

MAHAJAN RECYCLE RESOURCES

Australian Recovered Paper Specifications

Contents

Introduction.....	1
Standard Purchasing Guidelines.....	1
The Papermaking Process.....	4
Wastepaper Contaminant Issues.....	5
Grade Specifications.....	5

Introduction

Recycled fibre use in paper manufacturing is well-established in Australia, with more than 1.6 million tonnes used in domestic production in 2000-01. As well as leading to environmental savings, the use of recycled fibre is standard practice for much of Australia's paper manufacturing simply because it makes good business sense.

This is quite an achievement for a material that is bundled and wheeled every day onto Australian kerbs, as well as being collected from industry. With such a wide range of sources, it is vital for suppliers to understand end user needs for quality and uniform consistency of material.

This handbook aims to:

- Improve the understanding of issues concerning the quality of recovered paper, and
- Encourage agreements between suppliers of recovered paper and their end user customers that address important issues of quality and delivery.

The presentation of Australian Recovered Paper Specifications, or AuRPS, in this handbook is an important development. For the first time, there is an overarching standard for recovered paper in Australia.



The specifications are primarily driven by the needs of Australia's domestic paper mills. However, the contribution of export revenue to the viability of paper recovery is also acknowledged. As far as practical, AuRPS aims for alignment with the ISRI paper stock standards employed for international transactions, particularly in the Asia-Pacific region. AuRPS is not a substitute for individual end user specifications on occasions where these are required. However the specifications provide the most comprehensive and integrated picture to date of the expectations of Australia's major paper mills.

Standard Purchasing Guidelines

There is a lot for purchasers and suppliers of recovered paper to agree on besides the price and quantity. Without a common understanding of conditions of delivery and other terms, both parties risk costly claims and lengthy interruptions to supply and payment.

This section sets out generally accepted industry conditions on supply of recovered paper, without being exhaustive. It is not a substitute for negotiations between purchasers and suppliers to settle on acceptable terms. Instead, it should serve as a checklist to help all parties develop a common understanding when agreeing on a contract of sale. This should result in more efficient transactions and a reliable process for dealing with claims.

Grade Specification

All grade specifications should, where possible, be in accordance with these guidelines unless a separate agreement between the buyer and seller has been established. Details of potential Prohibitive Materials and Out Throws applicable to each grade should be provided by either party upon request to ensure agreement between the trading parties and should be documented. It is recommended that parties agree on the mechanism for determining moisture levels and the consequence of higher than agreed levels prior to any transaction.



clear understanding between the trading parties of the grade being transacted.

Quantity

The amount of material transacted should be reflected in tonnes unless specified. A tolerance of +/- 10% in the total volume is generally acceptable unless otherwise stated and agreed between the trading parties.

Parties need to agree on the transport provider, authorise an agreed weighbridge, and determine the necessity and process for bale counts, gross and net tare weight per vehicle, validation documentation, and weight discrepancy procedures.

Moisture Content

Dry material is important as it limits risks associated with bacterial decomposition while at the same time ensuring efficiencies of transport, processing, and handling are maintained.

All paper is deemed to be air-dry and have a moisture content not exceeding 12%. Acceptance of levels over the maximum are by separate agreement between the trading parties and should be documented.

It is recommended that parties agree on the mechanism for determining moisture levels and the consequence of higher than agreed levels prior to any transaction.

Packing

Whether the material is to be baled, palletised, loose, in bundles, or compacted should be stated. Where possible approximate sizes and weights should be specified.

Obligations of the Seller and Buyer

Terms need to be agreed between both parties in regard to the provision of all necessary procedures and supporting documentation. In the instance of export transactions, consideration must be given to bills of lading, packing lists, container numbers, and seal numbers

Claims

The buyer must notify the seller of any potential claim including supporting evidence within an agreed period from receipt of the material. The seller should be provided an agreed reasonable time to inspect the material at which time all efforts should be made to settle the claim promptly. If agreement on the claim is not reached parties should submit the claim for independent arbitration.

Rejection

If material is rejected in total or part by the buyer, no part of the material may be used until an inspection by the seller has been completed.

Price

The agreed price should be clearly stated in Australian dollars and cents per tonne including the relevant agreed shipping term.

Where overseas currencies are used, agreement should be reached for calculating payment terms including exchange rates on either the day of transaction, or the day of payment

Shipping Terms

Agreement must be reached in regard to each party's transport, material loading, and handling responsibilities. Terms that generally apply to the seller and consequently part of the buyer's purchase price are:

FIS Free Into Store (total cost material delivered into buyer's store)

FOT Free On Truck (total cost of material loaded onto buyer's truck)

FAS Free Along Side (total cost of material delivered to dock – shipping point)

FOB Free On Board (total cost of material loaded on ship or buyers transport other than truck)

C&F Cost & Freight (total cost of material and transport to buyer's nominated location)



CIF Cost Insurance & Freight (total cost of product, insurance of product, and transport of product to buyer's nominated location)

When applicable consideration should also be given to the cost of detention or times that trucks wait to be unloaded by the buyer.

Terms of Sale

The "Terms of Sale" or contract entered into by the parties is to be interpreted as a legally binding contract. To avoid any misunderstanding it is recommended that all terms of sale should be offered in writing within 5 days of any acceptance between the buyer and seller

Notwithstanding the above considerations, the Terms of Sale should be clear and concise, including as a minimum: grade, volume, delivery or collection timetables, pricing, material packing, terms of payment, and terms of rejection.



The Papermaking Process

Paper making is a capital intensive industry incurring significant energy, and other operating costs. In Australia wastepaper represents over 64% of the fibrous raw material requirement by paper and tissue mills. While this is a world class utilisation rate it does bring special considerations for Australia's paper mills.

Wastepaper is a secondary raw material dependant on a considerable amount of manual handling. Therefore, it is not technically perfect and can vary in consistency, making the papermaking process extremely challenging.

The basic stages of papermaking using wastepaper are as follows :

Pulping : Wastepaper is mixed with water and agitated to break it down into a pulp slurry composed of individual fibres.

Screening : The pulp slurry is screened to extract contaminants from the pulp by size.

Cleaning : The pulp is cleaned to extract heavier contaminants such as metal and glass.

De-inking : Ink is removed from the pulp fibres.

Dispersion : Non-soluble glue, adhesives, and wax is extracted from the pulp slurry.

Refining : The pulp slurry is mechanically kneaded to improve the fibre strength.

Forming The pulp slurry is distributed onto a continuously moving screen where water is drained away and the fibres form a weak sheet of paper.

Pressing : The paper sheet is then pressed between rollers to reduce the water content to approximately 50%.

Drying : The paper sheet is then dried by running over steam heated cylinders to further reduce the water content to around 7-10%.



Wastepaper Contaminant Issues

All contaminants can become an issue if the quantity in the wastepaper is high enough to compromise the screening, cleaning, de-inking, and dispersion processes. High levels of contamination result in blockages in the process, damage to expensive equipment, and wasted resources via the manufacture of un-useable products.

While not exhaustive, some typical contamination problems are:

- Glass and dirt cause wear, and ultimately damage, to processing and papermaking equipment
- Wax causes spots in the paper sheet, making the manufactured paper products unsaleable.
- Concrete and steel damage pulping equipment
- High wet strength paper labels produce white spots on brown paper products.
- Cardboard boxes and coloured papers in white and newspaper grades reduce pulp brightness for newspaper and white office paper products.
- Mechanical material such as newspaper reduces pulp brightness for white office paper products.

- High wet strength material generally does not break down causing blockages in the pulping process

- Envelope windows cause spots on the paper sheet, making the product unsaleable.

Grade Specifications

The definitions which follow describe secondary fibre grades as they should be sorted and presented. Consideration has been given to the fact that wastepaper stock is a secondary material produced manually and may not be technically perfect. Definitions do not specifically address all types of processes used in the manufacture of, or recycling of, paper products. Therefore, it is of paramount importance that specific requirements be discussed between the buyer and seller.

Out Throws

The term “Out Throws” as used in this document is defined as “all papers that are so manufactured or treated or are in such form as to be unsuitable for consumption as the grade specified.”



Prohibitive Materials

The term “Prohibitive Materials” as used in this document is defined as :

1. Any material which by its presence, in excess of the amount allowed, will make the material unusable as the grade specified.
2. Any materials that may be damaging to equipment or machinery eg. metal, glass, plastic, wood, synthetics, rubber, insoluble adhesives, dirt, etc.

Note: The maximum quantity of “Out Throws” indicated in connection with the following grade specifications represents the TOTAL of “Out Throws” and “Prohibitive Materials.”

A material can be classified as an “Out Throw” in one grade and as a “Prohibitive Material” in another grade. Carbon paper, for instance, is “UNSUITABLE” in Old Corrugated Containers and is, therefore, classified as an “Out Throw”; whereas it is “UNUSABLE” in Office Pack #1 and in this case classified as a “Prohibitive Material.”

Australian Recovered Paper Specifications (AuRPS)

Grades	Soft Mixed
AuRPS Grade Code	AuRPS SM-01
Similar Grades	ISRI - Soft Mixed Paper (1)
Common Source(s)	Kerbside
Specification	Consists of a mixture of various qualities of paper generally containing a high percentage of old newspapers and coloured advertising inserts with no limit as to other fibre content.
Prohibitive Materials	Prohibitive materials such as plastic, metal, glass, synthetics, timber, dirt, food, or any other material damaging to equipment or machinery may not exceed 2.0%.
Out Throws	Out Throws such as high wet strength papers, and waxed boxes may not exceed 5.0%.
Common End Uses	Corrugated cardboard boxes and folding cartons.



Grade Name	Hard Mixed
AuRPS Grade Code	AuRPS HM-02
AuRPS Grade Code	ISRI - Mixed Paper (2)
Common Source(s)	Kerbside, Industrial.
Specification	Consists of a mixture of various qualities of paper and paperboard generally containing a high percentage of corrugated and folding carton boards with no limit as to other fibre content.
Prohibitive Materials	Prohibitive materials such as plastic, metal, glass, synthetics, timber, dirt, food, or any other material damaging to equipment or machinery may not exceed 1.0%.
Out Throws	Out Throws such as high wet strength papers, and waxed boxes may not exceed 3.0%.
Common End Uses	cardboard boxes and folding cartons.

Grade Name	Kerbside News Papers #6
AuRPS Grade Code	AuRPS KNP-06
Similar Grades	ISRI - News (6)
Common Source(s)	Sorted Kerbside.
Specification	Consists of old news papers, not sunburned, containing not more than the normal percentage of, coloured advertising inserts, magazines, and domestic office and stationery papers as typically generated from kerbside collections and sorted by Material Recovery Facilities.
Prohibitive Materials	Prohibitive materials such as plastic, metal, glass, synthetics, timber, dirt, food, insoluble adhesives, waxed boxes, high wet strength material, or any other material damaging to equipment or machinery may not exceed 1.0%.
Out Throws	Out Throws such as corrugated cardboard boxes, folding cartons, and telephone books, may not exceed 5.0%.
Common End Uses	Plaster liner wall board, corrugated cardboard containers, folding cartons, and export newsprint.



Grades Name	Kerbside News Papers #7
AuRPS Grade Code	AuRPS KNP-07
Similar Grades	ISRI - News, De-ink Quality (7)
Common Source(s)	Sorted Kerbside.
Specification	Consists of old news papers, not sunburned, containing not more than the normal percentage of, coloured advertising inserts, magazines, and domestic office and stationery papers as typically generated from kerbside collections.
Prohibitive Materials	Prohibitive materials such as plastic, metal, glass, synthetics, timber, dirt, food, insoluble adhesives, waxed boxes, high wet strength material, or any other material damaging to equipment or machinery may not exceed 0.5%.
Out Throws	Out Throws such as corrugated cardboard boxes, folding cartons, and telephone books may not exceed 3.0%.
Common End Uses	Newsprint, plaster liner wall board, corrugated cardboard containers, and folding cartons.

Grade Name	News, De-ink Quality #8
AuRPS Grade Code	AuRPS NDQ-08
Similar Grades	ISRI - Special News, De-ink Quality (8)
Source(s)	Printing Houses, Publishers, Kerbside.
Specification	Consists of baled, sorted, fresh newspapers, not sunburned, free from papers other than news, containing not more than the normal percentage of coloured advertising inserts, and domestic office and stationery papers as typically generated by newspaper press rooms and/or from positive kerbside sorting processes.
Prohibitive Materials	Prohibitive materials such as plastic, metal, glass, synthetics, timber, dirt, food, tare, waxed boxes high wet strength material, or any other material damaging to equipment or machinery may not exceed 0.25%.
Out Throws	Out Throws such as corrugated cardboard boxes, folding cartons, and magazines may not exceed 0.5%.
Common End Uses	Newsprint, and tissue.



Grade Name	Over Issue News #9
AuRPS Grade Code	AuRPS OIN-09
Similar Grades	ISRI - Over Issue News (9)
Common Source(s)	Printing Houses, Publishers.
Specification	Consists of unused, overrun newspapers printed on newsprint, baled or securely tied in bundles, containing not more than the normal percentage coloured advertising inserts.
Prohibitive Materials	Prohibitive materials such as plastic, metal, glass, synthetics, timber, dirt, food, tare, waxed boxes, high wet strength material, waxed boxes, or any other material damaging to equipment or machinery may not exceed 0.25%.
Out Throws	Out Throws such as corrugated cardboard boxes, folding cartons, office and stationery papers, and magazines, may not exceed 0.5%.
Common End Uses	Newsprint, and tissue.

Grade Name	Magazines #10
AuRPS Grade Code	AuRPS MAG-10
Similar Grades	ISRI - Magazines (10)
Common Source(s)	Industrial, Retail, Commercial, Publishers.
Specification	Consists of sorted baled coated magazines, catalogues, and similar printed materials. May contain a small percentage of uncoated news-type paper as typically generated in this grade.
Prohibitive Materials	Prohibitive materials such as plastic, metal, glass, synthetics, timber, dirt, food, tare, waxed boxes, high wet strength material, waxed boxes, or any other material damaging to equipment or machinery may not exceed 0.25%.
Out Throws	Out Throws such as corrugated cardboard boxes, folding containers, office and stationery papers, high wet strength material, and telephone books, may not exceed 0.5%.
Common End Uses	Newsprint.



Grade Name	Old Corrugated Containers
AuRPS Grade Code	AuRPS OCC-11
Similar Grades	ISRI - Corrugated Containers (11)
Common Source(s)	Sorted Kerbside, Retail and Industrial.
Specification	Consists of used corrugated cardboard boxes having liners of either test liner, or kraft. May include folding cartons, and similar boxboard products
Prohibitive Materials	Prohibitive materials such as plastic, metal, glass, synthetics, timber, dirt, food, or any other material damaging to equipment or machinery may not exceed 1.0%.
Out Throws	Out Throws such as newspapers, magazines, office and stationery papers, high wet strength material, waxed boxes, and telephone books may not exceed 5.0%
Common End Uses	Corrugated cardboard boxes, and folding cartons.

Grade Name	Premium OCC
AuRPS Grade Code	AuRPS PCC-12
Similar Grades	ISRI - Double Sort OCC (12)
Common Source(s)	Retail, Industrial.
Specification	Sorted single and/or double lined kraft cardboard.
Prohibitive Materials	Prohibitive materials such as plastic, metal, glass, synthetics, timber, dirt, food, insoluble adhesives, waxed boxes, or any other material damaging to equipment or machinery may not exceed 0.25%.
Out Throws	Out Throws such as newspapers, magazines, office and stationery papers, high wet strength material, and waxed boxes may not exceed 3.0%.
Common End Uses	Corrugated cardboard boxes, and folding cartons.



Grade Name	Corrugated Clippings
AuRPS Grade Code	AuRPS CC-13
Similar Grades	ISRI - New Double Lined Kraft Corrugated Containers (13)
Common Source(s)	Industrial
Specification	Consists of new corrugated sheets and trim generated in the manufacture of corrugated cartons containing liners of either test liner, or kraft.
Prohibitive Materials	Prohibitive materials such as plastic, metal, glass, synthetics, timber, dirt, food, insoluble adhesives or any other material damaging to equipment or machinery may not exceed 0.0%
Out Throws	Out Throws such as newspapers, magazines, office and stationery papers, high wet strength material, waxed boxes, other treated mediums liners, and butt rolls may not exceed 2.0%.
Common End Uses	Corrugated cardboard boxes and folding cartons.

Grade Name	Office Pack #1
AuRPS Grade Code	AuRPS OP1-37
Similar Grades	ISRI - Sorted Office Paper (37)
Common Source(s)	Retail, Industrial, and Commercial.
Specification	Consists of >95% uncoated papers, as typically generated by offices and printers, containing mainly white, ground wood free ledger, bond, envelope, writing and other similar papers and
Prohibitive Materials	Prohibitive materials such as plastic, metal, glass, synthetics, timber, dirt, food, insoluble adhesives, corrugated cardboard boxes, folding cartons, kraft liners, high wet strength papers, waxed boxes, or any other material damaging to equipment or machinery may not exceed 0.5%.
Out Throws	Out Throws such as newspapers, and magazines may not exceed 2.0%.
Common End Uses	Plaster liner wall boards, white lined corrugated cardboard boxes, and tissue.



Grade Name	Office Pack #2
AuRPS Grade Code	AuRPS OP2-38
Similar Grades	ISRI - Sorted Coloured Ledger (38)
Common Source(s)	Retail, Industrial, and Commercial.
Specification	Consists of >70% uncoated and <30% coated papers, as typically generated by offices and printers, containing mainly white and coloured ground wood freeledger, bond, envelope, writing and other similar papers
Prohibitive Materials	Prohibitive materials such as plastic, metal, glass, synthetics, timber, dirt, food, insoluble adhesives, corrugated cardboard boxes, folding cartons, kraft liners, high wet strength papers, waxed boxes, or any other material damaging to equipment or machinery may not exceed 0.5%.
Out Throws	Out Throws such as newspapers, and magazines may not exceed 2.0%
Common End Uses	Plaster liner wall boards, white lined corrugated cardboard boxes, and tissue.

Grade Name	Sorted White Ledger
AuRPS Grade Code	AuRPS SWL-40
Similar Grades	ISRI - Sorted White Ledger (40)
Common Source(s)	Retail, Industrial, and Commercial.
Specification	Consists of printed or unprinted sheets, trim, guillotined books, and cuttings of white ground wood free ledger, bond, writing, and all other papers which have a similar fibre and filler content. This grade must be free of treated, padded, heavily printed stock, and adhesives.
Prohibitive Materials	Prohibitive materials such as plastic, metal, glass, synthetics, timber, dirt, food, insoluble adhesives, corrugated cardboard boxes, folding cartons, kraft liners, high wet strength papers, waxed boxes, or any other material damaging to equipment or machinery may not exceed 0.25%.
Out Throws	Out Throws such newspapers, and magazines may not exceed 0.25%.
Common End Uses	Plaster liner wall boards, white lined corrugated cardboard boxes, white folding cartons, and tissue.



Mahajan Recycle Resources

Grade Name	Hard White Ledger
AuRPS Grade Code	AuRPS LPB-S6
Similar Grades	ISRI - Polycoated Milk Carton Stock (6-S)
Common Source(s)	Sorted Kerbside.
Specification	Consists of sheets and trim of new (industry generated) printed or unprinted white ground wood free paper used in the manufacture of envelopes, forms, and stationery. All stock must be free of non-impact printing while a small percentage of coating and carbonless paper is allowable
Prohibitive Materials	Prohibitive materials such as plastic, metal, glass, synthetics, timber, dirt, food, insoluble adhesives, waxed boxes or any other material damaging to equipment or machinery may not exceed 0.25%.
Out Throws	Out Throws such as, newspapers, and magazines may not exceed 0.25%.
Common End Uses	Office and stationery papers, plaster liner wall boards, white lined corrugated cardboard boxes, and tissue

Grade Name	Liquid Paper Board
AuRPS Grade Code	AuRPS LPB-S6
Similar Grades	ISRI - Polycoated Milk Carton Stock (6-S)
Common Source(s)	Sorted Kerbside
Specification	All liquid carton board as commonly found in used gable top milk cartons sorted from domestic kerbside collections at material recovery facilities. All cartons may have a maximum of 10% mechanical fibre and total fibre content of not less than 50%
Prohibitive Materials	Prohibitive materials such as plastic, metal, glass, synthetics, timber, dirt, food, insoluble adhesives, waxed boxes or any other material damaging to equipment or machinery may not exceed 0.25%.
Out Throws	Out Throws such as corrugated cardboard boxes, folding cartons, kraft liners, high wet strength papers, waxed boxes, office and stationery papers, newspapers, magazines, and printed uncoated liquid paper board may not exceed 0.25%.
Common End Uses	Office and stationery papers.