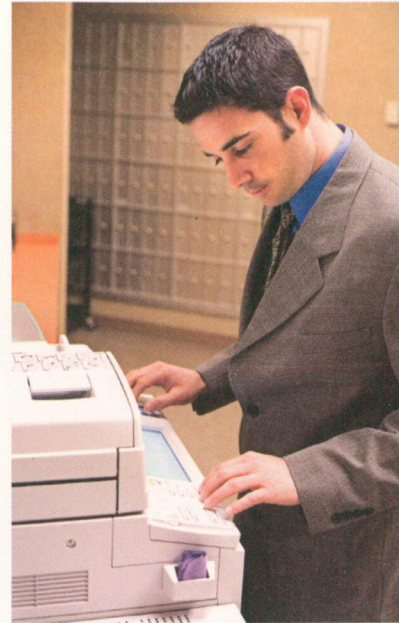
The EDF is a non-profit environmental advocacy group working across a range of environmental issues.

## In Europe

### Paper Profile

[www.paperprofile.com](http://www.paperprofile.com)

Paper Profile is a voluntary environmental product declaration scheme developed and provided by paper producers in Europe.



## Invitation to contribute to updates of *Know your paper*

We understand that the recycled content office paper market is constantly evolving as new products become available and suppliers update paper stocks.

We welcome all feedback and information about new paper stocks and market trends to ensure this guide is as an up-to-date and useful resource.

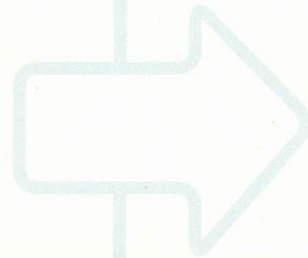
### Please forward any information or feedback to:

[sustainability@environment.nsw.gov.au](mailto:sustainability@environment.nsw.gov.au)

Department of Environment and Climate Change NSW  
Level 2, 1 Fitzwilliam Street, Parramatta NSW 2150  
PO Box 644, Parramatta NSW 2124

Phone: (02) 8837 6000 Fax: (02) 8837 6099

APPENDIX:  
SAMPLES OF ALL  
RECYCLED PAPERS  
with their details  
from Tables 1, 2 and 3



# This page is printed on Australian 10%

## Specifications of recycled content office papers

Whiteness (CIE)	Bleaching		Archival properties			Moisture content (%)	Finish (Sheffield/Bendtsen)	Opacity (%)
	Process	Agent	Acid free	Lignin free	Recommended years			
145	PCF / ECF	Formamidine sulfinic acid / oxygen and chlorine dioxide	Yes*	Yes*	>100*	4.5	145+/-20 (Bendtsen)	92

## Environmental characteristics of recycled content office papers

Country of manufacture	Recycled fibre source			Virgin fibre source		Certification			
	Recycled fibre (%)	Country of origin	Source of fibres	Type	Country of origin	Certification of virgin fibre	Verification of recycled content claims	Environmental credentials of mills	Environmental labels on product
Australia	10% Pre- and post-consumer	Australia	Commercial and household sources, including printed wastes and returns from the distribution chain	State forest & plantation	Australia, New Zealand, Sth. America	PEFC or equivalent and FSC certified	No	AS/NZS ISO 14001, FSC, PEFC	No

## Recommended use

Manufacturers recommended use (G, R, NR-Q, NR-P)							
Copying high volume	Colour copying	Low-medium volume laser printing	High volume laser printing	Ink jet printing (text)	Ink jet printing (graphics)	Faxing	Duplexing
Guaranteed	Guaranteed	Guaranteed	Guaranteed	Guaranteed	Guaranteed	Guaranteed	Guaranteed

\* According to ISO 9706:1994 Information and documentation – Paper for documents – Requirements for permanence.

\*\* According to DIN 6738 - German permanent paper standard (Paper and Board: Lifespan Classes, April 1992) approved by the German Standards Institute.

Information extracted from tables 1,2 and 3



# This page is printed on Australian 80%

## Specifications of recycled content office papers

Whiteness (CIE)	Bleaching		Archival properties			Moisture content (%)	Finish (Sheffield/Bendtsen)	Opacity (%)
	Process	Agent	Acid free	Lignin free	Recommended years			
145	PCF / ECF	Formamidine sulfinic acid / oxygen and chlorine dioxide	Yes*	Yes*	>100*	4.5	180+/-20 (Bendtsen)	91

## Environmental characteristics of recycled content office papers

Country of manufacture	Recycled fibre source			Virgin fibre source		Certification			
	Recycled fibre (%)	Country of origin	Source of fibres	Type	Country of origin	Certification of virgin fibre	Verification of recycled content claims	Environmental credentials of mills	Environmental labels on product
Australia	80% Pre- and post-consumer	Australia	Commercial and household sources, including printed wastes and returns from the distribution chain	Plantation	New Zealand	PEFC or equivalent and FSC certified	GECA	AS/NZS ISO 14001, FSC, PEFC	GECA

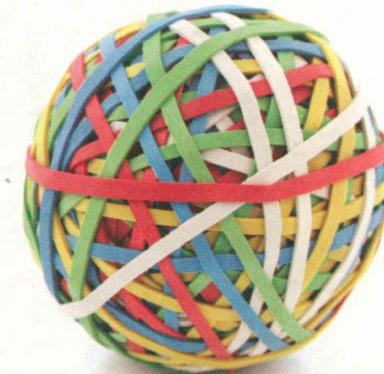
## Recommended use

Manufacturers recommended use (G, R, NR-Q, NR-P)							
Copying high volume	Colour copying	Low-medium volume laser printing	High volume laser printing	Ink jet printing (text)	Ink jet printing (graphics)	Faxing	Duplexing
Guaranteed	Guaranteed	Guaranteed	Guaranteed	Guaranteed	Guaranteed	Guaranteed	Guaranteed

\* According to ISO 9706:1994 Information and documentation – Paper for documents – Requirements for permanence.

\*\* According to DIN 6738 - German permanent paper standard (Paper and Board: Lifespan Classes, April 1992) approved by the German Standards Institute.

Information extracted from tables 1,2 and 3



# This page is printed on Canon 100% Recycled

## Specifications of recycled content office papers

Whiteness (CIE)	Bleaching		Archival properties			Moisture content (%)	Finish (Sheffield/Bendtsen)	Opacity (%)
	Process	Agent	Acid free	Lignin free	Recommended years			
110	PCF	Formamidine sulfinic acid	Yes	Yes	>100*	4.7 +/- 0.7	275 +/- 75 (Bendtsen)	93 +/- 2

## Environmental characteristics of recycled content office papers

Country of manufacture	Recycled fibre source			Virgin fibre source		Certification			
	Recycled fibre (%)	Country of origin	Source of fibres	Type	Country of origin	Certification of virgin fibre	Verification of recycled content claims	Environmental credentials of mills	Environmental labels on product
Austria	100% 67% post-consumer 33% pre-consumer	Austria, Switzerland, Germany	Industrial scrap and collected office papers	N/A	N/A	N/A	Blue Angel	ISO 14001	Blue Angel, Nordic Swan, NAPM

## Recommended use

Manufacturers recommended use (G, R, NR-Q, NR-P)							
Copying high volume	Colour copying	Low-medium volume laser printing	High volume laser printing	Ink jet printing (text)	Ink jet printing (graphics)	Faxing	Duplexing
Guaranteed	Not Recommended – quality	Guaranteed	Guaranteed	Recommended	Not Recommended – quality	Guaranteed	Guaranteed

\* According to ISO 9706:1994 Information and documentation – Paper for documents – Requirements for permanence.

\*\* According to DIN 6738 - German permanent paper standard (Paper and Board: Lifespan Classes, April 1992) approved by the German Standards Institute.

Information extracted from tables 1,2 and 3



# This page is printed on Ecocern

## Specifications of recycled content office papers

Whiteness (CIE)	Bleaching		Archival properties			Moisture content (%)	Finish (sheffield/Bendtsen)	Opacity (%)
	Process	Agent	Acid free	Lignin free	Recommended years			
Brown	N/A	None	No	No	+20	<5	Coarse	99

## Environmental characteristics of recycled content office papers

Country of manufacture	Recycled fibre source			Virgin fibre source			Certification		
	Recycled fibre (%)	Country of origin	Source of fibres	Type	Country of origin	Certification of virgin fibre	Verification of recycled content claims	Environmental credentials of mills	Environmental labels on product
Australia	100% Post-consumer	Australia	Household waste and industrial scrap such as cardboard boxes	N/A	N/A	N/A	N/A	No	No

## Recommended use

Manufacturers recommended use (G, R, NR-Q, NR-P)							
Copying high volume	Colour copying	Low-medium volume laser printing	High volume laser printing	Ink jet printing (text)	Ink jet printing (graphics)	Faxing	Duplexing
Recommended	Not Recommended – quality	Guaranteed	Guaranteed	Not Recommended – quality	Not Recommended – quality	Not Recommended – performance	Guaranteed

\* According to ISO 9706:1994 Information and documentation – Paper for documents – Requirements for permanence.

\*\* According to DIN 6738 - German permanent paper standard (Paper and Board: Lifespan Classes, April 1992) approved by the German Standards Institute.

Information extracted from tables 1,2 and 3



# This page is printed on Era Pure Copy

## Specifications of recycled content office papers

Whiteness (CIE)	Bleaching		Archival properties			Moisture content (%)	Finish (Sheffield/Bendtsen)	Opacity (%)
	Process	Agent	Acid free	Lignin free	Recommended years			
150	PCF	Sodium hydrosulphite and hydrogen peroxide	Yes*	Yes*	>100*	4.5	160+/-20 (Sheffield)	92

## Environmental characteristics of recycled content office papers

Country of manufacture	Recycled fibre source			Virgin fibre source		Certification			
	Recycled fibre (%)	Country of origin	Source of fibres	Type	Country of origin	Certification of virgin fibre	Verification of recycled content claims	Environmental credentials of mills	Environmental labels on product
France	100% Pre- and post-consumer	France	Household and office waste, printers waste, converters waste	N/A	N/A	N/A	FSC	ISO14001, FSC, PEFC	FSC 100% Recycled

## Recommended use

Manufacturers recommended use (G, R, NR-Q, NR-P)							
Copying high volume	Colour copying	Low-medium volume laser printing	High volume laser printing	Ink jet printing (text)	Ink jet printing (graphics)	Faxing	Duplexing
Guaranteed	Guaranteed	Guaranteed	Guaranteed	Guaranteed	Guaranteed	Guaranteed	Guaranteed

\* According to ISO 9706:1994 Information and documentation – Paper for documents – Requirements for permanence.

\*\* According to DIN 6738 - German permanent paper standard (Paper and Board: Lifespan Classes, April 1992) approved by the German Standards Institute.

Information extracted from tables 1,2 and 3



# This page is printed on Evolve Business

## Specifications of recycled content office papers

Whiteness (CIE)	Bleaching		Archival properties			Moisture content (%)	Finish (Sheffield/ Bendtsen)	Opacity (%)
	Process	Agent	Acid free	Lignin free	Recommended years			
160	PCF	Sodium hydrosulphite and hydrogen peroxide	Yes	Yes	>100**	4.5	160+/-20 (Sheffield)	92

## Environmental characteristics of recycled content office papers

Country of manufacture	Recycled fibre source			Virgin fibre source		Certification			
	Recycled fibre (%)	Country of origin	Source of fibres	Type	Country of origin	Certification of virgin fibre	Verification of recycled content claims	Environmental credentials of mills	Environmental labels on product
UK	100% Pre- and post-consumer	UK	Household and office waste, printers waste, converters waste	N/A	N/A	N/A	Paper Profile	ISO14001, FSC, PEFC, EMAS	No

## Recommended use

Manufacturers recommended use (G, R, NR-Q, NR-P)							
Copying high volume	Colour copying	Low-medium volume laser printing	High volume laser printing	Ink jet printing (text)	Ink jet printing (graphics)	Faxing	Duplexing
Guaranteed	Guaranteed	Guaranteed	Guaranteed	Guaranteed	Guaranteed	Recommended	Recommended

\* According to ISO 9706:1994 Information and documentation – Paper for documents – Requirements for permanence.

\*\* According to DIN 6738 - German permanent paper standard (Paper and Board: Lifespan Classes, April 1992) approved by the German Standards Institute.

Information extracted from tables 1,2 and 3





# This page is printed on Evolve Office

## Specifications of recycled content office papers

Whiteness (CIE)	Bleaching		Archival properties			Moisture content (%)	Finish (Sheffield/Bendtsen)	Opacity (%)
	Process	Agent	Acid free	Lignin free	Recommended years			
150	PCF	Sodium hydrosulphite and hydrogen peroxide	Yes	Yes	>100**	4.5	160+/-20 (Sheffield)	91

## Environmental characteristics of recycled content office papers

Country of manufacture	Recycled fibre source			Virgin fibre source		Certification			
	Recycled fibre (%)	Country of origin	Source of fibres	Type	Country of origin	Certification of virgin fibre	Verification of recycled content claims	Environmental credentials of mills	Environmental labels on product
UK	100% Pre- and post-consumer	UK	Household and office waste, printers waste, converters waste	N/A	N/A	N/A	Paper Profile	ISO14001, FSC, PEFC, EMAS	No

## Recommended use

Manufacturers recommended use (G, R, NR-Q, NR-P)							
Copying high volume	Colour copying	Low-medium volume laser printing	High volume laser printing	Ink jet printing (text)	Ink jet printing (graphics)	Faxing	Duplexing
Guaranteed	Recommended	Guaranteed – Black & White Recommended – Colour	Guaranteed – Black & White Recommended – Colour	Guaranteed – Black & White Recommended – Colour	Guaranteed – Black & White Recommended – Colour	Recommended	Recommended

\* According to ISO 9706:1994 Information and documentation – Paper for documents – Requirements for permanence.

\*\* According to DIN 6738 - German permanent paper standard (Paper and Board: Lifespan Classes, April 1992) approved by the German Standards Institute.

Information extracted from tables 1,2 and 3



# This page is printed on EXP50R

## Specifications of recycled content office papers

Whiteness (CIE)	Bleaching		Archival properties			Moisture content (%)	Finish (Sheffield/Bendtsen)	Opacity (%)
	Process	Agent	Acid free	Lignin free	Recommended years			
150	PCF / ECF	Formamidine sulfinic acid / Oxygen and chlorine dioxide	Yes*	Yes*	>100*	4.5	145+/-20 (Bendtsen)	92

## Environmental characteristics of recycled content office papers

Country of manufacture	Recycled fibre source			Virgin fibre source		Certification			
	Recycled fibre (%)	Country of origin	Source of fibres	Type	Country of origin	Certification of virgin fibre	Verification of recycled content claims	Environmental credentials of mills	Environmental labels on product
Australia	50% Pre- and post-consumer	Australia	Commercial and household sources, including printed wastes and returns from the distribution chain	State forest & plantation	Australia, New Zealand, Sth. America	PEFC or equivalent and FSC controlled wood.	No	AS/NZS ISO 14001, FSC, PEFC	No

## Recommended use

Manufacturers recommended use (G, R, NR-Q, NR-P)							
Copying high volume	Colour copying	Low-medium volume laser printing	High volume laser printing	Ink jet printing (text)	Ink jet printing (graphics)	Faxing	Duplexing
Guaranteed	Guaranteed	Guaranteed	Guaranteed	Guaranteed	Guaranteed	Guaranteed	Guaranteed

\* According to ISO 9706:1994 Information and documentation – Paper for documents – Requirements for permanence.

\*\* According to DIN 6738 - German permanent paper standard (Paper and Board: Lifespan Classes, April 1992) approved by the German Standards Institute.

Information extracted from tables 1,2 and 3



# This page is printed on Green Wrap

## Specifications of recycled content office papers

Whiteness (CIE)	Bleaching		Archival properties			Moisture content (%)	Finish (Sheffield/Bendtsen)	Opacity (%)
	Process	Agent	Acid free	Lignin free	Recommended years			
145	PCF / ECF	Formamidine sulfinic acid / Oxygen and chlorine dioxide	Yes*	Yes*	>100*	4.5	180+/-20 (Bendtsen)	91

## Environmental characteristics of recycled content office papers

Country of manufacture	Recycled fibre source			Virgin fibre source		Certification			
	Recycled fibre (%)	Country of origin	Source of fibres	Type	Country of origin	Certification of virgin fibre	Verification of recycled content claims	Environmental credentials of mills	Environmental labels on product
Australia	60% Pre- and post-consumer	Australia	Commercial and household sources, including printed wastes and returns from the distribution chain	State forest & plantation	Australia, New Zealand, Sth. America	PEFC or equivalent and FSC controlled wood.	No	AS/NZS ISO 14001, FSC, PEFC	No

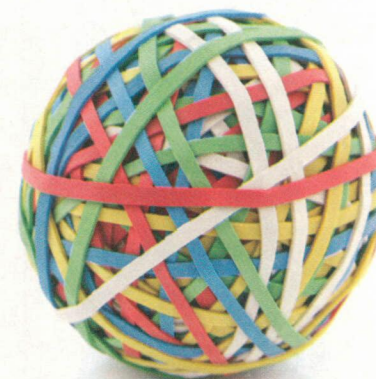
## Recommended use

Manufacturers recommended use (G, R, NR-Q, NR-P)							
Copying high volume	Colour copying	Low-medium volume laser printing	High volume laser printing	Ink jet printing (text)	Ink jet printing (graphics)	Faxing	Duplexing
Guaranteed	Guaranteed	Guaranteed	Guaranteed	Recommended	Recommended	Guaranteed	Guaranteed

\* According to ISO 9706:1994 Information and documentation – Paper for documents – Requirements for permanence.

\*\* According to DIN 6738 - German permanent paper standard (Paper and Board: Lifespan Classes, April 1992) approved by the German Standards Institute.

Information extracted from tables 1,2 and 3



# This page is printed on IQ Triotec Unique

## Specifications of recycled content office papers

Whiteness (CIE)	Bleaching		Archival properties			Moisture content (%)	Finish (Sheffield/Bendtsen)	Opacity (%)
	Process	Agent	Acid free	Lignin free	Recommended years			
160	PCF / TCF	Oxygen	Yes	Yes	>100**	4.5 +/-0.5	200+/-50 (Bendtsen)	90

## Environmental characteristics of recycled content office papers

Country of manufacture	Recycled fibre source			Virgin fibre source		Certification			
	Recycled fibre (%)	Country of origin	Source of fibres	Type	Country of origin	Certification of virgin fibre	Verification of recycled content claims	Environmental credentials of mills	Environmental labels on product
Austria	30% Post-consumer	Austria	Newspapers, magazines, kerbside waste	Forest and Plantation	Various, mostly South Africa	FSC Mixed Sources (controlled wood)	No	ISO14001	FSC Mixed Sources (controlled wood)

## Recommended use

Manufacturers recommended use (G, R, NR-Q, NR-P)							
Copying high volume	Colour copying	Low-medium volume laser printing	High volume laser printing	Ink jet printing (text)	Ink jet printing (graphics)	Faxing	Duplexing
Guaranteed	Not Recommended – quality	Guaranteed	Guaranteed	Guaranteed	Guaranteed	Guaranteed	Guaranteed



\* According to ISO 9706:1994 Information and documentation – Paper for documents – Requirements for permanence.

\*\* According to DIN 6738 - German permanent paper standard (Paper and Board: Lifespan Classes, April 1992) approved by the German Standards Institute.

Information extracted from tables 1,2 and 3

# This page is printed on Officemax 100% Recycled

## Specifications of recycled content office papers

Whiteness (CIE)	Bleaching		Archival properties			Moisture content (%)	Finish (Sheffield/Bendtsen)	Opacity (%)
	Process	Agent	Acid free	Lignin free	Recommended years			
135+/-3	PCF	Oxygen	Yes	Yes	>100**	<4.5+/-0.4	TS 350+/-100 BS 300+/-100 (Bendtsen)	>93

## Environmental characteristics of recycled content office papers

Country of manufacture	Recycled fibre source			Virgin fibre source		Certification			
	Recycled fibre (%)	Country of origin	Source of fibres	Type	Country of origin	Certification of virgin fibre	Verification of recycled content claims	Environmental credentials of mills	Environmental labels on product
Germany	100% Post-consumer	Germany	Magazines, book waste, newspapers, sorted household waste and office waste	N/A	N/A	N/A	Blue Angel	ISO 14001, EMAS	Blue Angel, Nordic Swan, EMAS

## Recommended use

Manufacturers recommended use (G, R, NR-Q, NR-P)							
Copying high volume	Colour copying	Low-medium volume laser printing	High volume laser printing	Ink jet printing (text)	Ink jet printing (graphics)	Faxing	Duplexing
Guaranteed	Guaranteed	Guaranteed	Guaranteed	Guaranteed	Guaranteed	Guaranteed	Guaranteed

\* According to ISO 9706:1994 Information and documentation – Paper for documents – Requirements for permanence.

\*\* According to DIN 6738 - German permanent paper standard (Paper and Board: Lifespan Classes, April 1992) approved by the German Standards Institute.

Information extracted from tables 1,2 and 3



# This page is printed on Officeworks Recycled

## Specifications of recycled content office papers

Whiteness (CIE)	Bleaching		Archival properties			Moisture content (%)	Finish (Sheffield/Bendtsen)	Opacity (%)
	Process	Agent	Acid free	Lignin free	Recommended years			
135 +/-3	PCF	Oxygen	Yes	Yes	>100**	<4.5	TS 350+/-100 BS 300+/-100 (Bendtsen)	>93

## Environmental characteristics of recycled content office papers

Country of manufacture	Recycled fibre source			Virgin fibre source		Certification			
	Recycled fibre (%)	Country of origin	Source of fibres	Type	Country of origin	Certification of virgin fibre	Verification of recycled content claims	Environmental credentials of mills	Environmental labels on product
Germany	100% Post-consumer	Germany	Magazines, book waste, newspapers, sorted household waste and office waste	N/A	N/A	N/A	Blue Angel	ISO 14001, EMAS	Blue Angel, Nordic Swan, EMAS

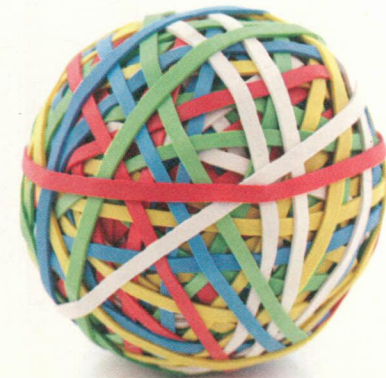
## Recommended use

Manufacturers recommended use (G, R, NR-Q, NR-P)							
Copying high volume	Colour copying	Low-medium volume laser printing	High volume laser printing	Ink jet printing (text)	Ink jet printing (graphics)	Faxing	Duplexing
Guaranteed	Guaranteed	Guaranteed	Guaranteed	Guaranteed	Guaranteed	Guaranteed	Guaranteed

\* According to ISO 9706:1994 Information and documentation – Paper for documents – Requirements for permanence.

\*\* According to DIN 6738 - German permanent paper standard (Paper and Board: Lifespan Classes, April 1992) approved by the German Standards Institute.

Information extracted from tables 1,2 and 3



# This page is printed on Recycled Supreme

## Specifications of recycled content office papers

Whiteness (CIE)	Bleaching		Archival properties			Moisture content (%)	Finish (Sheffield/Bendtsen)	Opacity (%)
	Process	Agent	Acid free	Lignin free	Recommended years			
135 +/-3	PCF	Oxygen	Yes	Yes	>100**	<5	TS 350+/-100 BS 300+/-100 (Bendtsen)	>93

## Environmental characteristics of recycled content office papers

Country of manufacture	Recycled fibre source			Virgin fibre source		Certification			
	Recycled fibre (%)	Country of origin	Source of fibres	Type	Country of origin	Certification of virgin fibre	Verification of recycled content claims	Environmental credentials of mills	Environmental labels on product
Germany	100% Post-consumer	Germany	Office waste, newsprint, catalogues and carton box board	N/A	N/A	N/A	Blue Angel	ISO 14001, EMAS	Blue Angel, Nordic Swan

## Recommended use

Manufacturers recommended use (G, R, NR-Q, NR-P)							
Copying high volume	Colour copying	Low-medium volume laser printing	High volume laser printing	Ink jet printing (text)	Ink jet printing (graphics)	Faxing	Duplexing
Guaranteed	Guaranteed	Guaranteed	Guaranteed	Recommended	Recommended	Guaranteed	Guaranteed

\* According to ISO 9706:1994 Information and documentation – Paper for documents – Requirements for permanence.

\*\* According to DIN 6738 - German permanent paper standard (Paper and Board: Lifespan Classes, April 1992) approved by the German Standards Institute.

Information extracted from tables 1,2 and 3



# This page is printed on Reflex Recycled

## Specifications of recycled content office papers

Whiteness (CIE)	Bleaching		Archival properties			Moisture content (%)	Finish (Sheffield/Bendtsen)	Opacity (%)
	Process	Agent	Acid free	Lignin free	Recommended years			
150	PCF / ECF	Formamidine sulfinic acid / oxygen and chlorine dioxide	Yes*	Yes*	>100*	4.5	120+/-20 (Bendtsen)	92

## Environmental characteristics of recycled content office papers

Country of manufacture	Recycled fibre source			Virgin fibre source		Certification			
	Recycled fibre (%)	Country of origin	Source of fibres	Type	Country of origin	Certification of virgin fibre	Verification of recycled content claims	Environmental credentials of mills	Environmental labels on product
Australia	50% Pre- and post-consumer	Australia	Commercial and household sources, including printed wastes and returns from the distribution chain	State forest & plantation	Australia, New Zealand, Sth. America	PEFC or equivalent and FSC certified.	ECNZ	AS/NZS ISO 14001, FSC, PEFC	FSC, ECNZ

## Recommended use

Manufacturers recommended use (G, R, NR-Q, NR-P)							
Copying high volume	Colour copying	Low-medium volume laser printing	High volume laser printing	Ink jet printing (text)	Ink jet printing (graphics)	Faxing	Duplexing
Guaranteed	Guaranteed	Guaranteed	Guaranteed	Guaranteed	Guaranteed	Guaranteed	Guaranteed

\* According to ISO 9706:1994 Information and documentation – Paper for documents – Requirements for permanence.

\*\* According to DIN 6738 - German permanent paper standard (Paper and Board: Lifespan Classes, April 1992) approved by the German Standards Institute.

Information extracted from tables 1,2 and 3





# This page is printed on Reflex 100% Recycled

## Specifications of recycled content office papers

Whiteness (CIE)	Bleaching		Archival properties			Moisture content (%)	Finish (Sheffield/Bendtsen)	Opacity (%)
	Process	Agent	Acid free	Lignin free	Recommended years			
150	PCF	Formamidine sulfinic acid	Yes	No	>100**	4.5	200+/-20 (Bendtsen)	91

## Environmental characteristics of recycled content office papers

Country of manufacture	Recycled fibre source			Virgin fibre source		Certification			
	Recycled fibre (%)	Country of origin	Source of fibres	Type	Country of origin	Certification of virgin fibre	Verification of recycled content claims	Environmental credentials of mills	Environmental labels on product
Australia	100% Pre- and post-consumer	Australia	Commercial and household sources, including printed wastes and returns from the distribution chain	N/A	N/A	N/A	No	AS/NZS ISO 14001, FSC, PEFC	No

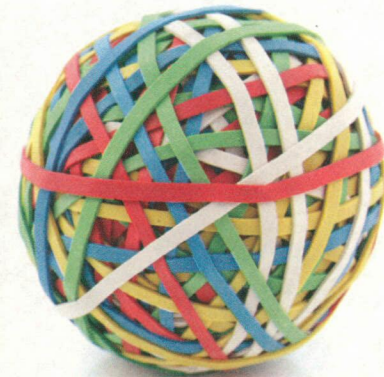
## Recommended use

Manufacturers recommended use (G, R, NR-Q, NR-P)							
Copying high volume	Colour copying	Low-medium volume laser printing	High volume laser printing	Ink jet printing (text)	Ink jet printing (graphics)	Faxing	Duplexing
Guaranteed	Guaranteed	Guaranteed	Guaranteed	Guaranteed	Guaranteed	Guaranteed	Guaranteed

\* According to ISO 9706:1994 Information and documentation – Paper for documents – Requirements for permanence.

\*\* According to DIN 6738 - German permanent paper standard (Paper and Board: Lifespan Classes, April 1992) approved by the German Standards Institute.

Information extracted from tables 1,2 and 3



# This page is printed on Vision Pure White

## Specifications of recycled content office papers

Whiteness (CIE)	Bleaching		Archival properties			Moisture content (%)	Finish (Sheffield/Bendtsen)	Opacity (%)
	Process	Agent	Acid free	Lignin free	Recommended years			
110+/-3	PCF	Oxygen	Yes	Yes	>100**	<4.5	TS 350+/-100 BS 300+/-100 (Bendtsen)	>95

## Environmental characteristics of recycled content office papers

Country of manufacture	Recycled fibre source			Virgin fibre source		Certification			
	Recycled fibre (%)	Country of origin	Source of fibres	Type	Country of origin	Certification of virgin fibre	Verification of recycled content claims	Environmental credentials of mills	Environmental labels on product
Germany	100% Post-consumer	Germany	Magazines, book waste, newspapers, sorted household waste and office waste	N/A	N/A	N/A	Blue Angel	ISO 14001, EMAS	Blue Angel, Nordic Swan

## Recommended use

Manufacturers recommended use (G, R, NR-Q, NR-P)							
Copying high volume	Colour copying	Low-medium volume laser printing	High volume laser printing	Ink jet printing (text)	Ink jet printing (graphics)	Faxing	Duplexing
Guaranteed	Guaranteed	Guaranteed	Guaranteed	Guaranteed	Guaranteed	Guaranteed	Guaranteed

\* According to ISO 9706:1994 Information and documentation – Paper for documents – Requirements for permanence.

\*\* According to DIN 6738 - German permanent paper standard (Paper and Board: Lifespan Classes, April 1992) approved by the German Standards Institute  
Information extracted from tables 1,2 and 3

