



Paper Technology

Volume 46 number 6
July 2005

The official journal of the Paper Industry Technical Association



AEROpulse™

An Active Boost For Better Drying Rates

The unique structure of Aeropulse improves ventilation through the fabric and more efficient drying is achieved.

Maximised Heat Transfer
+
Maximised Evaporation
=
Maximised Drying Rate



It's All About Value

ALBANY
INTERNATIONAL

Dryer Fabrics Europe
www.albint.com

Comment

Published by PITA

5 Frecheville Court,
Bury, Lancs BL9 0UF
Tel: 0161 764 5858
Fax: 0161 764 5353
email: info@pita.co.uk
website: www.pita.co.uk

Editor

Margaret E. Marley
2 St Philip Street,
London SW8 3SP
Tel: 020 7622 9269
Fax: 020 7652 1632
email: mmarley@dial.pipex.com

Publishing Director

John Clewley

Advertisement Manager

David R. Cole

European Representative

Nicolas Pelletier
ENP 16 Rue
Bannier - F-45000
Orleans, France
Tel: +33 2 38 42 29 00
Fax: +33 2 38 42 29 10
email: enp@wanadoo.fr

Produced and typeset by

Zebra Publishing, Failsworth,
Manchester

Printed by

Stephens & George Magazines,
Merthyr Tydfil, Wales

Paper

Supplied courtesy of M-real
Text pages on Nimrod Silk 115 g/m²
Cover pages on Nimrod Silk 170 g/m²

Subscription Rates (2005)

10 issues pa
£100 pa + postage
(£10 for single copy)

© PITA reserves all copyrights for the contents of this Journal. Technical papers may also carry first-authors' copyrights jointly with the Association. None of the contents may be extracted, circulated, or re-published without permission.

Registered Number*2928961
England Limited Liability.
ISSN 0 306-252X

Recovered paper: quality issues and regulations

By M.E. Marley

The crackdown on the export of contaminated cargoes of recovered paper from the UK, pages 6 and 7, raises quality and legal issues which are now being addressed both in the UK and in Europe.

In the UK, the quality issues are being tackled by a group of experts from the stakeholder groups in the recovered paper market, *see table below*.

Given the importance of the export trade in the UK effort to drive up recycling rates and thereby comply with the Landfill Directive, the Stakeholder Group is addressing the issue as a matter of urgency.

They have formed a smaller working group which seeks to establish:

- agreed standards for exported recovered paper.
- an agreed methodology for the testing of sorted loads for export.
- a Quality Assurance process for MRF/sorting operators which will feed into the system.

Two clearly defined views are emerging from the downstream and upstream processors:

- i) the Papermakers who have the job of turning recovered paper into a marketable product at an affordable cost. For this high quality, sorted consignments are essential.
- ii) the Materials Recycling Facilities (MRFs) which receive paper from the household stream - increasingly from co-mingled, kerbside collections. They have the job of sorting and then sending the paper on for recycling at UK and overseas mills.

Both parties are agreed that the kind of con-

tamination which triggered the current export crisis is completely unacceptable - ie consignments of recovered paper which contain food residues and decomposing vegetable matter.

The debate centres on the acceptability of dry recyclables in containers of mixed paper grades - plastic film and grey board, for example.

The Environment Agency has adopted a tough stance on this issue. Recently, the EA impounded a 4000 tonne consignment of recovered paper which was ready for shipment from the Crayford Creek MRF of Grosvenor Waste Management.

The consignment was documented as 'mixed card and paper'. It therefore did not conform to the strict grading requirements of the green list. Green list materials must be both clean and graded and they can be shipped across frontiers without inspection or export licences.

In contrast, co-mingled loads require export licences - which can cost up to £45,000 - and they are subject to inspection. Local Authorities must be notified when they cross frontiers.

To the exporters, this kind of classification is inappropriate in the current circumstances, being based on regulations which were formulated to stop the dumping of toxic waste - in Nigerian lagoons in the 1980s.

They argue that consignments of co-mingled paper and board grades which may contain a percentage of plastic film etc are non-hazardous. They should therefore be exported without the cost-prohibitive controls which rightly apply to hazardous waste.

There are some indications that opinion is beginning to move in this direction. Recently, in a questionnaire to member states, the Environment Directorate General of the EU acknowledged the need for clarity in waste legislation and 'the reduction of unnecessary burdens for low risk recycling activity'.

The clarification and simplification of existing legislation is also a theme of the European Commission's *Thematic Strategy for Waste Prevention and Recycling* which is due to be tabled after the Summer break.

Developing quality standards mixed paper

Ray Georgeson - WRAP
Peter McGuinness - Severnside Recycling
Chris White - Aylesford Newsprint
David Symmers - IWPPA
Mike Walker - Environmental Services Association
Kevin Thomas - Biffa Waste Services
Paul Dumbleton - Shanks

The working group which has been formed to draw up quality standards and testing procedures for mixed paper for export

Paper Technology

The official journal of the Paper Industry Technical Association

Volume 46
Number 6
July 2005

features

- 2 *Comment*
- 3 *News*
- 10 *PITA Affairs*
- 43 *Products & Services Directory*
- 47 *Industry Update*
- 50 *Installations*
- 53 *Coming Events*
- 55 *Recruitment*
- 56 *Calendar of World Events*
- 14 *Cationic Latex Application in Cotton-based Paper*
B. Alince
The introduction of hydrophobic polymer into a sheet can improve several critical paper properties.
- 18 *Coating Consolidation Measurement and Control Reduces Variations and Costs*
David Watson and Ross MacHattie
Producing uniform and consistent coating quality at the lowest cost is the goal for all coating machines. This is not easy to accomplish, because of the large number of inter-related variables.
- 23 *Development of Pulsed Air Drying (PAD) – A “New” Air Impingement Technology*
T. Patterson, F. Ahrens
The application of pulse, combustion-based jet impingement to paper drying was the subject of an experimental investigation. Most of the work focused on towel grades, however both newsprint and linerboard were tested.
- 31 *Production and Quality Improvements using Automatic Fabric Tension Controllers and Tension Monitoring*
Tobias Hain
The precise and automatic control of the tension of machine clothing brings a very high return on investment, since clothing has a huge influence on: machine runnability and output; paper quality; the consumption of steam and chemicals.
- 37 *Curtain vs. Blade Coating: Experience in Board Application*
Knut Helmer, Tiina Karppinen and Björn Lindqvist
Curtain coating has not, as yet, been applied to board and packaging grades. The authors compare the blade and curtain coating of double coated FBB.



FRONT COVER PICTURE



The Scottish District Annual Dinner on 20th May 2005 was a fitting occasion for the presentation by PITA National Chairman Clive Ward of The PITA Insignia to John Allan, who for more years than most people can remember has been a stalwart of both the NESDG and the Scottish District. Having retired from the industry some years ago John has finally called time on his involvement with PITA. In accepting the award John acknowledged the support of the many people who had helped him along the way not the least being his wife Maureen who was also present to enjoy the occasion. (see pages 12 & 13 for full story)

News

Increasing the recycled content of the UK Magazine sector

The use of recycled fibre in the 1.3 billion magazines consumed in the UK every year is the focus of a new research project launched by WRAP, the government's Waste Resources Action Programme.

It will investigate the opportunities and barriers to using recycled paper in the UK magazine publishing and print industries - currently the recycled content is around 2-3%. The overall aim is:

- i) to give publishers the information and confidence to extend their use of recycled paper for appropriate titles.
- ii) to encourage further investment in recycled magazine paper mills.

To ensure a robust industry input into the project, a steering group has been set up comprising representatives from the Confederation of Paper Industries (CPI), paper mills, the print industry and the Periodicals Publishers Association (PPA), *figure 1*.

They will guide Pira International, which has been chosen to conduct Phase 1 of the two-phase project. Pira will draw on its wide experience of the paper supply chain and its relationships with papermakers, printers and publishers, says Michael Sturges, Head of Strategic Consultancy. In Phase 1, the focus will be on:

- Gathering essential information on available paper
- Collating existing print and publishing experience

- Reviewing current title types for potential suitability
- Identifying opportunities for commercial trials.

If sufficient potential is identified in phase one, the project will be taken forward to second phase – to run pilot and commercial scale trials and develop case studies. Phase One will be completed by June 2005 and the results will be made public shortly afterwards.

The quality and cost issues

The UK consumer market currently comprises more than 1.3 billion magazines per year, excluding newspaper supplements. Although recycled content is less than 2-3%, publishers are expressing an interest in recycled paper, provided the quality and costs are acceptable.

But, "there are significant barriers to increasing use," says David Thomas, Director of Public & Legal Affairs at the PPA. "This study will identify the real issues, allowing publishers to make informed choices on the value of recycled content papers."

The PPA represents almost 400 publishing companies, who together publish more than 2,260 consumer, business and professional magazines which account for more than 80% of the UK magazine industry. The Association is "committed to increasing the volume of post-consumer recycling and the use of wood from certified forests in pulp manufacture, as part of a balanced approach to environmental responsibility."

The project is being funded by the Waste & Resources Action Programme (WRAP) of the government. Its particular focus is on creating stable and efficient markets for recycled materials and products and removing the barriers to waste minimisation, re-use and recycling.

Because of the finite potential for increased usage of recycled fibre in newsprint and tissue, "we need to continue to identify additional opportunities for this raw material," says David Adams, Paper Product Manager at WRAP. "This is particularly true for recovered magazine and office grades. This new research is at the heart of WRAP's key objective - creating markets for recycled resources." www.wrap.org.uk

Figure 1: The Steering Group will guide Pira International in Phase 1 of the project on recycled magazine grades. If the findings show sufficient potential, the project will move into Phase 2, ie: pilot and commercial trials and case studies.

Recycled Magazine Grades: Steering Group	
CPI	Represents the UK paper sector and comprises: Association of Manufacturers of Soft Tissue Papers British Recovered Paper Association Corrugated Packaging Association The Paper Federation of Great Britain
PPA	Represents almost 400 companies which publish some 2260 consumer, business and professional magazines which account for more than 80% of the magazine industry in the UK
WRAP	The government's Waste & Resources Action Programme which creates stable markets for recycled materials and products. Removes the barriers to the recycling, reuse and minimisation of waste

Tullis Russell reports a 17% increase in profits

Tullis Russell made a pre-tax profit of £4.1m in the year to 31 March 2005, a 17% increase on the £3.5m profit of the previous year.

The group's net positive funds increased from £1.48m at the start of the year to £3.84m at the year end.

The company is cautiously optimistic about 2005, despite extremely difficult market conditions which show little sign of recovery.

'In the year ahead we face further significant cost increases particularly in the areas of energy and raw materials. Against this backdrop market conditions remain difficult,' says Chief Executive, Fred Bowden.

In these circumstances, Tullis Russell will 'continue our strict cost control regimes, develop our brands and maintain strong operational efficiencies in order to protect our profit margins'.

Based in Fife, Tullis Russell is an employee-owned papermaker with a specialist coater group.

DEFRA investigation

DEFRA is to investigate allegations of inappropriate issuing of paper PRNs and PERNs. The mission will involve the DTI and regulators in Scotland, Wales, N. Ireland. They will visit the premises of reprocessors and exporters. According to the allegations, paper PRNs and PERNs are being issued:

- for waste that's not packaging.
- for tonnages for which a PRN/PERN has already been issued.

The investigation will seek to identify "any weaknesses in the existing arrangements by examining the robustness of recording and monitoring systems and the audit trails adopted by paper packaging waste reprocessors and exporters."

Inveresk to close down Carrongrove in November

The Carrongrove Mill of Inveresk is closing down in November. In the interim, it will produce *Gemini* paperboard for Tullis Russell, the new owner of the brand and its order book.

By November, the production of *Gemini* will have been fully transferred to the Markinch Mill of Tullis Russell.

In 2004, Carrongrove generated sales revenue of £26.2 million and operating profits of £1.62 million - before central costs, exceptional costs and financial interest.

But, the company's bank borrowings stood at some £15.7 million on 31 December 2004, and the £13 to £15 million raised by the transfer of *Gemini* will be used to 'substantially eliminate' these borrowings.

The price for the sale of *Gemini* includes the following components:

- A consideration of £5 million for the sale of the Intellectual Property - in cash on completion.
- A further £2 million which becomes payable in cash, dependent upon the level of sales tonnes made between Nov 2005 and Nov 2006. This consideration will become payable in early December 2006.
- A further £8 million will be payable in cash on a monthly basis between June and November 2005 - for the maintenance of continuity in Carrongrove's production, sales and marketing.

The *Gemini* brand is well-established in the UK and European coated board markets where Tullis Russell is represented by the *Trucard* brand. Both products are used in high quality cards, covers and packaging applications.

Tullis Russell intends to absorb much of the current *Gemini* sales into its own operation and will continue to invest strongly in the brand in the future. The move will improve Tullis Russell's product mix and strengthen its competitive position.

"Whilst we feel greatly for all impacted by the Carrongrove closure later this year, for Tullis Russell it represents an enormous opportunity to improve our performance and secure the future of papermaking jobs in Markinch", says Fred Bowden, chief executive of Tullis Russell. 'It also ensures the enhancement of the *Gemini* brand and safeguards supply for its many customers around the world.'

200 years of papermaking

The closure of Carrongrove will mark Inveresk's exit from Scottish papermaking - Kilbagie and Westfield were closed in 2002,

followed by Caldwells in 2003. Paper has been made at Carrongrove for more than 200 years and the mill has a world wide reputation for the *Gemini* brand which comprises one-side coated (C1S) and two-side coated (C2S) boards.

But like other small mills, Carrongrove has been struggling against the tough trading conditions which have dominated this decade.

- Escalating costs, particularly in energy and in raw materials
- The rising cost of capital and debt servicing. From Sept 2003 to Sept 2005, the Base Rate rose from 3.5% to a peak of 4.75%, and in 2004, the cost of Inveresk's interest payments almost doubled to £1.102 million.
- Depressed sales prices which prevent the company from passing on the increase in costs to its customers
- Unfavourable exchange rates - in 2004, the decline of the Euro against Sterling knocked £725,000 off Inveresk's bottom line. Carrongrove's dependency on international markets for its sales exposes it to the extreme volatility of the Euro and US dollar.

In addition to these pressures, the mill was facing 'significant investment costs in terms of safety, energy, environment and new equipment'.

These factors have combined to convince Inveresk 'that shareholders' interests would be best served by finding a suitably like minded producer to whom we have now sold our brands', says Alan Walker, chief executive of Inveresk.

'The closure of the Carrongrove Mill is anticipated to take place in November of this year with the potential loss of around 150 jobs. We obviously regret enormously the impact on the people involved and on the local Stirlingshire community and will be doing all we can to help and support our employees through what will clearly be a difficult and emotional time'.

Inveresk's last surviving mill, St Cuthberts in Somerset, will continue to operate in its speciality fields of

- artist and inkjet papers and
- pre-impregnated resin based papers for the décor and furniture industries.

Recently, Inveresk appointed a new General Manager for the St Cuthberts business, in the shape of David Doorbar who has joined Inveresk after 26 years with Arjo Wiggins.

Gunns opts for ECF bleaching for Tasmanian pulp mill

Gunns has switched from TCF to ECF pulping for the A\$1.5 billion BEK pulp mill, which is due to start-up in mid 2008 at Bell Bay on the northern coast of Tasmania:

- the bleaching process will be elemental chlorine-free rather than totally chlorine-free.
- capacity will be in the range of 700,000 to 1.1 million tpy of air dried pulp. This output can be supported by the existing woodchip supply - Gunns are currently exporting 5 million tpy of woodchips.
- The Bell Bay site will require up to 650 ha of land instead of the original estimate of 100 ha. The additional land could accommodate a paper mill.

The woodchips are sourced from native forests, pine and eucalyptus plantation. The amount of plantation wood used by the mill will increase over time as plantations develop.

The suppliers are: Forestry Tasmania, which manage 1.5 million ha of state forest; private forest owners; managed plantations and the company's own plantations.

The new pulp mill will supply Tasmanian and Australian mills and will replace some of the 350,000 tpy of bleached kraft pulp which is imported into Australia.

But, the bulk of output will be exported to the Asia-Pacific region, to Taiwan, Korea, Japan and China.

A new berth facility will be constructed next to the pulp mill and dedicated ships will transport 50,000 tonne loads of pulp. The port will also feature a warehouse with storage capacity of some 100,000 tonnes.

The project also includes a cogeneration plant, which will provide the mill's electricity and generate an additional 30 MW for the grid.

LETTERS TO THE EDITOR

Dear Editor

Retention Aids in Water Based Gravure Published in May 2005

I have been involved in the papermaking retention aid business, both technical and sales, for 20+ years and was keen to read the paper "The role of some retention aids in water based gravure printing".

The effects of chemical additives on printing properties is a subject of great interest at the moment.

What a disappointment.

I have three main concerns:

1. The terminology
2. The dosages
3. The chemistry

For a technical paper, that's as bad as it gets.

Some examples of what I mean:

Rosin alum is not a retention aid. Alum is a coagulant that works by charge neutralisation, not by bridging flocculation.

Cationic starch alone is not a retention aid in normal usage or terminology.

Chitosan is neither in common use nor cationic. It contains a primary amine, which may technically have a small cationic charge at low pH, but it is nothing like as cationic as a tertiary or quaternary amine.

The polyacrylamide used appears to be pure, nonionic (or very slightly anionic) polyacrylamide. It also contains a primary amine and like chitosan will not be cationic

even in acid conditions.

By good fortune, due to the stock used presumably having a high anionic trash level and high conductivity, the polyacrylamide flocculated the fibre and fines.

For retention aid usage, single polyacrylamides are used at 100 - 800 g/t (dry on dry). Even when used as a strength aid, dosages are normally 1000 - 5000 g/t maximum - although in the Far East, there may still be a few cases of higher levels of low molecular weight polyacrylamides being used for strength.

Dosages of 5-20 kg/t (0.5-2%) are massive overdoses for a retention aid. No wonder the sheet was very flocced and had a high porosity and high surface roughness.

Supplier companies are usually more than happy to supply samples of suitable chemicals along with application and dosage advice to help academic studies such as this. 10 minutes discussion with any starch or retention aid supplier would have enabled a realistic study to have been completed.

Peer review would also have prevented the waste of 8 pages of your journal

yours sincerely

Paul Cutts
Global Solutions Application Specialist
BL Paper, Ciba Specialty Chemicals UK
Bradford, West Yorkshire UK

Dear Editor,

This my reply for Mr Cutts' letter

- Rosin and alum is not retention aid, but alum as it is a coagulant and used as retention aid during paper sheet formation. Aluminum sulfate (Alum) has been in use ever since rosin was first used to size paper. One of its functions is to provide an increase in retention, but its main use is to make it possible for rosin to be effective as a size. It improves the runnability of paper machines by fixating resinous pitch and other sticky substances to fibers and fillers; thus preventing them from being deposited

Strazdins E., 'Theoretical and Practical Aspects of Alum Use in Papermaking', Nordic Pulp and Paper Research Journal, 4 (2) (1989), 128-134.

- Cationic starch is a modified starch contains a positive charge, which tends to promote adherence of the starch to slightly negatively charged cellulose. This resulted in starch being useful as fiber bonding agent as well as a retention aid for pigments and fines as shown in the results for some authors

Roger N. and Jarl B.R., "Highly Cationic

Starch and "Anionic Trash" for Optimal Filler Retention and Paper Strength", Colloids and Surfaces, 252 (2005), p.135-141.

Mirjam B. and Lars W., "Flocculation of Cellulosic Fibers Following Addition of Cationic Starch", Colloids and Surfaces, 105 (1995), p. 199-209.

- Chitosan is used as wet-strength agent as well as retention aid as shown in the results for some authors:

Orlando J. R., Ronald D. N., "Adsorption of Polysaccharide Wet-End Additives in Papermaking Systems", Colloids and Surfaces, 55 (1999), p.419-432.

Houbin L., Yumin D., Yongmei X., "Adsorption and Complexation of Chitosan Wet-End Additives in Papermaking Systems", Journal of Applied Polymer Science 91, (2004), p. 2642-2647.

Essam S.A. El-sayed and Altaf H.Basta, "Evaluation of Chitosan as Additive in Papermaking", IPPTA J., 15(1), (2003), p.73- 79.

Yours sincerely

Dr. Essam S. Abdel- Saied
Cellulose and Paper Department,
National Research Centre, Dokki-12622,
Cairo, Egypt

Recovered paper, the quality issue and the export trade

by M.E. Marley

Household refuse documented as clean paper

Early 2005: 54 container loads of contaminated household refuse from the UK were intercepted at the port of Rotterdam en route for the Far East.

Although documented as clean paper - a green list cargo for which no export license is required - they contained: rotting food and vegetable matter; batteries; plastic packaging and carrier bags, cans, old clothes, carrier, wood and broken glass.

The Dutch Ministry of the Environment impounded the containers and sent them back to the UK.

The tip of an iceberg

Dutch officials reckon that the incident exposes the tip of an iceberg; that British refuse is being systematically dumped in developing countries via Rotterdam; that waste companies across Europe are colluding to avoid paying landfill charges and that up to 75% of the export trade through Rotterdam may be illegal.

Figure 1: UK and Continental regulators have formed Project Seaport to Combat illegal green list exports

Recovered Paper Exports

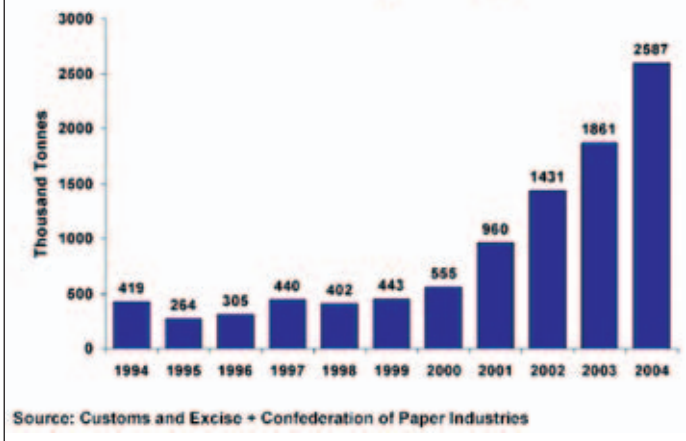


Figure 2: The export of recovered paper is playing an increasing role in the UK's recycling effort.

UK Exports of Recovered Paper 2004 by destination

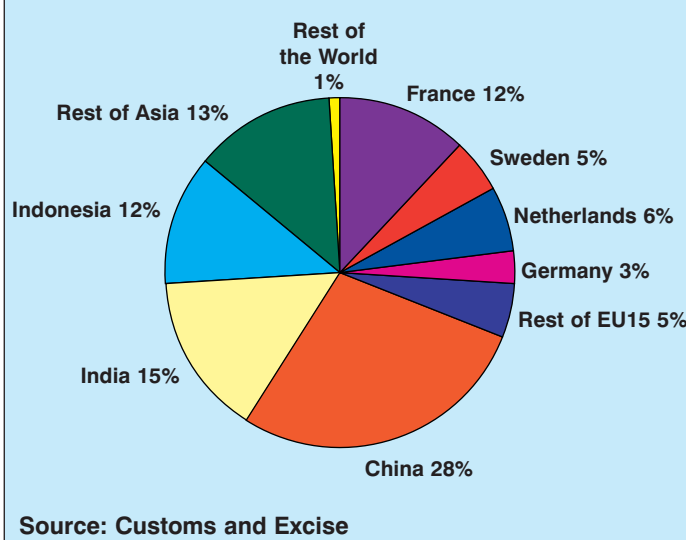


Figure 3: China, the major export market, has set up the AQSIQ inspection system to stop contaminated paper loads.

Paper recovered from the household stream could be diverted to landfill 'if export activity is rendered uneconomic under the Environment Agency's (EA) new approach to the legislation', according to Grosvenor Waste Management.

Grosvenor was responding to the export crisis which was triggered by the discovery of containers of contaminated paper at Dutch, Indonesian and UK ports earlier this year, *figure 1*.

Grosvenor runs a materials recycling facility (MRF) at Crayford Creek in north Kent and handles 400,000 tpy of waste, largely from the household streams of London. It recently received a £750,000 government grant to invest in machinery which will

- i) enable the MRF to keep pace with London's rising recovery rate - achieved substantially on the back of co-mingled collections; and,
- ii) help the UK to comply with EU recovery and recycling regulations.

But, the rising recovery rate is creating a surplus of recovered paper at a time of contracting recycling capacity. Ever increasing tonnages are therefore being exported, mainly to the Far East, *figures 2 and 3*.

This recovered paper is exported free, as a green listed, recyclable product - unlike waste products which incur inspection fees and require export licences. An export licence for a cargo of co-mingled waste can cost up to £45,000, according to John Vidal in *The Guardian*.

The contamination problem

But, China, the biggest importer of recovered paper, has continuing problems with green listed containers in which paper is co-mingled with household waste.

As a result, the rigorous AQSIQ inspection system has been set up at Chinese ports, and, when contaminated containers are identified, they are returned to the port of origin. The European authorities are cooperating. To control the export of certain wastes, the EU Parliament amended the regulations on transfrontier waste shipments last year. Amendment 81 covers shipments of mixed household waste for recovery.

Crackdown by UK regulators

This year, there came a major crackdown by UK, European and Asian regulators. In the Netherlands, 2000 tonnes of recovered paper, which was in transit from the UK to China, was

The need for more clarity in waste legislation

The need for clarity in waste legislation and for the 'reduction of unnecessary burdens for low risk recycling activity' is acknowledged in a recent questionnaire from the Environment Directorate of the EU to member states.

Meanwhile, waste management and recycling are subject to regulations which were introduced in the 1990s to prevent the dumping of industrial waste in developing countries. In the 1980s, for example, toxic waste was being dumped in Nigerian lagoons.

The transfrontier shipment rules of 1994 use a system of colour codes to distinguish between the different kinds of waste:

The Green List applies to materials which are clean and sorted by grade. Shipments can cross frontiers without notification or licence.

The Amber List covers co-mingled materials which need export licences. Local authorities must be notified when they cross frontiers.

The Red List covers toxic waste which is subject to stringent controls.

A rigid application of the grade rules would prohibit the inclusion of grey board or cardboard in the loads of 'mixed paper' which are transported under the Green List.

This would add prohibitive costs to the export of hundreds of thousands of tonnes of mixed grades from the UK, says Grosvenor Waste Management. There is therefore an urgent need for:

- an industry standard incorporating objective, quantity based testing to ensure clarity and continuity throughout the industry and move away from the current method, based on a personal subjective assessment by EA officers.
- a clear, unambiguous and definitive statement and justification of the EA's assessment methodology.

impounded in Rotterdam and returned to the UK. In Indonesia, 18 containers of contaminated waste were shipped back to the UK. In the UK:

- An EA investigation revealed that "potentially substantial amounts of waste being sent overseas, ostensibly for recovery, that do not conform with the requirement of the EU Waste Shipment Regulation."
- DEFRA's waste management unit expressed these concerns in a letter to Local Authorities. It talked of illegal exports of municipal waste and "ongoing investigations". It asked LAs to ensure that "any exports of waste for recycling - originating in their jurisdiction - are being undertaken in compliance with the relevant legislation."
- During an inspection of the Grosvenor MRF, the EA impounded a 4000 tonne consignment of recovered paper which was ready for shipment from Crayford Creek. It was documented as 'mixed card and paper' and was deemed to be an acceptable green list export by some EA officials and unacceptable by others.
- During a sampling exercise in the UK, it was found that 21 out of the 124-odd containers opened for inspection contained illegal materials including plastic and other waste.

The rejected loads originated in London's household stream, material which is sent on to three main MRFs for sorting:

- i) Grundon which sends recovered paper to St Regis Taplow and to overseas markets;
- ii) Cleanaway, whose Greenwich MRF is the most advanced in the UK and is designed to process co-mingled recyclables;
- iii) Grosvenor which supplies domestic, European and deep seas markets.

The export crisis and the rigorous reaction of the EA has forced some MRFs to slow

Developing quality standards for the export trade

To address the export issue, a stakeholder group has been formed under the leadership of WRAP, the government's Waste and Resources Action Programme.

It includes 25 representatives from the papermaking, waste management and exporting sectors and its aim is to:

- i) build confidence in the export of materials for recycling; and
- ii) clarify the EA interpretation of what constitutes Green List recovered paper.

To this end, a smaller working group has been set up to develop:

- agreed standards for exported recovered paper.
- an agreed methodology for the testing of

down their intake of co-mingled material. This creates a backlog of unsorted household waste, for which, landfill may be the only alternative.

An outcome of this kind could jeopardise the UK's ability to meet the requirements of the Landfill Directive, at a potential cost of £500,000 in fines, per day of noncompliance, says Grosvenor.

Stopping exports to countries like China would also have 'an immediate and catastrophic effect' on recycling schemes across the country, thereby undermining the UK's ability to achieve its recycling targets.

Exports diverted to landfill would:

- i) damage public confidence in the value of the collection effort, and
- ii) push the recycling rate down from the current 17% to 13% - to the bottom of the European league.

A crisis intensified by overreaction?

Grosvenor maintains that the export crisis is rooted in

- i) a too rigid interpretation of laws which, in any case, were formed for different circumstances, see story on *Need for more clarity in waste legislation*.
- ii) the failure to discriminate between hazardous waste and the plastic contaminants - wrapping film etc - and grey board grades which are co-mingled with consignments of recovered paper.

The latter are non - hazardous and should therefore qualify for export without the cost-prohibitive controls which rightly apply to hazardous waste.

'We have always been at the forefront of technology development to keep our processing capacity apace of government funding in new collection schemes', says Grosvenor. 'We pride ourselves on the substantial private investment the company has made towards London and the UK's recycling success.'

sorted loads for export

- a Quality Assurance process for MRF/sorting operators which will feed into the system.

One approach is to establish a percentage figure for contamination of loads but, as yet, "there is no agreement for this," says Mr Georgeson, of WRAP.

Both the EA and some paper companies seem to be taking a hard line on the issue.

They believe that quality standards are pre-eminent and there should be no question of co-mingled materials being exported under green list codings.

The next full meeting of all stakeholders is scheduled to take place this month.

Omya expands calcium carbonate plant

With the start-up of its new quarry and front-end processing systems, Omya has completed Phase One of a plant expansion at its Sylacauga ground calcium carbonate facility in Alabama.

Phase Two, which includes expanding capacity for both dry and slurry products, is expected to be completed by mid-2007.

Omya is the world's largest supplier of ground calcium carbonate for paper filling and coating, plastics, paint, food, pharmaceutical, nutritional and industrial applications.

Online guidance on acrylic solutions

The use of water-based acrylic solutions for adhesive and sealant applications is to be promoted by Rohm and Haas and SpecialChem - as cost effective alternatives to solvent based products.

The joint venture follows the success of the two companies in promoting Acrylic Emulsions for the coatings industry.

To increase the adoption of acrylic technology, formulators will be given 24/7 online access to expertise, advice and guidance at www.specialchem4adhesives.com

Abu Dhabi orders tissue machine

Abu Dhabi National Paper Mill has placed an order with OverMeccanica for a new Tissue Machine .

It will have a deckle of 3.6 m; a maximum operating speed of 2000 mpm and an output of 40,000 tpy of tissue. The new PM will bring site capacity up to 65,000 tons.

Genome sequencing facilitates enzyme development

The C1 fungus, which has the ability to produce low cost industrial enzymes, will be available to the pulp and paper industry following the completion of genome sequencing by Agencourt Bioscience of Massachusetts.

The C1 has been successful in textile and agricultural applications, sectors within which its owner, Dyadic International has built a business on the ability of the organism to produce large volumes of low cost enzymes.

The sequencing of the 38,000,000 bases in the C1 genome will enable Dyadic to mine information and extend the market reach of C1 by developing new and better proteins more affordably.

In future, the C1 fungus will host novel and improved protein products for a broad

spectrum of industries, including pulp and paper, energy, food and pharmaceuticals.

In addition, the sequence information is expected to enable Dyadic to expand the variety of proteins and enzymes that can be brought to market.

Dyadic is already manufacturing enzymes for the global pulp and paper industry - enzymes for bleach boosting, bio-refining and de-inking which are derived from the 30 genes discovered by Dyadic and turned into products over the past decade.

The completion of the C1 Genome Sequencing Project, provides the company with 10,000 to 15,000 genes which can be mined and developed into pulp and paper enzymes.

Cost effective alternative To Chlorine Bleaching

A stabiliser which helps to reduce costs whilst improving the whiteness of recycled fibre has been introduced by Clariant for oxygen based bleaching systems. The process and economic gains will enable many more mills to benefit from hydrogen peroxide bleaching.

Used during the deinking of waste paper - at the post-bleaching stage - Cartan RCF provides process improvements and economic benefits which will enable more mills to increase whiteness while:

- Protecting alkaline peroxide from naturally occurring heavy metals within the furnish.
- Inhibiting the build-up of micro-organisms.
- Reducing the amount of biocides required during the bleaching process.

Consequently, the new, patented product enables the total performance of hydrogen peroxide within the bleaching process and provides mills with production economies. It can also be easily recycled.

"Working with our customers we have been able to produce a unique and effective, multifunctional aid to the bleaching process, which also offers economical and environmental benefits to users", says Nick Dunlop-Jones. "We believe that Cartan RCF will provide the opportunity for many more mills to benefit from the use of hydrogen peroxide bleaching."

www.paper.clariant.com

Single-component and Online Dual System

An improved retention and drainage system has been developed by Lanxess Deutschland to enable mills to cope cost effectively with

- The higher levels of fines, fillers and anionic trash in the wet end - the result of the ongoing move to cheaper raw materials such as secondary fibre and increasing amounts of fillers.
- Rising production speeds and the high shear forces in the sheet-forming zones in modern paper machines.

The Retaminol CHE2S system is based on a range of polyethylene imines (PEI) and polyamidoamines (PAAM) which can be used either alone or in combination with various cationic polyacrylamides (c-PAM).

Single-component applications: The PEIs and PAAMs act as retention and drainage aids and also as fixatives for the control of pitch and stickies.

Retaminol H 01 is a PAAM, the product of choice for single-component applications with high drainage requirements, e.g. for

linerboard and board grades with a basis weight of more than 150 g/m².

Online Dual System: Two cationic retention agents are mixed by computer: component 1 is either a PEI or a PAAM in aqueous solution, while component 2 is a c-PAM in emulsion form. The result is a solution with fully developed activity that can be metered directly into the stock at a specific point.

A mixer with the right shear force generates polyacrylamide molecules with optimal efficiency and polymer consumption is reduced to the minimum. There is no need for a holding tank for maturation of the polyacrylamide.

The dual system meets the need for efficient drainage, first pass retention, first pass ash retention and fixation. Drainage is improved in wire, press and pre-dryer sections. Retaminol CHE2S is suitable for all types of paper, especially for recycled and woodcontaining grades and for papers produced in highly closed white water systems. It offers mills a high degree of flexibility with regard to product properties.

The future of Arjo Wiggins Corpach hangs in the balance

Arjo Wiggins has initiated a 90 day negotiation period on the future of the Corpach Mill near Fort William, where talks are underway with the AMICUS/GPMS/CMS Trade Union.

A continuous and sharp decline in the market for carbonless copy paper - traditionally the mill's staple product - has put the operation under great pressure in recent years.

This decline has gathered pace recently, due in part to the introduction of new forms of paper-free technology such as mandatory "chip and pin" credit and debit cards - electronic transactions which have progressively destroyed the market for the mill's product.

The management and workforce of the company have worked together, over many years, to protect jobs by maintaining high efficiency levels, improving methods of manufacture and attempting to diversify production.

However, market conditions have now forced the company to review the future of manufacturing at Corpach.

"I am sad that we have had to announce the start of talks on the mill's future," says Christian Sciera, Printing & Writing Operations Director of Arjo Wiggins.

"We are talking to the workforce and its representatives and I would not wish to prejudice the outcome in any way by commenting further. However, I would like to say that our workforce in Corpach are the best in their field. They are incredibly hardworking, loyal and are an asset to us."

"We will of course look at every opportunity open to us, and will continue to do all we can for our staff."

New Management teams at M-real

M-real has finalised the structure of its new management teams at the New Thames and Sittingbourne Mills. Each mill is to have a mill manager following the promotion of Juha Veräjänkorva to Senior VP Production & Technology, M-real Office Papers.

At Sittingbourne, Nick Carter is the new mill manager. He was previously Operations Manager and has been with the mill for eight years. Sittingbourne, which produces coated printings, has undergone a £25 million improvement programme since its acquisition by M-real in 1999.

At New Thames, Howard Emmett is the new mill manager. He joined New Thames in 1998 and has been Operations Manager for the previous three years. The mill manufactures business papers such as the *Logic* and the *Evolve* recycled range. It has a Recycled Fibre Plant which processes recovered paper from the south-east of England.

Reporting to both mill managers are Graham Appleby, the new Customer Services Manager, and Alan Young, who takes over the role as Mill Services and Combined Conversion Manager. They join Ken White, who continues as Finance and Shared Services Manager.

Otherwise each mill has a separate management team. At Sittingbourne, Mark Hammond is Production Manager, Dave Eede is Maintenance Manager, Brian Williams is Technical Manager and Pam Smith becomes HR Manager.

At New Thames, Jonathan Scott is Production Manager, Martin McKelvie is Maintenance Manager, Lauri Verkasalo joins the mill as Technical Manager, and Frank Lawrence becomes HR Manager.

JARSHIRE

PAPER MILLS DIVISION



Non-contact drying and heating systems

Adequate drying rates, energy efficiency and a reduction in moisture variability are the positive benefits provided by Solaronics Bekaert gas and electric infrared drying systems.

With over 900 systems in the field and back-up services designed to meet your particular needs, reliability is guaranteed.

For further information or on-machine trials, contact sole distributor Jarshire Limited

www.jarshire.co.uk

01753 825122

sales@jarshire.co.uk

Representing the best

ABB Cellier • Akamex • Allimand

Bekaert-Solaronics • Bonetti SpA

Devauze Mouzon • FIS Impianti • Nexen

Neyrtec • Svecom PE • Tecnomec3 • Weingrill

JARSHIRE

JARSHIRE Ltd

Levels House, Bristol Way, Stoke Gardens, Slough SL1 3QE
Tel: 01753 825122 Fax: 01753 694653

PITA Affairs



CONTENTS >

- 10 The Director's Diary
- 11 Around the Districts
- 12 Scottish Annual Dinner

BRUCE MCNAIR

As we go to press we have learned with great sadness that Bruce McNair passed away on 14th June 2005 following a short illness.

The Director's Diary

In this column last month I commented that this was the season of the District social events and in "Around the Districts" there was a report of the very successful Northern District summer meeting at Shotton. This month we have a report of an equally successful day for the Scottish District with their dinner being the occasion for a very special award (*see below*). Unfortunately we have learned during the course of this month that the planned social event for the Southern District in collaboration with the BAPH will not now go ahead due to the prohibitive costs associated with the planned venue.

On another sad note we have been advised that the NESDG is to be disbanded as a separate body. With only two mills left operating in the Aberdeen area it was felt that a separate group was no longer sustainable. "Around the Districts" carries a report of what was therefore the last meeting of the NESDG with a photo of those in attendance for posterity. The Scottish District intend to include at least one meeting in their programme each year in the Aberdeen area and the Dinner & Dance planned for this November will also still go ahead.

Working Groups

This time of year is traditionally a quiet period for the Working Groups but with the difficulties experience by some of the Groups re-arranged meetings are spilling over into both June and July. A small informal meeting of the **Papermaking Group** was held in June

despite the difficulties of getting a decent attendance together due to other commitments. The main focus of this meeting was to progress the posting of "Fact Sheets" on to the PITA website in readiness for going public. At the risk of being made to look foolish once again, this really is going to happen very soon. Watch this space!! There was also some discussion about the excellent response we have had to the "Call for Papers" for the 2006 Papermaking Conference to be held 14th and 15th March 2006. All the signs are that this is going to be another excellent event and in addition to the papers offered, 20 of the available 34 display stands are either committed or reserved.

The PITA Board

The Board of Directors held one of their regular meetings in early June and had several thorny issues to consider. The lack of advertising in the Journal is putting severe pressure on the Association's finances and unless other income streams are developed some difficult decisions will have to be faced.

BPMSA celebrate 60 years

On the evening of the Board meeting five members of the Board joined present and past members of the BPMSA at a dinner to celebrate their 60 year anniversary, having had their first meeting on 12th June 1945. Many will remember the BPMSA under their former name of the BPBMMA before they became part of PICON, to ultimately re-appear under their own identity as the BPMSA. There was much reminiscing and it was great to see Ted Roberts still going strong at 75 years of age and leading the celebrations. Don McNay managed to slip in the fact that the PMATA was now 75 years old so I felt obliged to mention that PITA started in 1920 and was therefore 85 years old this year. The most important thing to recognize on an occasion like this is the camaraderie that exists in our industry and how important we all are to each other. This was a BPMSA affair but looking around the table I was thrilled to realize that almost every single person was either an individual member of PITA or worked for a company that is a PITA Corporate member. I say almost because the exception was Alex von der Hyde who is now working outside the paper industry but who was a very active member of both BPMSA and PITA when in the industry.



National Chairman Clive Ward presents John Allan with his PITA Insignia at the Scottish District Dinner.



Just a few of the assembled gathering warm up for the serious business of the dinner

Around the Districts

*Southern District – 28th April 2005
Mini Seminar 'What's new in finishing and converting'*

The Southern District held a Mini Conference on "What's new in finishing and converting" at Aylesford Newsprint on the 28th April 2005. The event, which coincided with the Southern District AGM and had an attendance of 19 people, saw 3 well prepared and excellent presentations from 3 of the major suppliers of finishing and converting equipment.

Elka Birk, Sales manager of Bielomatik Europe, started with a comprehensive overview of Bielomatik's range of sheeters and wrappers, emphasising the companies broad product range from very specialised registered sheeters and wrappers to high speed sheeter and wrapper lines servicing the high speed commodity lines.

The second presentation was given by Emilia Torttila-Miettinen of Metso Paper who presented Metso's 'Val Products' range, which has been developed specifically for enhancing and converting Paper. The presentation covered the ValCoat and ValSizer

Geriatric Fourdriniers

Speaking of camaraderie I am pleased to see the Geriatric Fourdrinier Club is still going strong and recently had their 6th Annual Dinner at the usual venue of The Red Hall Hotel.

There are now 83 registered "members" of this club and 51 were present for this dinner which was preceded by golf and bowls in the afternoon. 19 people played golf which was won by one of this year's 7 new members of the club, Ian Cockshoot. Clearly Ian has been spending much time improving his golf game since his recent retirement from Albany! The bowls was enjoyed by 14 members with the winner being Brian Hemingway. The photo shows some of the youngsters warming up for the serious business of the dinner.

John Clewley

product Lines, the ValSoft and ValHard Calendar options, the ValReel reel up products and the WinBelt reeler series. It focused on Metso's Val portfolio and emphasised its modular right sized and scaled cost effective solutions for all paper mill requirements depending on the product range being produced, designed for fast and efficient installation and start up.

Peter Stokley of Atlas Converting Ltd., part of the Bobst Group, gave an excellent presentation of the company's Apollo range of sheeters. It covered some background to the company and their markets as well as a detailed overview of their latest solutions for slitting and sheeting for a broad range of Grades of Paper and Boards.

The mini conference concluded with Anders Astrom and Stuart Miles guiding all participants on an interesting mill tour of the Aylesford Newsprint facilities. The day ended with a buffet meal for all, kindly sponsored by Atlas Converting.

Peter McLaverty

Scottish District & N.E. Scotland Discussion Group – 10th May – Visit to Woollard & Henry

Fred Bowden welcomed members to the factory for what was the last technical meeting of the NESDG. After an excellent buffet we were shown the process of making dandy rolls. Members of Woollard's staff described in detail the various stages in making a dandy. The process has hardly changed over the years and is very labour intensive. The expertise required to make a dandy can only be built up over many years. When one looks at a dandy it is difficult to realise the number of hours and people required to produce the finished product. As well as the dandies other projects going on are wire and dandy guides.

After a fascinating insight to the making of dandy rolls, Fred and his staff were thanked in the usual manner.

John Allan



Woollard and Hendry was the venue for the last ever NESDG technical meeting



Gavin Hamilton scooped the top prize in the golf



Graham Reid was top fisherman on the day with the heaviest catch of 13lbs, taking the Porritt's & Spencer Trophy



Organiser Jackie Page congratulates Michael Dick on winning the Shooting

Scottish District Dinner 20th May 2005

The Annual Scottish District Dinner was held at The Windlestrae Hotel, Kinross on Friday 20th May 2005. In keeping with tradition the Dinner was preceded in the afternoon by the usual sporting events of Golf, Fishing and Clay Pigeon Shooting. The following reports were provided by the relevant organizers of these events.

Golf

27 golfers took part in the competition held at Balbinie Park, Markinch on a lovely sunny day with the course in excellent condition. The winner with 36 points was Gavin Hamilton on the basis of a better inward half. In second place also on 36 points was Raymond Watt whilst David Morris not only took third place with 34 points but was also closest to the pin at the 7th hole. John Halliwell had the longest drive of the day and at the end of the field the booby prize was won by new District Chairman, Tony Foulds.

Ian Paterson

Fishing

6 members enjoyed an excellent day's fishing on Loch Fitty. The day was the most successful ever experienced with 36 fish weighing 52 lbs being landed. 4 people had the maximum bag of 8 fish with another landing 4 fish whilst one person (guess who) had no fish at all!! The Porritt's & Spencer Trophy for the heaviest bag went to Graham Reid with his 8 fish weighing 13 lbs. The Clariant Trophy for the heaviest fish went to Chris Hall with a fish weighing 2.2 lbs. The third prize went to Stuart Craft who had 8 fish weighing 11 lbs in addition to returning a further 14 fish.

John Allan

Shooting

The Clay Pigeon Shoot was held at Cluny Clays once again this year. The weather stayed fair for the duration with much relief to all as thunder showers had been forecast. The competition was as fierce as ever with the gents doing slightly better than the ladies. Not surprising really as 2 of the competitors (who shall remain nameless) shoot clays regularly and even brought along their own guns which might have given them a slight advantage. Undeterred by this and Liz Flynn's screams we all fought tooth and nail to win the elusive first prize.

The winners were as follows: 1st Prize Michael Dick – Smith Anderson, 2nd Prize Gary Mercer – Voith Fabrics, 3rd Prize David Atkins – Clariant, Joint 4th Liz Wood and Liz Flynn, 5th position Seonaid Lough, with the "booby" prize going to Jacqueline Page of Tullis Russell for the second year in a row.

Jackie Page

Annual Dinner

58 people sat down to an excellent dinner in the evening many of who had come along to honour John Allan who was to receive the PITA Insignia from PITA Chairman Clive Ward at the conclusion of the meal before the more light hearted activities of the sports prize giving and the after dinner entertainment got underway. In making the presentation the Chairman read out two statements made by local mill management praising the work that John Allan had done for the NESDG. He then went on to point out that these two statements had been made 16 years apart, the first when John had received his PITA Meritorious Service Award in 1989 and the second as part of the current nomination. He felt that in itself was a reflection of the incredible service that John Allan had given to the NESDG and to PITA. In accepting the Award which is in the form of a small scale replica of a papermaking mould John was his usual modest and unassuming self, thanking those who had supported him over the years not the least being the management of the Stoneywood mill and his biggest supporter, his wife Maureen who was present to share in John's big night. I have been involved in PITA Awards for many, many years well before I took on my present role and in all that time I have never witnessed what happened next, a standing ovation lasting several minutes which was surely a true indication of the tremendous esteem in which John Allan is held by his colleagues and peers. We will all miss him.

After a short interlude there then followed the usual light hearted presentation of the sports trophies and prizes after which Ian Booth from BPB Mugiemoos Mill entertained everyone with some of his favourite stories. A charity collection was made in favour of Ian's chosen charity, Macmillan Nurses, who amongst their outstanding commitment to the care of cancer patients have helped a number of BPB employees through illness. At a later occasion Ian and District Chairman Tony Foulds were able to present a cheque for £500 to Linda Cattenach representing the Aberdeen branch of Macmillan Nurses. The Scottish District are grateful to Ian Booth and all those who gave so generously to the collection for a very worthwhile cause.

John Clewley



John Allan thanks those who had supported him over the years watched by National Chairman Clive Ward and his biggest supporter of all, his wife Maureen



Chris Hall had the heaviest fish of the day at 2.2 lbs and took the Clariant Trophy



Ian Booth (left) and Tony Foulds present a cheque for £500 to Linda Cattenach representing the Macmillan Nurses.

B. Alince

Pulp and Paper Research
Centre, McGill University
Montreal, Canada

The improvement of several critical paper properties using a single additive is achieved by the introduction of hydrophobic polymer into a sheet. This can be accomplished by depositing cationic latex on fibres suspended in water. Upon forming a sheet and drying, the latex particles form a film covering the fibre surface thus protecting the fibre against water. Simultaneously the polymer film acts as a binder between fibres thus improving mechanical properties.

Cationic Latex Application in Cotton-based Paper

In the production of most paper products, specific additives are required to impart properties not attainable by pulp fibres alone. Mechanical properties are improved by using water-soluble polyelectrolytes which adsorb on fibres and supplement or replace the natural hydrogen interfibre bonding. Liquid penetration is controlled by using emulsified water-insoluble sizing agents. They deposit on fibre making its surface more hydrophobic and consequently less prone to form interfibre bonds. The outcome is predictable: a more effective sizing results in less effective bonding i.e. lower tensile strength.

A multifunctional wet-end additive acting both as a sizing agent and a bonding agent would be desirable. Hydrophobic polymer in the form of latex appears to be a good candidate^(1,2). The rationale is that latex particles deposited on fibres upon drying form a polymeric film that protects fibres against water and replaces the natural fibre-fibre bonds with more effective fibre-polymer-fibre bonds.

For a successful application, the latex must deposit on fibres suspended in water before a sheet is formed. In principle, this can be achieved by using latex charged oppositely to the fibres i.e. in the case of negatively charged fibre the latex particles must be positively charged. The intention here is to present results dealing with the application of experimental cationic latex in paper formed from cotton fibres. The focus is on deposition of latex particles on fibres suspended in water and its effect on properties of handsheets.

EXPERIMENTAL: Materials, Methods and Handsheets

Cotton fibres: The fibres were

Latex: Two types of experimental cationic acrylic latexes were employed. Latex A (supplied by BASF, Germany) is weakly cationic and contains also cationic starch. The average size is around 150 nm and its film forming temperature is around 37°C. Latex B (supplied by Dainippon Ink & Chemicals, Japan) has more pronounced cationic charge and average size 200-300 nm. Its film forming temperature is around 20°C.

Methods: Latex charge and deposition

Charge: The electrophoretic mobility of latex particles was determined using Mark II microelectrophoresis apparatus (Rank Brothers, Cambridge, UK) equipped with a flat cell.

Latex Deposition on fibres: To a suspension of 2g fibre in 500 ml water, kept under slow (80 rpm) paddle stirring, an appropriate amount of latex was added. At time intervals, starting 15 s after latex addition, a sample of supernatant was withdrawn by a syringe equipped with a filter tip to exclude fibres. Light transmittance of the sample was converted to concentration of latex using the established linear relation between log transmittance and concentration. The difference between the amounts of latex added and found in the supernatant is considered to be the amount deposited on fibres.

Handsheets: Fibres treated with latex were formed into handsheets in British Sheet Machine, pressed, dried in rings and tested by standard methods.

Results and discussion

Latex deposition: An effective deposition of latex particles on fibres suspended in water can be expected when electrostatic attraction between cationic latex and anionic fibre is operative. It has to be realized, however, that several factors may interfere with the process of deposition. Depending on the type of ionic groups of the latex its charge might be sensitive to pH.

Figure 1 (overleaf) shows the electrophoretic mobility as a function of pH for the two latexes used and cotton fibre. It is obvious that the requirement of oppositely charged fibres and latex are met for latex A at a lower pH than for latex B. Thus an attempt to deposit latex at a pH where its charge was reversed will not be successful.

There are however other factors which may affect the deposition of cationic latex on anionic fibres. One of them is the presence of "free charge" in latex⁽³⁾. "Free charge" represents the ionic compounds formed during polymerization or used as

To View this article you must be a
member/subscriber of PITA

Call +44 161 764 5858

Or

info@pita.co.uk

To receive your reference number or
application form.

**David Watson and
Ross MacHattie**
Honeywell Process Solutions

Winner of the
Roger Martin Memorial Prize
– PITA Coating Conference 2005

Coating Consolidation Measurement and Control Reduces Variations and Costs

Producing uniform and consistent coating quality at the lowest cost is the goal for all coating machines. This is not easy to accomplish, because of the large number of inter-related variables, ranging from the recipe, rheology and applied solids, to base sheet porosity and the characteristics of the coater itself.

One key element for uniformity and consistency is control of the coating consolidation process. Because there has been no way of measuring consolidation, operators have typically over-dried the coating to prevent "painting" the machine. They have also used the drying process to control the sheet bulk moisture, which is rarely the same as the moisture content of the coating.

This feature describes the development of a measurement and control system which uses remote distributed sensing to give direct measurements of coating consolidation, enabling true control of the coating drying process.

This ability to control the rate of evaporation requires continuous control of both air dryers and infrared (IR) dryers, providing papermakers with a valuable tool to enhance product quality while minimizing costs.

The authors also discuss the system development from laboratory and pilot coater testing to results from a full

The key factors in a coating process are applying an even layer of coating on a substrate and removing fluid mass from the coating in a controlled fashion to deliver high quality product at maximum production rates. The tools generally available for fluid removal are IR, air, and cylinder dryers.

IR and air dryers are non-contacting drying elements and must provide enough drying before contact with the cylinder surfaces to prevent sticking or picking.

IR dryers are primarily energy transfer devices, but they also provide some degree of mass transfer depending on their configuration. Air dryers are primarily mass transfer devices, but by default also provide energy transfer to balance latent heat of evaporation. Mass transfer also occurs in open draws, depending on the degree of energy that has been transferred into the coating. Cylinder dryers are used primarily for finish properties and end point moisture content control.

Current measurement and supervisory control systems exist to effectively control the final moisture through the cylinder dryers. Low-level temperature and plenum pressure controllers traditionally control air dryers in an effort to provide constant heating at a constant jet velocity.

These simple regulatory controls, while very effective in keeping the equipment conditions constant do not, in practice, keep the evaporation rate constant. A void exists for the supervisory control of the evaporation rate through the preceding open draws, IR and air dryers.

Affect of Drying on Print Surface

In 1998, results from pilot coater studies showed how the drying of paper coatings, can significantly affect the back-trap mottle of coated paper.⁽¹⁾ In these studies a direct measurement of coating consolidation was not available and some of the analysis had to be based upon mathematical models to calculate critical solids and net evaporation rates.

Kim *et al.* showed that to control back-trap mottle, the drying strategy must strike a bal-

ance between early-harsh and late-mild drying while restricting net evaporation rates over the critical solids range. They also showed that in a few cases drying conditions affected porosity and K&N ink adsorption of the coated paper.

In 2002, results from pilot coater studies showed how the drying temperature, can affect the calendering properties and the calendering energy required to achieve a smooth paper surface.⁽²⁾ Suontausta described i) how the drying temperature determines the bonding strength between the coating pigment and the latex binder, and ii) that it is this variable that determines the calendering conditions required to smooth the coated surface. Lower drying temperatures enable better surface finishes with lower energy. Drying rate is directly related to sheet temperature.

Measurement of Coating Drying Rate – Lab – Pilot Coater – Production On-Machine Coater

In 1982 it was described how the reflective properties of coating change as the water leaves the coating.⁽³⁾ As Watanabe and Lepoutre showed, the gloss of a drying surface changes abruptly at the point when a continuous film of liquid is no longer present, and drops off rapidly until the point at which air begins entering the coating.

Conversely, the scattering of light increases during this process, as indicated in *Figure 1 (overleaf)*. By utilizing this fact, and using a ratio of diffuse to specular Reflection, a robust measurement of these reflectivity changes was created, suitable for the hostile on-line environment of production coaters.

The result is a system comprised of sensors which i) deliver light to a freshly coated surface and ii) detects both the specular and diffuse reflections from the surface. This ratio is then scaled as described in equation (1) and termed the new unit "gel". One of the sensors is shown in *Figure 2 (overleaf)*.

$$Gel = \left[1 - \left(\frac{Diffuse}{Specular} \right) \times 100 \right] \quad (1)$$

To View this article you must be a
member/subscriber of PITA

Call +44 161 764 5858

Or

info@pita.co.uk

To receive your reference number or
application form.

**T. Patterson,
F. Ahrens**

*Institute of Paper Science
and Technology, Atlanta, GA*

Development of Pulsed Air Drying (PAD) – A "New" Air Impingement Technology

The application of pulse, combustion-based jet impingement to paper drying was the subject of an experimental investigation. Most of the work focused on towel grades, however both newsprint and linerboard were tested.

The primary interest was to determine the applicability of the technology to towel/tissue manufacture, with the idea that some of the steady impingement used in a Yankee dryer hood would be replaced by a Pulsed Air Dryer.

The performance of three different systems, under various operating conditions, was evaluated:- steady impingement, pulsed air impingement and pulsed combustion impingement. Pulse combustion impingement can produce significantly higher drying rates compared with steady flow impingement.

While pulse combustion impingement used for paper drying can produce significantly higher drying rates, performance depends on:

*the configuration of the pulse combustor
the impingement nozzle geometry
the substrate supporting the sheet
the presence or absence of vacuum*

Standard steam heated dryer can provide an efficient means of drying paper. However, the attainable drying rate is relatively low compared to other means of drying. The low drying rate translates into the need for large numbers of dryer cans, and, in many cases, into machines that have production capacities that are determined solely by the dryer section.

A means of increasing drying rate is to augment the dryer cans with hot air impingement drying. This has been used for years on Yankee dryers. Hot air impingement has been proposed as a means to increase the productivity of multi-cylinder dryer sections for a range of paper and board grades. In that application, the impingement dryers become part of a hybrid drying system^[1].

Background: the need for high and efficient drying rates

The primary drawback to steady flow hot air impingement for drying is that it has a lower efficiency than steam heated dryer cans. The increased drying rate provided by an impingement air system must provide sufficient increases in productivity to offset the inherent lower efficiency. Thus, any impingement system used in paper production must produce the high drying rates and must do so as efficiently as possible.

One means of increasing the drying rate produced by air impingement is to use a pulsating flow. Pulsating flows can, if properly implemented, alter the structure of the boundary layer and provide enhanced heat and mass transfer. Typically, the enhancement increases with increasing amplitude of the velocity fluctuation.

Such a flow is often produced using a pulse combustion burner^[2]. A pulse combustion burner consists of a combustion chamber with air and fuel (gas) inlet valves, and a tailpipe. When properly designed, the burner becomes a resonant system, which operates stably at a fixed frequency.

The fuel and air are admitted during the low-pressure portion of the cycle. Combustion

leads to the high pressure portion of the cycle, which forces a strong pulsation through the tailpipe towards the tailpipe exit. When the pulsation are sufficiently large, flow reversal occurs in the tailpipe. The flow reversal of the exhaust gases is thought to be critical to attaining significant enhancements of heat and mass transfer.

Previous applications of pulse combustion burners to heating and drying, conduction through the walls of the tailpipe (furnaces and boilers) and the turbulent flow inside the tailpipe for drying of particulates (spray drying). There has been limited work taking advantage of the pulsatile flow emitted from the tailpipe (impingement drying).

This paper focuses on results of an experimental investigation of pulse combustion driven impingement paper drying. The majority of the experimental work focused on towel grades, however both newsprint and linerboard were tested.

The work demonstrated that the pulse combustor design and the resultant tailpipe exit flow conditions were significant factors in attaining high mass transfer rates from the sheet. The pulsation effect also allowed the use of impingement jet temperatures that exceed those typical of current steady flow impingement systems.

Equipment tested: 3 prototype combustors

During the course of the project three different prototype combustors were tested. Each had unique attributes, all used propane as the primary fuel.

System 1, Aerodynamic Valve: The first system tested – System 1 – was the most basic. This system was intended as a proof-of-concept. The control was fully manual. A schematic of the system is shown in *figure 1 (overleaf)*.

System 1 used an aerodynamic valve to control the air flow to the burner. In this design there were no moving parts, the shape of the combustion chamber and the inlet to the chamber were designed such that the pressure changes in the combustion chamber

To View this article you must be a
member/subscriber of PITA

Call +44 161 764 5858

Or

info@pita.co.uk

To receive your reference number or
application form.

Tobias Hain
Erhardt + Leimer, Augsburg
Germany

Production and Quality Improvements using Automatic Fabric Tension Controllers and Tension Monitoring

The precise and automatic control of the tension of machine clothing brings a very high return on investment, since clothing has a huge influence on:

*machine runnability and output
paper quality
the consumption of steam and chemicals*

However, tension control gets very low priority in paper mills, even though its impact on the drive, guiding, dewatering and formation, etc are well understood.

Because the tension of the fabrics is influenced by ever changing production conditions, there is a need for monitoring and automatic control in wire, press and drying sections.

Wire section: *Foil blade dewatering is greatly influenced by fabric tension, since, for example, excessive tension reduces turbulence and dewatering. Tension control can be achieved by an automatic system, with strain gauge load cells installed in the return run of the wire.*

Optimised tension control prolongs the life of forming wires, foils and vacuum elements by reducing abrasion. It also provides stable conditions for wire guiding and extends fabric life - most fabric losses are related to tension problems rather than the guiding equipment.

In paper and board production, forming fabrics, press felts and dryer screens have become a very important factor. Beside the main tasks of dewatering the stock and conveying the paper sheet from the headbox to the pope-reel, they influence the paper making process in many ways. The following can, in certain aspects, be directly related to the use of PM clothing.

- Paper quality and quantity
- machine runnability and efficiency
- economical aspects such as the consumption of steam and paper making chemicals

The improvement of fabrics is the subject of many investigations and R&D projects, work which is still ongoing. New fabric designs, materials and production processes



Figure 1: Press Felt Tension Measuring with bracket type load cell.

which promote longer fabric life-time, better runnability and better paper quality are being introduced to the market. PM clothing can be rated as the most important paper making tool.

But how do we use this tool? Besides tracking the fabric inside the paper machine (fabric guiding), fabric tension is essential for the drive, guiding, dewatering, formation and many other factors. Even though this is well understood by papermakers, the priority for the correct handling of the fabric tension is low or non existent.

As tension control becomes more precise, it will soon positively influence manufacturing cost, paper quality and production rates. Changing production conditions are influencing the fabric tension and creating a need for monitoring and automatic control.

The significant advantages which arise from the automatic control of clothing tension substantially outweigh the price of these systems. The return on investment from tension measuring and control systems is very fast - on both new machines and rebuilds.

In the following pages, the influence of fabric tension measurement and control are investigated and evaluated for the different sections in paper machine: the wire section; the press section, *figure 1*; the drying section.

The Wire section

In the wire section, *figure 2*, the sheet is

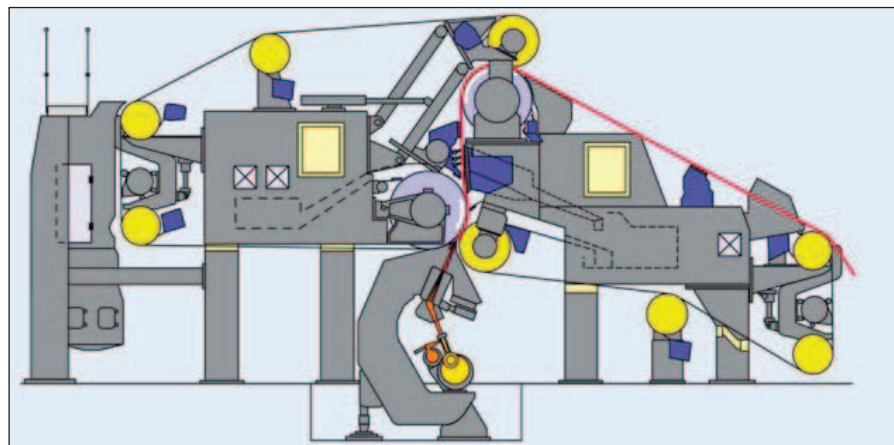


Figure 2: Modern wire section with Gap Former

To View this article you must be a
member/subscriber of PITA

Call +44 161 764 5858

Or

info@pita.co.uk

To receive your reference number or
application form.

Knut Helmer
Voith Paper, Germany
Tiina Karppinen
M-real, Finland
Björn Lindqvist
Imerys Minerals Ltd, UK

Curtain vs. Blade Coating: Experience in Board Application

Curtain coating is well known in the speciality sector, but has not, as yet, been applied to board and packaging grades.

The authors present the results of a study which compared the blade and curtain coating of double coated FBB. It was found that the use of the curtain coater in a double coating concept for FBB leads to a more even offset print result with less mottling tendency and a more open surface structure.

This optimised coating concept combines both coating types and provides the following benefits:

- The smoothing effect of the blade coater
- The high coverage of the contour coating. When used for the top-coat, the curtain coater provides defect-free surfaces without, for example blade lines. The result is a more even visual impression of the unprinted as well as the offset printed board surface.

The combined concept can bring a reduction in smoothness and gloss. But, it is possible to compensate for this by optimising the coating colour formulation.

PITA Coating Conference
2005

New coating technologies can play a key role in meeting the increasing demand for quality and cost efficiency of printed products. Curtain Coating is a well known technology in the coating of speciality papers, but as yet, it has not been introduced to the board and packaging sector. This feature focuses on the opportunities created by this new technology.

The objective of the work was to investigate different coating concepts for double coated Folding Box Board (FBB). It focuses on two main areas: i) the machine concept and ii) coating colour optimization.

In this study, only double coating machine concepts were evaluated and the thrust of the

work was to compare blade coating with a jet (Jet-Flow F) and the new curtain coating technology (DF Coater).

Four application combinations were tested, see Table 1.

In the coating colour optimisation, different clays and clay ratios as well as different GCC (ground calcium carbonate) qualities were compared.

Two pre-coating colour formulations and two top-coating colour formulations were tested, see Table 4.

Pilot Trials in Finland and Germany

Table 2 shows the conditions for the trials which were performed, as follows:

	Reference			
Pre-Coat	Jet	Jet	Curtain	Curtain
Top-Coat	Jet	Curtain	Jet	Curtain

Table 1: Tested machine concepts.

Process parameters	
Web speed	450 m/min
Pre-coat weight	10 g/m ²
Top-coat weight	12 g/m ²
Base board	Folding Box Board
Base board weight	190 g/m ²
Base board roughness	4.5 µm
Coater settings Jet	
Blade	Bent Blade
Blade thickness	0.381 mm
Blade extension	20 mm
Jet angle	30°
Coater settings Curtain	
Impingement angle	-5°
Air removal	non contact
Calender settings	
Type	Soft Nip
Configuration	2 x 1 Nip
First Side to steel roll	Coated side
Line load	35 kN/m
Temperature	100°C

Table 2: Trial parameters

To View this article you must be a
member/subscriber of PITA

Call +44 161 764 5858

Or

info@pita.co.uk

To receive your reference number or
application form.

Products & Services Directory

For a more extensive and fully searchable listing, visit www.pita.co.uk

COMPANY	LOCATION	CONTACT	TELEPHONE	E.MAIL
ABSORBENCY AIDS				
Blackburn Chemicals	Lancashire	Amanda Lamb	01254 52222	alamb@bbchem.co.uk
AIR SHAFTS EXPANDING				
Jarshire Ltd	Slough	Bob Longbottom	01753 825122	sales@jarshire.co.uk
AIR TURN SYSTEMS				
Spooner Industries	Ilkley	Steve Newell	01943 609505	snewell@spooner.co.uk
ANTI-SLIP SURFACES				
Scotgrip (UK) Ltd	Kincardineshire	James Smith	01330 825335	sales@scotgrip.com
AUTOMATED HANDLING & WRAPPING REELS AND PALLETS				
Jarshire Ltd	Slough	Bob Longbottom	01753 825122	sales@jarshire.co.uk
Pesmel of Finland	West Yorkshire	Jukka Tamminen-Jackson	01924 848399	jukka.tamminen@pesmel.com
AUTOMATED SPRAYING AND CONTROL				
Spraying Systems Ltd	Farnham, Surrey	Rowland Bailey	01252 727200	info@spray-uk.co.uk
BARRIER COATINGS				
GBC (Speciality Chemicals)	Oxford	Adrian Iley	01608 813088	gbcspecs@enablis.co.uk
BIOCIDES				
Kolb Distribution	Lancashire	Malcolm Austin	07720 287460	malcolm.austin@kolb.ch
BLADE HOLDERS, COATING & CREPING				
BTG	North Harrow	John Grensinger	020 8515 6050	sales@btgppt.com
Jarshire Ltd	Slough	Bob Longbottom	01753 825122	sales@jarshire.co.uk
BLADES, COATING, CREPING AND PRINTING				
BTG	North Harrow	John Grensinger	020 8515 6050	sales@btgppt.com
Jarshire Ltd	Slough	Bob Longbottom	01753 825122	sales@jarshire.co.uk
BROKE ROLL HANDLING				
Core Link AB	Falkenberg, Sweden	Thomas Nilsson	+46 346 56824	t.nilsson@corelink.se
BROKE ROLL SPLITTERS				
Core Link AB	Falkenberg, Sweden	Thomas Nilsson	+46 346 56824	t.nilsson@corelink.se
CHARGE MONITORING CONTROL WET END				
BTG	North Harrow	John Munday	020 8515 6050	sales@btgppt.com
CHUCKS				
Jarshire Ltd	Slough	Bob Longbottom	01753 825122	sales@jarshire.co.uk
COATING CONSULTANTS				
Jarshire Ltd	Slough	Bob Longbottom	01753 825122	sales@jarshire.co.uk
COATING EQUIPMENT & MATERIALS				
Jarshire Ltd	Slough	Bob Longbottom	01753 825122	sales@jarshire.co.uk
COATING SYSTEMS				
BTG	North Harrow	John Grensinger	020 8515 6050	sales@btgppt.com
CONDITION MONITORING				
Monitran Ltd	Buckinghamshire	Suzanne Pearl	01494 816569	suzanne.pearl@monitran.co.uk
CONSULTANCY SERVICES				
Clearwater Paper Technology Ltd	Devon	Ron Slucky	01884 255455	ras@clearwater-technology.com
Clearwater Poole	Bury	John Poole	0161 797 3437	jpoole@clearwaterpoole.co.uk
The PITA Register	Bury	John Clewley	0161 764 5858	info@pita.co.uk
CONTRACT RESEARCH				
BC Paper	North Wales	Dr. Richard Quinney	01248 370588	r.f.quinney@bangor.ac.uk
University of Manchester	Manchester	Bob Wilde	0161 306 3904	r.wilde@umist.ac.uk
CORE CUTTER & CORE HANDLING				
Core Link AB	Falkenberg, Sweden	Thomas Nilsson	+46 346 56824	t.nilsson@corelink.se
COUPLINGS				
John Crane UK Ltd	Manchester	Gary Webb	07711 650660	gary.webb@johncranemcr.co.uk
CRANES				
Konecranes	Lanarkshire	Gordon Adie	01355 220591	gordon.adie@konecranes.com
DEFOAMERS				
Blackburn Chemicals	Lancashire	Amanda Lamb	01254 52222	alamb@bbchem.co.uk
Kolb Distribution	Lancashire	Malcolm Austin	07720 287460	malcolm.austin@kolb.ch
DE-INKING CHEMICALS				
Kolb Distribution	Lancashire	Malcolm Austin	07720 287460	malcolm.austin@kolb.ch
Stephenson Recycling Chemicals	Bradford	Ramesh Patel	01274 723811	src@stephensongroup.co.uk
DOCTOR BLADES				
Jarshire Ltd	Slough	Bob Longbottom	01753 825122	sales@jarshire.co.uk
DRYING CYLINDER SERVICES				
Bender Machine Services	Rosendale	Steven Withers	01706 225521	swithers@bendermachine.com

Products & Services Directory

For a more extensive and fully searchable listing, visit www.pita.co.uk

COMPANY	LOCATION	CONTACT	TELEPHONE	E.MAIL
DRYING CYLINDERS				
Clearwater Poole	Bury	John Poole	0161 797 3437	jpoole@clearwaterpoole.co.uk
Sandusky Walmsley	Bolton	Mike Valentine	01204 396060	mavalentine@sanwal.co.uk
DRYING CYLINDERS MAINTENANCE				
Intertechnics-Cumel-ReDoc	Oxford	Anthony Shepherd	01993 810080	info@intertechnics.co.uk
DRYING HOODS & VENTILATION				
Greenbank Engineering	Blackburn	David Wilkinson	01254 690555	info@greenbanktechnology.co.uk
DRYING ROLLERS				
Sandusky Walmsley	Bolton	Mike Valentine	01204 396060	mavalentine@sanwal.co.uk
DRYING SYSTEMS				
Greenbank Engineering	Blackburn	David Wilkinson	01254 690555	info@greenbanktechnology.co.uk
Jarshire Ltd	Slough	Bob Longbottom	01753 825122	sales@jarshire.co.uk
Spooner Industries	Ilkley	Steve Newell	01943 609505	snewell@spooner.co.uk
DYESTUFFS				
Albion Colours	Halifax	David McCarthy	01422 358431	David.McCarthy@albionchemicals.co.uk
EDGE GUIDANCE SYSTEMS				
Fine Controls	Wirral	John Donaldson	0151 343 9966	John@finecontrols.com
EFFLUENT TREATMENT				
Huber Technology	Chippenham	Nick Hunt	01249 765000	nh@huber.co.uk
KWI (UK) Ltd	Flintshire	Phil Woollen	01352 700224	info.uk@kwi-intl.com
END OF LINE PACKAGING SYSTEMS				
Pesmel of Finland	West Yorkshire	Jukka Tamminen-Jackson	01924 848399	jukka.tamminen@pesmel.com
ENGINEERING, MAINTENANCE AND INSTALLATION				
Smithtech Engineering	Chorley	JD Smith	07775 732857	jd@trubody.freeserve.co.uk
ENGINEERING SERVICES				
Bender Machine Services	Rossendale	Steven Withers	01706 225521	swithers@bendermachine.com
Clearwater Poole	Bury	John Poole	0161 797 3437	jpoole@clearwaterpoole.co.uk
FIBRE RECOVERY EQUIPMENT				
Huber Technology	Chippenham	Nick Hunt	01249 765000	nh@huber.co.uk
KWI (UK) Ltd	Flintshire	Phil Woollen	01352 700224	info.uk@kwi-intl.com
FILTRATION				
Premier Filtration	High Wycombe	Chris Smith	01628 527704	premier@filt.fsnet.co.uk
FILTRATION SYSTEMS WATER				
John Crane UK Ltd	Manchester	Gary Webb	07711 650660	gary.webb@johncranemcr.co.uk
FLAME RETARDANTS				
Mare Paper Chemicals Group	Luton	Mitch Cook	01582 811900	Mitch.Cook@maregroup.co.uk
INFRARED DRYERS				
Compact Engineering	Thirsk	Tim Klemz	01845 525356	apollo@compact.co.uk
Jarshire Ltd	Slough	Bob Longbottom	01753 825122	sales@jarshire.co.uk
INSTALLATION & ALIGNMENT SERVICES				
Bender Forrest Ltd	Rossendale	Stefan Wilds	01706 225521	swilds@bendermachine.com
Clearwater Poole	Bury	John Poole	0161 797 3437	jpoole@clearwaterpoole.co.uk
INSTRUMENTATION				
Fine Controls	Wirral	Gareth Hall	0151 343 9966	Gaz@finecontrols.com
LUBRICATION MANAGEMENT				
ChevronTexaco Global Lubricants	Staffordshire	Mick Doxford	020 7719 2227	mickdoxford@chevrontexaco.com
LUBRICATION SYSTEMS (CENTRALISED), DESIGN & INSTALL				
Harrison Lubrication	Bolton	Phil Vause	01204 691352	sales@hle.co.uk
John Crane UK Ltd	Manchester	Gary Webb	07711 650660	gary.webb@johncranemcr.co.uk
MACHINERY SAFETY & INSPECTIONS				
Laidler Associates	Teesside	Derek Coulson	08700 111375	enquire@laidler.co.uk
MILLWIDE SYSTEMS				
Applied Software Control (A.S.C.)	Aberdeen	David Capel	01224 643792	d.capel@ascman.co.uk
PACKAGING MATERIALS, MACHINES AND SYSTEMS				
Pesmel of Finland	West Yorkshire	Jukka Tamminen-Jackson	01924 848399	jukka.tamminen@pesmel.com
PAPER, TISSUE & BOARD MACHINES				
Clearwater Poole	Bury	John Poole	0161 797 3437	jpoole@clearwaterpoole.co.uk
Jarshire Ltd	Slough	Bob Longbottom	01753 825122	sales@jarshire.co.uk
Sandusky Walmsley	Bolton	Tony Pope	01204 396060	tpope@sanwal.co.uk
Voith Paper	Manchester	Keith Millington	0161 655 2912	keith.millington@voith.com
PEARL LUSTRE PIGMENTS				
Merck Chemicals Ltd	Poole	Stephen Harpham	01202 785313	stephen.harpham@merckscLtd.co.uk

Products & Services Directory

For a more extensive and fully searchable listing, visit www.pita.co.uk

COMPANY	LOCATION	CONTACT	TELEPHONE	E.MAIL
PIGMENTS				
Clariant	Leeds	Louise Barker	0113 239 8265	louise.barker@clariant.com
Sun Chemical	Milton Keynes	Ian Knowles	0161 443 1174	ian.knowles@eu.sunchem.com
PILOT PLANT FACILITIES				
BC Paper	North Wales	Dr. Richard Quinney	01248 370588	r.f.quinney@bangor.ac.uk
University of Manchester	Manchester	Bob Wilde	0161 306 3904	r.wilde@umist.ac.uk
PIPEWORK & VESSEL FABRICATIONS				
Bender Forrest Ltd	Rossendale	Stefan Wilds	01706 225521	swilds@bendermachine.com
PRECISION PNEUMATICS				
Fine Controls	Wirral	John Donaldson	0151 343 9966	John@finecontrols.com
PROCESS CONTROL				
BTG	North Harrow	John Munday	020 8515 6050	sales@btgppt.com
PROJECT ENGINEERING/CONSULTANCY				
Bender Forrest Ltd	Rossendale	Stefan Wilds	01706 225521	swilds@bendermachine.com
Clearwater Poole	Bury	John Poole	0161 797 3437	jpoole@clearwaterpoole.co.uk
PULP AND PAPER MILL DESIGNERS & ENGINEERS				
Clearwater Poole	Bury	John Poole	0161 797 3437	jpoole@clearwaterpoole.co.uk
QUALITY CONTROL INSTRUMENTS				
Tendring Pacific	Saffron Walden	Anton Hutson	0870 240 1886	anton@tendringpacific.com
QUALITY INFORMATION SYSTEMS				
QISoft Limited	Leyland	Tim Perris	01772 641133	info@qisoft.com
RAW WATER TREATMENT				
Huber Technology	Chippenham	Nick Hunt	01249 765000	nh@huber.co.uk
KWI (UK) Ltd	Flintshire	Phil Woollen	01352 700224	info.uk@kwi-intl.com
REBUILDS, MAJOR				
Clearwater Poole	Bury	John Poole	0161 797 3437	jpoole@clearwaterpoole.co.uk
Sandusky Walmsley	Bolton	Tony Pope	01204 396060	tpope@sanwal.co.uk
Voith Paper	Manchester	Keith Millington	0161 655 2912	keith.millington@voith.com
REBUILDS, RECONDITIONED PLANT/PARTS				
Clearwater Poole	Bury	John Poole	0161 797 3437	jpoole@clearwaterpoole.co.uk
REEL & PALLET WRAPPING SYSTEMS				
Jarshire Ltd	Slough	Bob Longbottom	01753 825122	sales@jarshire.co.uk
REEL STANDS				
Jarshire Ltd	Slough	Bob Longbottom	01753 825122	sales@jarshire.co.uk
REFINING AND DEFLAKING				
JOCRO Technology	Bolton	Joe Crook	01204 840937	bryants-house@supernet.com
Pilao International Ltd	Darwen	Mel Hadfield	01254 873871	info@pilao.co.uk
REPLACEMENT PARTS				
Clearwater Poole	Bury	John Poole	0161 797 3437	jpoole@clearwaterpoole.co.uk
Sandusky Walmsley	Bolton	Derek Lees	01204 396060	dlees@sanwal.co.uk
RF/AIR DRYING				
Greenbank Engineering	Blackburn	David Wilkinson	01254 690555	info@greenbanktechnology.co.uk
Jarshire Ltd	Slough	Bob Longbottom	01753 825122	sales@jarshire.co.uk
ROLL GRINDING, REFURBISHMENT & SERVICING				
Bender Machine Services	Rossendale	Steven Withers	01706 225521	swithers@bendermachine.com
Sandusky Walmsley	Bolton	Tony Treloare	01204 396060	tatreloare@sanwal.co.uk
Voith Paper (Service Centre)	Manchester	Robert O'Shaughnessy	0161 655 2933	robert.o'shaughnessy@voith.com
ROLLERS				
Sandusky Walmsley	Bolton	Mike Valentine	01204 396060	mavalentine@sanwal.co.uk
ROTARY JOINTS AND SYPHONS				
Deublin Ltd	Hampshire	Denzil Ralph	01264 333355	dralph@deublin.co.uk
Johnson Systems International Ltd	West Yorkshire	David Moss	01943 607550	dmosse@joco.nl
SEALS				
Advanced Sealing Solutions Ltd	Northampton	Paul Marchant	01604 830183	paul82@netlineuk.net
John Crane UK Ltd	Manchester	Gary Webb	07711 650660	gary.webb@johncranemcr.co.uk
SHOWER SYSTEMS/SPRAY NOZZLES				
Spraying Systems Ltd	Farnham, Surrey	Rowland Bailey	01252 727200	info@spray-uk.co.uk
SITE SERVICES				
Bender Forrest Ltd	Rossendale	Stefan Wilds	01706 225521	swilds@bendermachine.com
Clearwater Poole	Bury	John Poole	0161 797 3437	jpoole@clearwaterpoole.co.uk
SIZING				
Mare Paper Chemicals Group	Luton	Mitch Cook	01582 811900	mitch.cook@maregroup.co.uk
SLITTING & CUTTING EQUIPMENT				
Jarshire Ltd	Slough	Bob Longbottom	01753 825122	sales@jarshire.co.uk

Products & Services Directory

For a more extensive and fully searchable listing, visit www.pita.co.uk

COMPANY	LOCATION	CONTACT	TELEPHONE	E.MAIL
SLUDGE DEWATERING				
Huber Technology	Chippenham	Nick Hunt	01249 765000	nh@huber.co.uk
Jarshire Ltd	Slough	Bob Longbottom	01753 825122	sales@jarshire.co.uk
SLUDGE PROCESSING AND UTILISATION				
EnviroSystems (UK) Ltd	Preston	Liz Russell	01772 860085	liz@envirosys.co.uk
Huber Technology	Chippenham	Nick Hunt	01249 765000	nh@huber.co.uk
SOLENOID & CONTROL VALVES				
Fine Controls	Wirral	Gareth Hall	0151 343 9966	Gaz@finecontrols.com
STEAM AND CONDENSATE SYSTEMS				
Deublin Ltd	Hampshire	Denzil Ralph	01264 333355	dralph@deublin.co.uk
Johnson Systems International Ltd	West Yorkshire	David Moss	01943 607550	dmoss@joco.nl
STICKIES CONTROL				
Kolb Distribution	Lancashire	Malcolm Austin	07720 287460	malcolm.austin@kolb.ch
Luzenac	Toulouse, France	Kari Alenius	0800 032 3114	kari.alenius@europe.luzenac.com
STOCK CHEST CLEANING				
Spraying Systems Ltd	Farnham, Surrey	Rowland Bailey	01252 727200	info@spray-uk.co.uk
STOCK PREPARATION				
Sandusky Walmsley	Bolton	Alan Morley	01204 396060	amorley@sanwal.co.uk
Voith Paper Fibre Systems	Manchester	Darryl Holt	0161 655 2907	darryl.holt@voith.com
John Wilkie - Hett GmbH	Perthshire	John Wilkie	01764 685267	WilkieMaryfield@aol.com
STRETCH FILMS AND WRAPPING MACHINES				
Pesmel of Finland	West Yorkshire	Jukka Tamminen-Jackson	01924 848399	jukka.tamminen@pesmel.com
STROBOSCOPES				
Euroto Ltd	Bolton	Tony Aspinall	01204 665050	sales@euroto.co.uk
SYPHON SYSTEMS				
Deublin Ltd	Hampshire	Denzil Ralph	01264 333355	dralph@deublin.co.uk
TESTING AND ANALYTICAL SERVICES				
BC Paper	North Wales	Rebecca Snell	01248 370588	r.snell@bangor.ac.uk
University of Manchester	Manchester	Bob Wilde	0161 306 3904	r.wilde@umist.ac.uk
THERMAL SPRAY/METAL SPRAY COATING SERVICES				
Bender Machine Services	Rosendale	Steven Withers	01706 225521	swithers@bendermachine.com
TRAINING				
Bury College	Bury	Jean McLaughlin	0161 797 4325	jeannie.mclaughlin@burycollege.ac.uk
Paper Classroom	Bolton	Steve Mann	07780 614148	steve@paperclassroom.com
PITA Trainers	Bury	John Clewley	0161 764 5858	info@pita.co.uk
University of Manchester	Manchester	Bob Wilde	0161 306 3904	r.wilde@umist.ac.uk
USED RECONDITIONED MACHINERY				
John Wilkie Papermill Services Ltd	Perthshire	John Wilkie	01764 685267	WilkieMaryfield@aol.com
VACUUM PUMPS & SYSTEMS				
Flowtech Pumps	Manchester	Ian Pendleton	0161 794 8038	ipendleton@pumpgroup.co.uk
Gardner Denver Nash UK Ltd	Winsford	Alan Birchall	01606 542421	alan.birchall@gb.gardnerdenver.com
VALUATION SERVICES				
John Wilkie Papermill Services Ltd	Perthshire	John Wilkie	01764 685267	WilkieMaryfield@aol.com
VALVES				
Lohse GmbH	Croydon	Kevin Bracken	020 8667 3013	kevin.bracken@voith.com
VIBRATION EQUIPMENT				
Monitran Ltd	Buckinghamshire	Suzanne Pearl	01494 816569	suzanne.pearl@monitran.co.uk
WASTE TRIM REMOVAL SYSTEMS				
Jarshire Ltd	Slough	Bob Longbottom	01753 825122	sales@jarshire.co.uk
WATER CLARIFICATION				
Huber Technology	Chippenham	Nick Hunt	01249 765000	nh@huber.co.uk
Jarshire Ltd	Slough	Bob Longbottom	01753 825122	sales@jarshire.co.uk
John Wilkie Papermill Services Ltd	Perthshire	John Wilkie	01764 685267	WilkieMaryfield@aol.com
KWI (UK) Ltd	Flintshire	Phil Woollen	01352 700224	info.uk@kwi-intl.com
WATER RECOVERY				
Huber Technology	Chippenham	Nick Hunt	01249 765000	nh@huber.co.uk
KWI (UK) Ltd	Flintshire	Phil Woollen	01352 700224	info.uk@kwi-intl.com
WEB BRAKE DETECTION				
Fine Controls	Wirral	John Donaldson	0151 343 9966	John@finecontrols.com
WET/DRY STRENGTH RESINS				
Mare Paper Chemicals Group	Luton	Mitch Cook	01582 811900	mitch.cook@maregroup.co.uk
WIRE AND FELT CLEANERS				
Kolb Distribution	Lancashire	Malcolm Austin	07720 287460	malcolm.austin@kolb.ch
WRAPPING EQUIPMENT				
Pesmel of Finland	West Yorkshire	Jukka Tamminen-Jackson	01924 848399	jukka.tamminen@pesmel.com

Industry Update

Lanxess Paper Business Unit

Eckhard Wenderoth (56) has been appointed Head of Lanxess's Paper Business Unit. He succeeds Andreas Scheurell (44) who is taking on new responsibilities at Lanxess Corporation, Pittsburgh, USA.

Mr Wenderoth has represented Lanxess in Japan since 2004, where he was President and CEO of Lanxess K.K., Tokyo. He has almost 35 years' experience in the Bayer-Group, primarily in the paper business.

300,000 tpy CCM machine starts up in France

The new 300,000 tpy CCM machine of Emin Leydier has begun commercial production at the greenfield mill in Nogent-sur-Seine in northern France.

PM1 is producing 105 g/m² testliner and light weight recycled fluting of less than 100 g/m². The machine is designed to produce lightweight board in the 70-110 g/m² range based on 100% recovered fibre.

The first reels from the PM1 line were sent to Emin Leydier's own converting plants which are expected to convert around 25% of output itself. The rest will be sold on the open market.

New pulp and paper research chairs at McGill University

Two new industrial research chairs are being established at McGill University to study the science of papermaking and enhance the economic and environmental sustainability of the Canadian pulp and paper industry.

Underpinned by government and industry funding of \$3 million, the Chairs will support the training of some 20 masters and doctoral students and will be held by Chemistry researchers Derek Gray and Theo van de Ven. They will focus on:

- The chemistry of paper at the forming stage, while the paper is still wet. "The 'wet' end of the process is of growing importance in papermaking due to increased emphasis on recycling and reduction in water usage," says Dr. Theo van de Ven "It's a field that has direct industrial applications and provides challenging research topics for students."
- Novel properties and uses of wood pulp fibres. "The goal of our research will be to better understand how the cellulose fibres bond together in paper sheets", says Dr. Derek G. Gray. "We also will work on new value-added products based on the unique properties of the fibres".

Stora Enso's new CFO to be deputy CEO

Stora Enso has appointed Hannu Ryöppönen (43) as Chief Financial Officer (CFO) and Senior Executive VP Finance, Accounting, Legal Affairs and Investor Relations as of 1 September 2005. He will be based in the London International Office.

The Board of Directors has revised the Corporate Governance to reflect the new organisational structure which came into effect on 1 May 2005 and the retirement of Deputy CEO Björn Häggglund on 1 June 2005.

The specific role of Deputy CEO has been discontinued as the CFO will also act as a deputy to the CEO when required.

Esko Mäkeläinen, the current CFO, will act as deputy to the CEO from 1 June to 31 August 2005 and Mr Ryöppönen will become deputy to the CEO on 1 September 2005. Mr Mäkeläinen will retire from

The new chairs are being funded by Paprican, The Pulp and Paper Research Institute of Canada and by the Federal Government via the Science and Engineering Research Canada (NSERC).

Paprican will contribute \$1.5 million in direct funding, along with significant in-kind resources for both the research and the dissemination of results. NSERC will provide \$1.5 million over five years.

Dr. Tom Brzustowski, President of NSERC, added, "The new chairs and Paprican are working to build innovative research and training programmes that will help Canada take its rightful place as a world leader in pulp and paper research."

The pulp and paper sector is a vital sector contributing more than any other industry to Canada's trade surplus.

McGill University is Canada's leading research-intensive university. Founded in 1821, it has 21 faculties and professional schools and two campuses in Montréal.

The partnership between McGill University and Paprican is an example of how Canadian universities and industry work together for the benefit of the economy and society. www.mcgill.ca/research

Stora Enso at the end of 2005.

The Board now has 10 ordinary members; nine non-executive members who are independent and not affiliated with Stora Enso and one executive member (CEO).

The Nomination Committee, which was formerly appointed by the Board, is now appointed by the shareholders as per the decision of the AGM last March. It consists of four members: the Chairman and the Vice Chairman of the Board and two members appointed annually by the two largest shareholders (one each).

"Our revised Corporate Governance following creates an improved and more efficient management structure, whilst ensuring the highest standards of transparency and accountability in the way we operate," says Jukka Härmälä, Stora Enso's CEO.

www.storaenso.com

SCA communications

Bodil Eriksson, 42, will join SCA as Senior VP Communications and Investor Relations on 1 September. She succeeds Peter Nyquist, who after 10 years within the company, has decided to leave SCA.

Abitibi-Consolidated extends Edinburgh collection system

Abitibi-Consolidated Recycling Europe is expanding its blue bag paper collection scheme, which covers 120,000 Edinburgh households, into a multi-material kerbside system embracing glass, cans, textiles, cardboard and cartons.

The new service comprises a 'quasi weekly' system, within which the collection of paper, glass, cans and textiles will alternate with cardboard and carton collections. The system will collect some 16,000 tpy of recyclate and will have a major impact in helping the City to achieve its recycling target of 27% by the end of 2006.

The cardboard and cartons will be reprocessed by an independent sub-contractor; old newspaper and magazines will end up at Abitibi's Bridgewater Mill and the other materials will be recycled through an End User Consortium, which includes Berryman, Corus, Novelis and the Salvation Army.

The new three-year contract is in addition to the high density paper bank system which

Abitibi-Consolidated Recycling Europe operates for the City's 60,000 tenement properties.

"Edinburgh is a flagship contract, both for Abitibi-Consolidated Recycling Europe and its End User Consortium partners," says Ron Humphreys, managing director of Abitibi-Consolidated Recycling Europe.

"We have been running blue bag kerbside collections of paper for almost two years and welcome the opportunity to convert this to a multi-materials scheme that uses the knowledge we have built up of the local area."

When the new system is 'fully rolled out' next year, it will bring 'a massive reduction in the amount of waste going to landfill.' says Cllr Robert Cairns of City of Edinburgh Council. "Not only will this new service complement the existing paper recycling service, but residents are now being given the chance to recycle over half of their waste at their doorstep."

Abitibi-Consolidated Recycling Europe extends team

Abitibi-Consolidated has appointed two new area managers in its European recycling operation.

Lennie Corrigan joins as area manager for Scotland and the north east, succeeding Mark Holbrook, who becomes business development manager for Abitibi-Consolidated Recycling Europe (ACRE).

Previously contracts manager for VAS Logistics, Mr Corrigan managed the day-to-day multi-material collection schemes in Newcastle under Lyme and St Helens Borough Councils. Before that he spent more than 25 years in logistics.

Ian Halson has been appointed area manager for the south. He joins the company from Harborough District Council in

Leicestershire where, as head of wastes management, he led the programme that raised the local recycling rate from 7.7% to more than 50% within 15 months. An active member of the Chartered Institution of Wastes Management, he brings more than 14 years local authority experience to the company.

"Lennie and Ian both bring additional, invaluable experience to the company," says Peter Mansfield, operations manager of ACRE. "Lennie's logistics skills have helped to deliver two important contracts, and Ian has run a successful trade waste business, introduced a district-wide wheeled bin scheme and bring sites and secured £1.4 million of DEFRA funding."

Rising demand for reconditioned pallets



Whirlowdale manages the supply, return and collection of pallets.

To meet rising demand for reconditioned pallets, Whirlowdale of South Yorkshire is investing in new vehicles - five articulated lorries, two trailers and 14 new forklift vehicles for use at its pallet repair and distribution centres in the North, the Midlands and the South.

Whirlowdale manages the supply, return and collection of pallets for its customers. Its network of pallet distribution centres enable a quick and efficient turnaround of pallets.

Recently, an extra 20,000 sq ft of land has been acquired to develop the Northern site and there are 'ambitious plans' for all four sites. Tel: 01709 829061; Fax: 01709 378947 email: sales@whirlowdale.com

Garnett achieves unique effects with metallic coatings



Figure 1:
An old sepia image of the Garnett Mill is printed onto Alchemy Simply White Board.

The West Yorkshire mill of P Garnett & Son is using metallic coating to produce grades with unique characteristics - the revolutionary *Pearl and Reflections* grade, for example, which can be printed with oxidising or enhanced metallic-effect inks such as Oxy-Dri.

While the the base colour of an *Alchemy* product cannot be replaced with an ink, the ink produces an outstanding effect and the result is a completely different presentation. In *Figure 1*, an old sepia image of the original Garnett Mill is printed onto *Alchemy Simply White* board.

The metallic *Alchemy* range is used for corporate brochures, greetings cards, gift wrap and luxury packaging.

Smith Anderson develops new 600 g/m² board

Smith Anderson is producing a new heavyweight press board from beverage cartons which are processed in a dedicated recycling plant for liquid packaging - the only plant of its kind in the UK.

The liquid carton board, which is made from Scandinavian spruce and pine, produces a long fibred recycled pulp which imparts strength and stiffness. This has enabled the Scottish mill to develop the new board grade which is stronger than its predecessors and is produced in an extended range of colours.

The Fettykil carton recycling plant was opened in

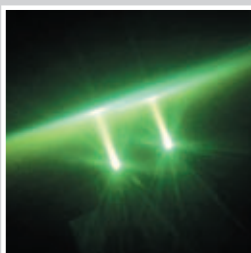
July 2003, following a £500,000 rebuild during which one of the mill's pulpers was modified to process liquid carton, a composite material with layers of paper, aluminium foil and polyethylene coating.

Baled cartons are dropped into the modified hydropulper and agitated to separate the fibre from the other components. The stock is then passed through trommel screens which separate the polyethylene and aluminium foil from the fibre fraction. The plant is currently recycling 100 tonnes of cartons each week.

Your Partner in Machine Performance™



Projects & Site Services



Thermal Spraying



Engineering Services

BENDER

For further information from Bender

Call: +44 (0)1706 225521

Bender Machine Services Ltd, Manchester Road, Haslingden, Lancashire, BB4 5SL, England, UK.
Fax: +44 (0)1706 218844. Web: www.bendermachine.com Email: swithers@bendermachine.com



Certificate No. FM 20177

Installations

Mill	Supplier	Equipment review
Abitibi Consolidated Thorold Mill Ontario Canada	Metso Automation	A contract to implement a mill wide brightness optimization system which will reduce overall bleaching, chemical usage as well as paper brightness variability. The order follows a trial application of Advance Quality Control (AQC) for peroxide and caustic usage at the drum pulper. The Mill wide implementation includes controllers for i) pulper chemicals for both deinking plants, and ii) bleaching chemicals used on both PM lines. All the variables will be manipulated to provide final PM brightness at the lowest operating costs and lowest variability.
APP Gold East Paper Mill Dagang, Jiangsu Province China	Greycon, UK	Trim optimization software came on stream on 1 June at the mill which makes 1.2 million tpy of coated grades on two 9.8m machines and two of the world's biggest biggest offline coaters. A third, 10m machine with a capacity of 700,000 tpy has just started up. The X-Trim programme, which will improve efficiency and yield, is designed to handle complex, multi-stage trim problems which require the simultaneous optimisation of the winders, rewinders and sheeters. The mill has 22 sheeters, 5 guillotines, and two rewinders. website: www.greycon.com
Glatfelter Spring Grove Mill Pennsylvania USA	Metso Paper	A shoe press for PM7, a fine paper machine which will be recommissioned in mid-2006. The new press section will have a shoe press in the second nip and a 3rd press with a variable crown configuration. Also includes: dryer section modifications; mechanical drive equipment; air system ventilation equipment; press and dryer section runnability components including PressNip, Press Run, and UnoRun; pocket ventilation; hood modifications; and steam and condensate modifications.
Gorostid PM Builder Spain	BTG Spain	A major order for consistency transmitters for a board mill in Latin America, includes 29 consistency transmitters of which six are the new TCT-2300 LaserPeak total consistency transmitter. LaserPeak measures total consistency regardless of variations in filler and fines content or fibre properties and works with consistency ranges from 0.5% to 7%. The in-line installation and rapid response of LaserPeak is expected to improve control and minimize the time required for process startup and grade changes.
Guizhou Chitianhua Paper Guizhou Greenfield Pulp Mill China	Metso Paper	A fibre line for the 750 tpd greenfield bamboo pulp mill which will produce fully bleached pulp on start-up in March 2007. Guizhou province has a plentiful supply of bamboo. The €13 million order includes: the main process machinery for de-knotting, screening, washing, oxygen delignification and bleaching. TwinRoll wash presses will be installed in each stage of pulp washing to ensure low COD carry over to pulp bleaching. The high outlet consistency of the TwinRoll provides barrier between the various bleaching stages. Before final bleaching the pulp will go through a two-stage OxyTrac oxygen delignification process. The modern ECF-light bleaching process uses the sequence: Q-OP-D-PO.
	Aker Kvaerner, Norway	A \$10 million order for the world's largest bamboo cooking plant for the new 200,000 tpy pulp mill. The patented Compact Cooking technology is especially effective at reducing problems with scaling, a common issue with bamboo. Includes: engineering, procurement and supervision services (EPS).
Kimberly-Clark	SAP & OAT Systems	Software which will create a standardized RFID infrastructure, minimize the cost of ownership and improve K-C's business integration capabilities. The systems are being supplied by the two market leaders - SAP and OAT - who together will provide a complete RFID infrastructure with optimal functionality. In the initial phase, the 1st standardized interfaces between the SAPAuto-ID Infrastructure and the OAT Foundation Suite have been installed. Kimberly-Clark helped design the appropriate interfaces.
Lee & Man Paper Dongguan City Mill Guangdong Province China	Kadant Black Clawson	New stock prep equipment for the linerboard line at the new mill.

Mill	Supplier	Equipment review
Metsa Tissue Stotzheim Mill Germany	Toscotec, Italy	A wet-end rebuild which will transform the 21,000 tpy suction breast roll / fourdrinier into a crescent former. Includes the approach flow system, the stock prep and the pressure screen and involves significant innovation - in the whitewater system part of the water circuit returns to the headbox. With the optimizing of the water circuit, machine stops will be reduced, operational speed will be increased from 1,200 to 1,500 m/min; and output will increase to 80 tpd. Also includes: an under-machine (UTM) pulper, vacuum boxes, pope reel drum and deflaker; AC plant, motor control (incorporated within the existing DCS control system).
Modern Karton Corlu Mill Northwest Turkey	Metso Paper	An €80 million order for a new 400,000 tpy containerboard machine which is slated for start-up in March 2007. PM4 will produce recycled fluting, unbleached testliner and white-top testliner of 90 g/m ² and above. It is part of a \$365 million investment in the mill. Later this year, PM3 will be rebuilt to boost its recycled fluting capacity by 50,000 tonnes to 250,000 tpy. The mill has another two machines: PM1 which produces 38,000 tpy of recycled fluting and the 62,000 tpy PM2 which produces testliner. The Eren Group, which is big in the energy, cement, retail and textile sectors, has a 93% stakeholding in Modern Karton.
Norske Skog Golbey Mill France	ÅF, Sweden	ÅF has been chosen as main consultant for the installation of a 12 MW back pressure turbine and the modification of the bio fuel boiler. Also includes modifications of the bark storage and the handling system for bio sludge. ÅF will also install 3 new auxiliary gas fired boilers. Completion by Nov 2006.
Orsa Celulose Papel e Embalagens Nova Campina Mill Sao Pãolo State Brazil	Compania Federal de Fundicao and Voith Paper	The rebuild of PM 1 to increase linerboard capacity by 35,000 tonnes to 70,000 tpy. The machine produces unbleached and white-top kraftliner. The 107,500 tpy PM 2 produces kraftliner. The mill feeds a sheet and box plant in Rio Verde, Goias State, and the Suzano factory in Sao Pãolo State.
Packages Pakistan Kasur Greenfield Mill Pakistan	Voith Paper	A new 110,000 tpy PM for the greenfield mill which is being built near the border with India. Scheduled to come on stream in June 2006, it will produce testliner, fluting and white-lined chipboard. It will be fed by i) a rebuilt, 130 tpd straw pulp line which is being relocated from the Lahore mill and ii) a 225 tpd OCC line.
	Voith Paper	A second-hand PM is also being installed - the 120,000 tpy SC machine from Stora Enso Langerbrugge Mill in Belgium. The PM will be upgraded by Voith to produce fine paper and is due to come on stream in 1Q 2007. It will be fed by i) a second hand, 220 tpd deinked pulp line bought from Papierfabrik Zwingen of Switzerland and ii) a new 350 tpd straw pulp line. Furnish will also include some market pulp.
Ripasa Limeira, Celulose e Papel Mill São Paolo State Brazil	Metso Paper	The upgrade of the new pulp drying line to increase capacity from the original 760 tpd to 1,000 tpd of bleached eucalyptus pulp. The line, which is due to start up in Nov 2005, has a 3900mm wide drying machine and a speed of 220 mpm. Metso will also supply a Roboapplier sheet wrapper and a Robotyer tying machine. Ripasa is among Brazil's biggest pulp, paper and board producers and is jointly owned by VCP and Suzano.
SCA Östrand Pulpp Mill, Timrå Sweden	Alstom via Andritz Oy	To reduce particle emissions, two concrete-bottom electrostatic precipitators (ESPs) with flue gas ducting. Includes: engineering, insulation, electrification, erection and commissioning of the ESPs. The erection of the ESPs will begin in Jan 2006 for start-up in Oct. The guaranteed emission level for the precipitators is 30mg/N.
	Andritz	A new soda recovery boiler, which will enable an increase in pulp production to 420,000 tpy
Shklov Newsprint Mill Mogilev Region Belarus	Petrozavodskmash	Bellesbumprom has place an order for the equipment for a 40,000 tpy greenfield newsprint mill which is being bankrolled by the Belarusian government. The \$100 million mill is due to come on stream in 2007. The original plan was for a 200,000 tpy mill but the \$400 million project failed to attract foreign investors. The mill will supply the domestic market. Both Voith Paper and Petrozavodskmash submitted tenders for the equipment.
Siam Cellulose Thailand	Metso Paper	The upgrade of the oxygen delignification process into a two-stage OxyTrac process. Start-up this December. The project will enable the mill to increase capacity from 260 ad tpd to 343 ad tpd. The aim is to increase delignification prior to the final bleaching stage. In addition, OxyTrac reduces i) the need for chlorine based bleaching chemicals and ii) the effluent load. The order also covers a re-arrangement of the existing washing system, and an additional TwinRoll wash press for post oxygen washing and auxiliary equipment.

Mill	Supplier	Equipment review
Sicema-Saga Canossa Mill Northern Italy	Nielsen, Norway	A new flash dryer which will enable the mill to increase output of aspen chemi-mechanical market pulp from 75,000 tpy to 100,000 tpy. The project has been delayed by planning problems and the Italian gas supplier SNAM is waiting for the go ahead from the local authorities. There are also plans to extend Canossa's wastewater treatment plant later this year and to build a new power plant in 2006.
Stora Enso Kvarnsveden Mill Sweden	VIB Systems, Germany via Metso Paper	A spray dampening and moisture profiling system for the new PM12, a 10.79 m machine which will produce SC grades. The technology includes the VIB AirTechplus 6 and GlossTech systems which are part of a new concept for SCA paper. The 650 nozzle PM system will increase the paper moisture level and control the moisture profile prior to the reel. The Calender systems - 872 nozzles per calendar - will moisturize while the paper is being calendered. Also on the calenders, the 4 VIB GlossTech paper gloss control systems, which utilize steam, will each have 72 CD control zones. This is the most extensive moisturizing and profiling system in the world and it is the first time that SCA papers have been moisturized on both the PM and the calenders - from both sides with water and steam. The new concept was developed during a sustained research effort - at Metso's Calendering Centre in Järvenpää; at the CTC Technology Centre in Raisio, Finland, and at the VIB Trial Centre in Maintal, Germany.
Stora Enso Publication Paper Kemijärvi Pulp Northern Finland	Alstom	To reduce particle emissions, a concrete-bottom electrostatic precipitator (ESP) will replace two smaller precipitators. The flue gas fan, ducting and the dust transportation system will also be replaced. Installation in September 2005. Kemijärvi produces 240,000 tpy of chemical softwood pulp for the production of high grade printing and writing paper.
Tela-Kimberly Balsthal Mill Switzerland	PM Poland PMP Group	The rebuild of the press section or PM 5, a 2.16 m tissue machine which has an operating speed of 900 mpm. The mill produces tissue papers for deep coloured napkins and technical papers. The aim is to renovate the structure of press section structure and to improve functionality by changing nip loads. Deliver this month for erection and start-up in August 2005.
UPM Kymmene Rauma Mill Rauman Voima Oy Finland	Alstom	A fabric filter plant to clean the flue gases at a new biofuel-fired power plant and reduce particle emissions. The new plant, which is being built at the mill by Rauman Voima, will start-up next year. Fabric filters reduce dust emission and in this case the guaranteed emission level is only 5 mg/Nm. Erection will start in April 2006 and the filter will start-up in October. The power plant will generate electricity, process steam and district heating for UPM Rauma and Rauman Energia. The power plant's main fuels will be bark and felling residue such as branches, crowns and stumps. Peat, bio-sludge and small amounts of refuse-derived fuel will be used as additional fuels.
UPM-Kymmene Docelles Mill France	ÅF Sweden	ÅF is the main consultant for a major rebuild of PM 1 which produces office paper. Includes a new press section, the rebuild of the drying section, a new reel and the extension of the broke system. The aim is to improve quality and develop new grades and the project is expected to be completed by August 2006. ÅF will provide project management, detailed engineering for all disciplines, construction management and start-up services.
VPK Packaging Rigid Paper Selby Mill UK	Clearwater Paper Technology	Five high-pressure drying cylinders and the upgrade of the press section of PM1 - part of a £600k rebuild which increased capacity by 10,000 tonnes to 60,000 tpy and improved quality. PM 1 produces testliner 2 and 3 of of 90-190 g/m ² .
	SSD Drives	A new digitally controlled sectional drive for PM 1. Selby has another machine, the 20,000 tpy PM 3 which produces testliner 3 and recycled fluting. Last year a new headbox was installed and the wet end was rebuilt.
Werra Papier Wehrhausen Germany	Kadant Lamort	Screening equipment for the new Tissue Machine. Includes a SPE10 centripetal screen for the approach flow, along with ADS, CH, Diabolo (cleaning & screening) for stock preparation. The stock prep equipment will be installed in parallel with existing machines. Wehrhausen is at the centre of Germany's Tissue Valley.
Zhejiang Ji'an Paper Packet Haiyan Greenfield Mill Zhejiang Province China	Shanghai Chenming Paper Machinery	A new 300,000 tpy containerboard machine for the greenfield mill in Haiyan county. Start-up is slated for 2006. The machine builder is a subsidiary of Shandong Chenming Paper Holdings.
	Kadant Black Clawson	A \$4 million order for stock-prep equipment for the greenfield mill. The 900 tpd stock prep line will be delivered in August. Includes advanced recycling technologies for i) the recovery of usable fibre from waste corrugated containers and ii) the preparation the recovered fibre for the new linerboard machine.

Coming Events

DEFRA sponsors legislation zone at RWM05

The Recycling and Waste Management Exhibition which will be held at the NEC, Birmingham from 13-15 September will feature a Legislation Zone, sponsored by the Department for Environment Food and Rural Affairs (DEFRA).

Located at Stand 324, it will provide visitors with specific answers to legislative issues, such as the Landfill Trading Allowance Scheme, in a relaxed and informal environment.

There will be short presentations on specific areas of legislation throughout the three-day exhibition. These will include:

- New Technologies
- Local Authority Support

"As the Government continues with its drive to reduce the UK's reliance on landfill by moving to more sustainable waste management practices, it is vital that everyone is clear on what the changes mean to them and what they need to do to comply with new and emerging legislation", says John Burns, Programme Director of DEFRA's Waste Implementation Programme.

RWM is organised by Emap MacLaren and supported by Materials Recycling Week.
www.rwmexhibition.com

Ink on Paper: substrate, ink and process

The three key variables in printing - the substrate, the ink, and the process - will be covered in Pira's *Ink on Paper* conference, which will be held from 28 to 29 September 2005 at the Astor Crowne Plaza Hotel in New Orleans, Louisiana, USA.

Leading business and academic experts from these industries will discuss the latest developments and there will be a focus on practical issues:

- how to improve efficiency and quality.
- how to enhance paper runnability on press - to cut waste and reduce web breaks and downtime.
- how to cure print problems such as linting, mottling and hickies.

The requirements for paper will be influenced by emerging technologies -

- by the conductive and intelligent inks which could radically change the entire printing process and the consumable requirements for it
- by the move to ink jet technology, including industrial and specialist inkjet
- by the use of nanotechnology to enhance printability via papermaking, inks and presses.

Speakers will describe the papermakers' response - in presentations on: significant R&D projects in dedicated areas such as: sizing, new coating techniques, the impact of fibre selection and the use of fillers to provide better paper properties.

On the second day of the conference, the focus will be on *Innovations in papermaking to improve printability*. A speaker from Pira International will cover the trends and the enabling technologies:

- lower basis weights
- increased opacity and bulk
- brightness and whiteness
- improved strength
- surface chemistry requirements.

Printability: the driving forces in the marketplace

In the opening session the keynote speaker will cover the growth forecasts for printed

materials and the market trends. There will also be a presentation on synthetic paper by Emin Kadi of Clear Magazine of the US, a company which is adopting synthetic paper. He will discuss printability, quality and future markets and applications.

Abitibi Consolidated will provide a paper on *Enhancing runnability on press: the runnability benchmarking programme*. David Keenan, VP Technical Newsprint, will cover: Key areas of impact on press runnability; 60 pressroom comparisons and Mill and pressroom start ups. He will also present a paper *Printability and paper quality measurement*. This presentation will focus on:

- Paper and the effects on printing: - Shade and PPS and the quantification of printing pressure.
- Global score cards for improving printability and performance measures
- Week of manufacture, Set position performance, Print unit segmentations and Elapsed time/ Autoline interface and MC opportunities.

Web breaks is the theme of a paper from PAPRICAN. Dr Xingyuan Deng, will present the findings of a compressive analysis of pressroom and mill databases. He will discuss the relationship between paper strength properties and the web break rate and the role of reinforcing kraft in reducing newsprint web breaks.

The findings of a benchmarking study of North American fine paper will be presented by Richard Gratton and Harshad Pande of Domtar and David Smith of Dow Chemical US. In their paper on *Predictive lab measurement of ink mileage* they will discuss the adaption surface chemistry and paper properties to improve efficiency.

Meeting the demands of the new printing technologies

The properties of the paper substrate are being engineered to meet the demand of new and evolving technologies, such as printed RFID and digital printing. The latest developments in printed electronic field will be presented by Dr Thomas W. Joyce, of West-

Cham Paper to hold flexible Packaging Symposium

The Cham Paper Group is holding its 7th International Symposium on Flexible Packaging at The Bellevue Palace Hotel in Bern, the Swiss Capital, from 8 to 9 September 2005. The theme is Paper Naturally Intelligent.

The Symposium, which was launched in 1986, attracts some 200-250 delegates from all over the world. It provides a balanced programme of first class speakers and networking opportunities for converters, food and non-food fillers and packers and retail chains over 2.5 days.

The conference and technical sessions will provide a glimpse into the future through presentations on:

- Impacts of RFID and Nanotechnology on the packaging of tomorrow
- Market trends and statistics update from the sector in Eastern Europe
- The corporate world of Ahold,
- Metallic ink technology

The Cham Paper Group comprises:

Cham-Tenero Paper Mills,
Switzerland
Cartiera di Carmignano,
Italy
Hunsfos Fabrikker ASA,
Norway

The Group has 5 paper mills with a total capacity of 260,000 tpy. They produce speciality papers for flexible packaging, pressure sensitive materials, labels, various technical-industrial applications, inkjet and transfer printing as well as special papers for the tobacco industry.
www.rwmexhibition.com

ern Michigan State University in a presentation on Conductive and intelligent inks. He will cover:

- The influence of specific paper characteristics: smoothness, relative humidity and lignin on signal strength.
- The use of polyhydroxyalkanoate (PHAs) in coating formulations.
- Investigating ink substrate interactions: wettability determined by contact angle and ink adhesion.

The paper requirements of inkjet, digital and indigo printing will be covered by speakers from Gladfelter, Kodak Versamark, PAPRICAN and Hewlett Packard.

In all this development work the chemical companies are playing a fundamental role. Speakers from these companies will describe the latest developments.

OMYA NORTH AMERICA: George Saun-der will speak on Applications for

structured calcium carbonates and will cover: LWC and LWC roto grades; improved offset and enhanced gloss, opacity and sheet smoothness.

GEORGIA-PACIFIC RESINS: David Townsend and Dr James Johnston, will cover The effect of stabilizer type on alkenyl succinic anhydride (ASA) particle size, hydrolysis, and sizing efficiency

BASF: Dr. Ron Hostetler will present a paper on how latex dispersion size, polymer physics & chemistry determine printability and print quality.

SPECIALITY MINERALS: Dr Richard Ain will discuss US Trends in highly filled neutral uncoated mechanical papers. He will cover the History of neutral uncoated mechanical grades to date and the Printer challenges for running neutral papers.

Contact Ciaran Little, Conference Manager on: Tel: 01372 802039; ciaranl@pira.co.uk

ABB to hold safety conference in September

A major international safety conference, sponsored by ABB, will examine the issues faced by industry in maintaining the safety performance of their processes while meeting the unremitting pressures to reduce costs, maximise the use of the asset base and plant availability and to reduce spurious alarms.

Entitled, *Safety, Standards & Regulations - an industry perspective*, the event will be held on 27th and 28th September 2005 in Manchester.

The event will bring together representatives from paper mills, international end user organisations and asset owners to discuss what more needs to be done to keep abreast of the standards, technology and regulatory regimes.

The conference will address:

- Safety technologies – trends, model solutions, risks in implementing new

technologies, smart versus traditional, certified or non certified products

- Compliance to standards and regulations – issues, pressures, cost versus benefit, practical experiences of regulatory inspections/audits
- Globalisation : safety supply chains and specifications, building trust
- Case studies related to safety-related projects
- Safety life cycle implementations – lessons learnt
- Practical experiences of implementing IEC 61508/IEC 61511

The organisers have secured a wide spectrum of speakers from the international process industry, international safety regulators and end users.

For further information, contact Sally Stapleton, Tel: 01480 488223 or email: sally.stapleton@gb.abb.com

Air quality monitoring

MCERTS 2005 will focus on air quality monitoring and the issues relating to air quality in stack emissions, the ambient environment and the workplace. It will be held at the Bretby Conference Centre near Burton upon Trent from 12 to 13 October 2005.

Organised by: the Environment Agency, the Source Testing Association, and Environmental Technology (Publications), the event comprises a conference, workshop and exhibition.

It will provide industry with guidance on the regulations which have resulted from a range of EU Directives. For example, the BS

EN 14181 Standard which has far reaching consequences for mills, equipment manufacturers and test houses. It relates to stationary source emissions, is one of the most demanding standards to be developed by CEN.

The Conference and Workshops will deal with topical subjects such as Dioxin Monitoring, Discontinuous Monitoring, Particulate Monitor calibration, Manual Stack Monitoring, and the certification of monitoring staff. www.mcerts.uk.com; info@mcerts.uk.com
Tel: 01727 858840

ADVERTISERS

ALBANY INTERNATIONAL LTD	Cover ii
BENDER MACHINE SERVICES	49
ERHARDT + LEIMER LTD	35
JARSHIRE LTD	9
KIMBERLY-CLARK (<i>Recruitment</i>)	55
M-REAL UK	Cover iii
PRODUCTS & SERVICES DIRECTORY	
43-46	

index

Recruitment



To advertise in this section
ring
David Cole
Advertisement Manager
on **0161 764 5858**

Please note that recruitment advertising and the Products and Services Directory can also be viewed on the PITA Website – **www.pita.co.uk**



Soft Products. Hard Challenge.

TECHNICAL DEVELOPMENT LEADER and PROCESS ENGINEER

c.£28k-£38k + relocation assistance ● *Barrow-in-Furness, Cumbria*

Kimberly-Clark is a global health and hygiene company with over \$14 billion in sales. Our well-known brands are KLEENEX®, ANDREX®, KOTEX®, POISE® and HUGGIES®. Our products are used by 1 in 4 people in more than 150 countries and we employ 64,000 people worldwide.

At our Barrow-in-Furness manufacturing site on the edge of the Lake District National Park, we are seeking high potential individuals to join a team responsible for the world class supply chain of the Andrex, Kleenex and WypAll branded tissue products.

The ideal candidates will be able to make an immediate contribution to the business, with the capacity to develop the skills to drive the business forward. You will be joining the team responsible for ensuring we continue to meet and beat our customers and consumers needs.

You will be of graduate calibre, with at least 3-5 years experience in a manufacturing environment, preferably within the paper industry or an fmcg business and have demonstrated a proven track record of success in your chosen field.

We are looking for a goal orientated 'hands on approach' that will ensure you are able to perform in our results driven high technology process environment.

In return we offer a dynamic and challenging working culture, the opportunity to work with a high calibre growing team as part of a global business. The benefits include healthcare, pension, 25 days holiday and share purchase plan.

Please forward your CV and current salary to the HR Dept at Barrow via recruitment.barrow@kcc.com



Kimberly-Clark is an equal opportunities employer.



Kimberly-Clark Europe

BIG on care



Calendar of World Events

Date	Event	Venue	Organiser
JULY 2005			
11-12	Food contact legislation around the globe	Copthorne Tara Hotel Kensington, London	Pira International Tel: 01372 802041; www.piranet.com
14-15	Slitting and Winding	Melbourne, Australia	Appita Tel: +61 3 9347 2377 info@appita.com.au www.appita.com.au
SEPT 2005			
11-16	The 13th Fundamental Research Symposium	Robinson College, Cambridge UK	email: frc@pita.co.uk www.pffrs.org.uk
20-22	China Paper 2005	China International Exhibition	E.J. Krause & Associates Tel: +49 301 493 5500; Fax: +49 301 493 5705 email: deutch@ejkrause.com www.chinapaperexpo.com
20-22	22nd PTS Coating Symposium	Kongresshaus, Baden-Baden, Germany	PTS, Germany Tel: +49 89 1214 623; Fax: +49 89 1214 636; pta@ptspaper.de www.streichereisymposium.de
21-23	Pulp and Paper Industry of Southeast Europe	ARO-Palace Hotel, Brasov Romania	BPP: Contact Snezana Miljanovic Tel: +381 22 223 924; email: k.ing@eunet.yu www.paperbalkan.com
26-28	PPI Transport Symposium 16	Bouwcentrum Antwerp, Belgium	PPI/Paperloop, Brussels Tel: +32 2 536 0752; Fax: +32 2 537 5626; agehot@paperloop.com
27-29	Ink on Paper Conference	New Orleans, Louisiana	Pira International Tel: 01372 802039 ciaranl@pira.co.uk www.piranet.com
28-30	XV International Papermaking Conference Efficiency of Papermaking and Converting Processes	Wroclaw, Poland	Association of Polish Papermakers Tel: +4842 630 01 17; Fax: +4842 632 43 65 email: info@spp.pl
OCT 2005			
3-5	European Paper Recycling Conference	Brussels Hilton Belgium	The Recycling Today Media Group Jeff Fenner Tel: +1 216 961 4130 ext 215; email: jfenner@giemedia.com
16-18	RISI North American Forest Products Conference	Omni San Diego Hotel San Diego, California	RISI/Paperloop Tel: +1 781 734 8936 thompson@resourceinfo.com www.resourceinfo.com/events_risi.html
23-26	Web Handling Applications Seminar	Wes Watkins Centre Stillwater, Oklahoma	Oklahoma State University Tel: +1 405 744 9217 rogerlm@okstate.edu www.engext.okstate.edu
24-25	BIR Convention	Marriott Milan, Italy	Bureau of International Recycling Tel: +32 2 627 5770 bir@bir.org www.bir.org
NOV 2005			
8-9	PTS Water and Environment Symposium	PTS Munich, Germany	PTS Munich Tel: +49 89 1214 623 pta@ptspaper.de www.ptspaper.de
10	PTS Energy Management Symposium	PTS Munich, Germany	PTS Munich Tel: +49 89 1214 623 pta@ptspaper.de www.ptspaper.de
17	The 5th Biennial Johan Gullichsen Colloquium – Raw materials and processes	Hilton Helsinki Kalastajatorppa Helsinki	Finnish Paper Engineers Association: Tel: +358 9 132 6688; Fax: +358 9 630 365; email: irmeli.hannula@papereng.fi www.papereng.fi
21-22	PTS Tissue Symposium	PTS Munich, Germany	PTS Munich Tel: +49 89 1214 623 pta@ptspaper.de www.ptspaper.de
22-24	International Converting Exhibition	MOC Exhibition Centre Munich, Germany	Nimble Shows & Media Tel: +49 8033 91231; Fax: +49 8033 91288 email: info@ice-x.com www.ice-x.com
22-25	PAPEXPO 2005	CED Sokolniki Moscow Russia	MVK/Russian Association of O+E of Pulp and Paper Industry Tel: +7416 925 3666 eshatrova@mvkexpo.com www.papexpo.ru/defaulteng.stm
DEC 2005			
	CEPI Annual Meeting & European Paper Week 2005	Brussels, Belgium	CEPI Brussels Tel: +32 2 627 4911 www.cepi.org
7-9	FSC General Assembly	Manaus, Brazil	Forest Stewardship Council Tel: +49 228 367 66 0 fsc@fsc.org www.fscus.org
JAN 2006			
25-29	Paperworld Frankfurt	Messe Frankfurt Frankfurt, Germany	Messe Frankfurt Tel: +49 69 75 75 68 21 paperworld@messefrankfurt.com www.paperworld.messefrankfurt.com
MARCH 2006			
13-15	PITA Papermaking Conference 2006	The Cedar Court Hotel, Bradford	PITA, John Clewley Tel: 0161 764 5858; Fax: 0161 764 5353

REALISE YOUR AMBITION

Guarantee your publication looks as amazing on paper
as it did in your head.



If you want to stand out from the crowd, you need a paper that does your aspirations justice. To meet your needs, the Galerie range of graphic papers have been specially developed to bring even the most challenging images and editorial to life. So no matter how high you're aiming, M-real's Galerie papers can help you achieve the impact your ambition demands.

Galerie Papers

www.m-real.com

m·real

M-real UK Ltd: Tel. 01628 411611