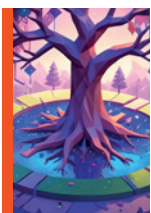


Trends & Innovation news dedicated to abrasive producers [by Ahlstrom]

Unlock infinite potential with the Infinity machine



TREND

Innovation: when abrasives are inspired from hardware



EXPERTISE

The technical challenges around grit sizes



SPECIAL FEATURE

Papers made with recycled fibers



INNOVATION : when abrasives are inspired from hardware

The Eisenwarenmesse trade fair in Cologne, Germany beginning of March was the opportunity for the Abrasive team to meet along with its customers. This event attracts over 3,000 international companies specialized in DIY. With professionals from 51 countries in attendance, the fair covers fastening systems, tools and construction materials. The A Vision is now proposing to transpose three of the most promising trends to the abrasive sector!



TREND 1

Focus on sustainability!



» Think about it!

Industry has to find solutions to slow climate change down. Whether that means increasing the share of renewable energies used in its processes, integrating renewable or recycled materials in the products and their packaging or improving the circularity at the end-of-life, there are areas where change is already possible.

Do it



Ahlstrom offers abrasive backings made of renewable materials. Unlike PE films and polyester cloths, made from fossil resources which deplete as they are extracted, our cellulose fibers come from natural, renewable, well-managed sources.

All our pulps are duly controlled and come from sustainably managed forests. By being part of the FSC® (Forest Stewardship Council®) chain of custody, we are committed to tracking all inputs, and our **FSC Mix and Controlled Wood labels** certify that our operating conditions are respectful of the environment and that they meet a demanding set of specifications.

In addition, our expert interview page 6 will tell you why it is can also be beneficial to integrate recycled fibers.

TREND 2

Accelerate without neglecting quality!



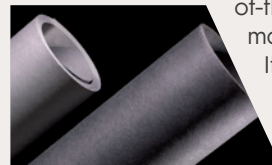
» Think about it!

Improved working ergonomics and productivity are major themes in the different innovations. Generally the solution involves automation when it comes to changing parts. Moreover the number of changes can be reduced by better quality, longer-lasting consumables.

Do it



Keeping change-over of abrasives to a minimum in order to save time means long-lasting backings, less likely to delaminate and more resistant to tearing. Choosing for top-of-the-range backings makes a real difference. It increases sanding life and therefore proves your life cycle analysis.



In addition, papers like **STRONG** or our **TEX-STYLE™ composite** offer an answer to automated disc changing and better resistance to metal blades.

TREND 3

Facilitate the organization of your products!



► Think about it!

Having a multitude of products is fine... **Having a way to efficiently store them, so that it is easier to find them is even better!** It's easy to see the interest of having a case, with different compartments suitable to each type of parts. Tool holders can also take the form of a belt or a backpack for a quick access to accessories. **Tidiness drives efficiency.**

Do it



Think about your customers! Tailoring your backing will help your customers to find their ways in your vast abrasive offer:

- Our "World of Colours" Collection is available to customize your backings. Use it not only to stand out but also to color code your products!
- With "The Be Solution", you can use our **rotogravure printing capabilities** to mark your abrasive with the material according to the targeted applications (wood, metal, plaster sanding, etc...). Adding a translucent resin enables the end user to recognize the application and the right product on the shelf.
- BeSecure™, more than just a label! An anti-counterfeiting solution: **integrate daylight or UV-visible security fibers** to ensure your brand remains unique and distinctive.



Interesting in exploring one of these trends? Let's talk about it!



INTERVIEW WITH GÉRALD DURSKI Head of Abrasive BU

The A Vision gives the floor to Gérald Durski, appointed Head of Abrasive at Ahlstrom in January 2024. Engineer, Gérald Durski has held key marketing and strategic management positions in the chemical and plastics industries before joining Ahlstrom. He thrives on challenges and has been extensively involved in circular economy projects such as Move4Earth, reflecting his deep-seated commitment to sustainability.



His vision is based on "Innovation" and "Customer Orientation" that reflect his desire to create and bring value.

His favorite motivational quote, from Antoine de Saint-Exupéry, embodies his proactive, agile approach to everything he does: "As for the future, your task is not to foresee it, but to enable it." Indeed, in an unpredictable world, agility and action are essential qualities for shaping the future. **And that is what you are going to discover now! After this quick introduction, let us watch a video with these 3 questions!**

His favorite motivational quote, from Antoine de Saint-Exupéry, embodies his proactive, agile approach to everything he does: "As for the future, your task is not to foresee it, but to enable it." Indeed, in an unpredictable world, agility and action are essential qualities for shaping the future. **And that is what you are going to discover now! After this quick introduction, let us watch a video with these 3 questions!**



- Could you tell us more about the main ideas that drive your vision?
- Could you tell us more about the main ideas that drive your vision?
- Machine 8 has become the "Infinity" machine, providing countless opportunities for customers. Is this just the beginning?



THE TECHNICAL CHALLENGES AROUND grit sizes

The fine grit market is constantly developing and growing, for multiple reasons. Design trends that highlight smooth even surfaces for esthetic reasons, the boom in products with touchscreens like smartphones, and even that in electric vehicles whose silence is inciting manufacturers to lower the noise level of every component, which generally implies demanding polishing standards. We now talk of fine grits and micro-grits (under 60 microns), and what we are seeing is that overall the grits used are 30% finer than a few years ago for the same products.

The main challenge is to obtain a perfect part and not cause scratching on pieces that are ever more expensive. A substrate that is uneven, even if it only involves a few microns, can lead, by a cascade effect, to an uneven distribution of the resin and the grit. This can compromise the effectiveness of the mechanical action, create an imperfect visual effect on the abrasive and even damage the products being sanded. Having a paper backing with an extremely smooth surface is therefore crucial for these increasingly fine grit abrasives. Finishing abrasives are becoming ultra-technical and the entire value chain is having to push back the boundaries imposed by the quest for the ultra-smooth to meet new tolerances and in some cases solve emerging issues such as blotchiness.

Thanks to the formulation and the production process on the Infinity machine and particularly Ultra Smooth Skills, it is now possible to offer you backings with extremely smooth surfaces, which are perfectly suited to this market, with an infinitely more interesting topography!

MARKET INSIGHT



IMERYS

► RAPHAËL GASSER,

Marketing Manager-Abrasives at Imerys, a leading and innovative expert in grains for abrasives, gives us his take:

"One notable trend in abrasive grit technology is the gradual shift towards finer sizes in almost every single application, including in macro sizes. For example, whereas a P36 grit (between 500 and 600 microns) may have been adequate in previous contexts, contemporary applications require the precision and refinement offered by finer grits - in this case P40 (between 355 and 425 microns), a discernible refinement of approximately 30%. The trend toward finer grit sizes is consistent across all the grit sizes, from micro to macro grits, reflecting the evolving demands of industry standards and customer requirements."

TO ACHIEVE FINER AND FINER, WE NEED TO BE MORE AND MORE PRECISE!

1 Bekk smoothness test

Whereas the measurement of the surface of certain substrates will refer to Bendsten roughness, Bekk smoothness is the standard measurement for abrasive papers as it is more in line with the precision expected. It is definitely the easiest way to measure the smoothness surface of a paper. The ISO 5627 and TAPPI T 479 standards define it as the time necessary for a determined volume of air (10 ml) to flow between a paper surface and a polished glass surface under a contrary pressure. The higher the figure, the more time it will take to flow between the paper and the anvil, the smoother is the paper.

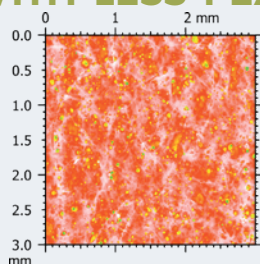
2 Topography and roughness parameters

Paper roughness is measured by optical reproduction of the relief in the paper's surface revealing microscopic variations and providing details on the degree of irregularity (peaks and troughs).

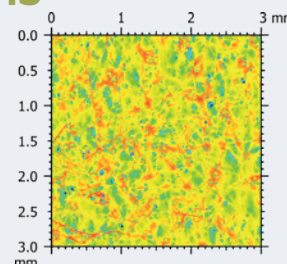
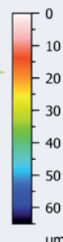
The asymmetry value calculated from relief reveals the appearance of the surface and highlights a topography with plateaus and troughs or peaks and valleys. This analysis takes more time than Bekk smoothness testing, but provides more insight into the detail of the irregularities.



THE PERFORMANCE OF OUR NEW ULTRA SMOOTH FEATURE WITH LESS PEAKS AND TROUGHS



P1000 = 18 MICRONS



Ultra Smooth WITH Infinity

Here, it can clearly be seen that there is little variation in height over most of the surface (red/white) and that there are almost no peaks and troughs. The coating is more homogeneous.

VS paper BEFORE Infinity

The amplitude between the peaks and troughs is marked (red/green) with the full range of heights distributed over the entire surface.

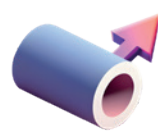


THE TECHNICAL FEATS OF INFINITY

Since the PM28 machine was converted into an Infinity machine, we have had even more technical levers we can pull to adjust the paper to the new technical and marketing requirements of abrasive papers, for both heavy abrasive packing papers and lightweight ones like the latex papers.



DEVELOPMENTS THAT RELY ON NEW FORMULATIONS that improve surfaces textures and allow the adjustment of flexibility/rigidity to suit different needs and applications



OPTIMIZATION OF THE PROCESS of sheet formation during reeling to guarantee better look-through and dimensional stability

ULTRASMMOOTH

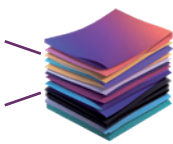


TOOLS TO SHAPE
 • the surface and
 • smoothing by coating
 • or calendering



TWO-COLORED DESIGNS
 • produced 100% in line, for better service optimization and perfectly controlled and reproducible coating

TRETEMENT RECTO
 TRETEMENT VERSO



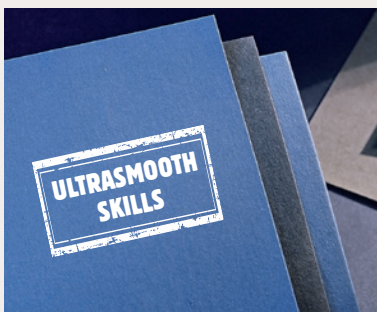
A VARIETY OF SURFACE TREATMENTS that can be applied on the recto or verso or both sides of your backing, with variable thicknesses

- the recto: barrier coating, colored or not, antistatic coating
- the verso: FG<AS<ZS anti-slip coatings, colored or not, barrier/water-repellent coatings

An infinitely better surface finish

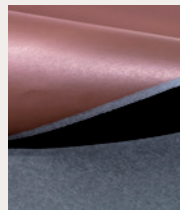
Thanks to the performances of the Infinity machine, Ahlstrom has developed a unique body of know-how, called "Ultra Smooth Skills". We are able to offer you improved surfaces made by Infinity, for both heavy and latex backing papers.

Improved surface can be obtained by reducing the calendering, which gives thicker, more open papers with better bulk. Thus, the **Wet paper with an Ultra Smooth (US) finish**, will develop better compressibility properties since it is thicker, and will remain open on the back surface, allowing for better reconditioning. This optimization also offers new possibilities for solving the issue of marbling.



> Would you like to know how your products could benefit from Ultra Smooth Skills? Just ask your usual contact!

Focus on 2 solutions for FINE GRITS

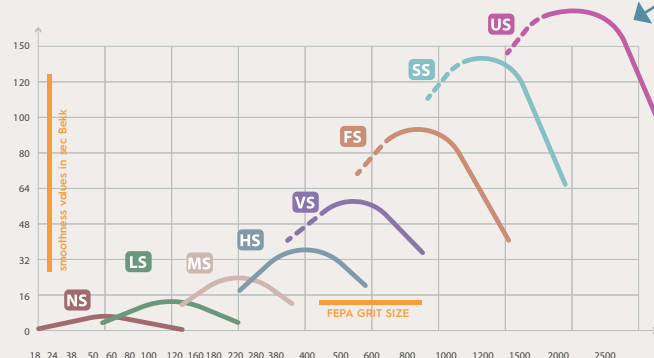


Infinity allows you to get a new backing generation, enabling you to apply fine grits and even micro-grits, that is to say P2000 with 8-9 µm. Let's look at these 2 solutions that could make the difference in the future:

> "Any Color coatings". It is now possible to have two colors on any papers, whether heavy or lightweight. Whether this involves applying an anthracite coating to create opacity for fine grits or to reproduce a coating that matches your resin colour to create new pairings such as ash or naturel (printing side) / brick (coating side) or yellow (printing side) / blue (coating side)... You can easily add a colored coating of your choice to your backings.

> A revolution in smoothness thanks to the **US, Ultra Smooth finish**. The level of smoothness reaches 150 Bekk seconds, whereas before Infinity we were limited to 80 seconds: a surface with few variations in height, better suited to the demands of ultra-fine grits.

PAPER SMOOTHNESS VS. FEPA GRIT SIZES USE



PAPERS MADE WITH RECYCLED FIBERS for more sustainable abrasives

Ahlstrom is improving its processes every day, to **reduce the impact of the abrasives sector on the environment** and therefore meet users' expectations. Valérie CHAUVE, Head of Fibers Expertise and Pilot Capabilities, has worked towards this target over her 24 years with the research center, 10 of which she has specifically spent working on fibers. She explains how, **thanks to the use of recycled fibers, backings can contribute to the circular economy for customers looking for more virtuous solutions.**



The A Vision ▶ Valérie, can you explain what is meant by «recycled fiber»?

Valérie C. ▶ What we are talking is recycled **cellulose fiber**, which we find in products like papers and cardboards, which is reused to give it a **second life**. 80% of the fibers recovered come from the paper industry (scraps, book trimmings, etc.) and from the trade sector (unsold stock, etc.). These are what we call pre-consumer fibers. The remaining 20% are post-consumer fibers which come from individuals sorting their waste (packaging, newspapers, etc.).

There is a lot of potential for recycling fiber, as, for example, the French market alone represents 2.7 million metric tonnes of packaging and inked papers, which are recycled at rates of between 62 and 72%. **In addition, the latest studies prove that the fiber in an uncoated paper can undergo up to 22 successive recycling cycles**. The recyclability of a paper is acknowledged through CEPI or 4evergreen recyclability tests as well as disintegration tests.

“ *Recycling renewable fiber is totally in line with the goal of achieving a circular economy* ”

T.A.V ▶ How to ensure that integrating recycled fibers in your pulp still allows you to optimize backing quality?

Valérie C. ▶ Our concern remains to offer the best abrasive backings and guarantee optimum quality of the end product. This means that the pulp used to produce our first prototypes for abrasives is not made exclusively from recycled fibers: a proportion of virgin fibers is incorporated to ensure the abrasive papers continue to meet their high technical requirements and quality consistency.. **Furthermore, for the recycled part, we rely on suppliers of recycled paper pulp, which are known for their reliability, as this allows us to study the morphology of the fibers in advance** (thickness, strength, etc.) as well as the pulp they will produce (e.g. for whiteness). **The formulation chosen will produce a product with compromises suited to the target application, but which also contributes to circularity.**

*Source: University of Graz: <https://www.procarton.com/wp-content/uploads/2022/01/25-Loops-Study-English-v3.pdf>

T.A.V ▶ Why has the use of recycled fibers been a priority?

Valérie C. ▶ More than a technical gain, this approach ties in fully with Ahlstrom's policy of accentuating the sustainable nature of an industrial production process, one which respects the planet's resources. **Recycling renewable fiber is totally in line with the goal of achieving a circular economy.**

However, according to various life cycle analyses, carbon footprint of a paper made with recycled fibers is not necessarily beneficial or even neutral compared to one made with virgin fibers but it can **have a lower impact on other impact categories in an LCA**. The choice of whether or not to use recycled fibers should be made on a **case-by-case basis**, after considering your global sustainable objectives.



**DISCOVER AND
DOWNLOAD OUR
GUIDE BOOK BY
CLICKING HERE**





FOCUS ON CELLULOSE FIBERS

Biobased, renewable and circular?

Biobased Biobased materials are derived from materials of biological/natural origin, excluding materials embedded in geological formations and/or fossilized. In Europe, EN 16640 defines biobased product as "wholly or partly derived from biomass" and provides calculation guidelines.



› Annual plants

- › Flax, cotton, hay, straw, etc
- › Harvested every year > highly renewable



› Trees

- › Renewal cycle is longer

Renewable

Sustainable forestry practices ensure that trees are replanted and forests are managed to maintain a balance.



For increased circularity

All the virgin fibers purchased by Ahlstrom Arches come from sustainably managed forests

- › no destruction of virgin forests
- › no displacement of native or other populations
- › in favor of wood planting and every felled tree is replaced (minimum 1 felled tree = 1 replanted tree)



Each type of fiber has specific mechanical properties. Long fibers provide strength. Short fibers improve surfaces. Recycled fibers, have altered mechanical properties because they have been shortened by the processes they went through. They also impact the runability of the paper machine. That is why it is essential to know the end use of your paper so that we can formulate accordingly. This paper and pulp selection will probably be a combination of different types of fibers.

BE PIONEERS OF MORE sustainable abrasives!

Do you want to make your abrasives more sustainable to help you stand out from the crowd? Recycled fibers can help you to achieve that..



in terms of combining performance and sustainability. We have no doubt that we can also help you to turn your hopes into reality thanks to the shrewd use of these fibers.

Estelle Seibert is here to help, so that our innovations become your reality.

estelle.seibert@ahlstrom.com



By studying your market, together we can turn the performance requirements of the abrasive you need into a suitable composition, formulated with recycled fibers. Although the cost may turn out to be as it impacts the efficiency of the paper machine, you will be demonstrating to your customers that you are motivated by virtuous values. The initial trials conducted with pilot partners have proved to be very promising

QUIZ

Well, here's your chance to prove it... Take our online **QUIZ** to test your knowledge on the subject and identify any points where we can enlighten you further.





FSC® LABELING AND PROMOTION OF RECYCLED CONTENT: Which labels are possible ?

Ahlstrom's Arches factory is part of the FSC® chain of custody and uses as a standard FSC Controlled Wood pulp. It also offers the FSC Mix Credit and can supply papers accordingly if you wish to carry it further to the end-market.

FSC® has put together the table below to clarify what entitles a company to a FSC Mix Credit label, in particular if recycled fibers are used. For instance, in case of a transfer system, a mix of FSC Mix Credit pulp with FSC recycled Credit only allows a FSC Mix Credit label. Whatever the system (transfer, percentage or credit), FSC Recycled label is only possible when 100% recycled material is used.



If the material used is partially recycled, only the FSC Mix Credit label will be possible.



If you want to emphasize your efforts in favor of a circular economy, you can use a mobius loop with the % of recycled fiber contained in the backing next to the FSC Mix Credit label or use the FSC® trademark portal to generate a label with the Moebius loop on the label.

Inputs	FSC® 100%	FSC Mix Credit	FSC Mix x%	FSC Recycled Credit	FSC Recycled x%	Pre-cons. reclaimed wood	Pre-cons. reclaimed paper	Post-cons. reclaimed wood and paper	FSC Controlled wood and controlled materials
FSC® 100%	FSC® 100%						FSC Mix 100%		
FSC Mix Credit	FSC Mix Credit			FSC Mix Credit			FSC Mix Credit		FSC Controlled wood
FSC Mix x%	FSC® Mix x%					No FSC® claims allowed	FSC Mix x%		
FSC Recycled Credit	FSC Mix Credit			FSC Recycled Credit			FSC Recycled Credit		
FSC Recycled x%				FSC Recycled x%			FSC Recycled x%		
Pre-cons. reclaimed wood						No FSC® claims allowed			No FSC® claims allowed
Pre-cons. reclaimed paper	FSC Mix 100%	FSC Mix Credit	FSC Mix x%	FSC Recycled Credit	FSC Recycled x%		FSC Recycled 100%		
Post-cons. reclaimed wood and paper									
FSC Controlled wood and controlled materials	FSC Controlled wood					No FSC® claims allowed			FSC Controlled wood

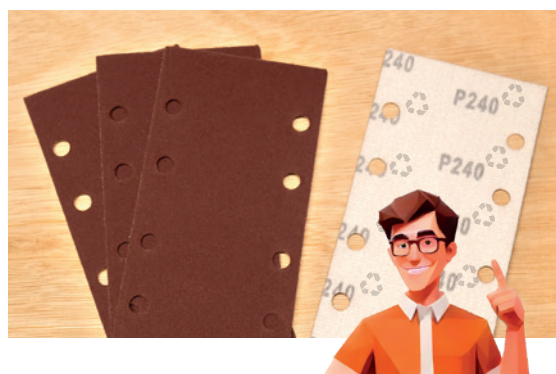
Source: FSC-STD-40-004 V3-1, table D

AND WHY NOT?



Have you thought of printing the mobius loop on your abrasive to reinforce your communication?

We can even investigate together the possibility to print the frontside of the abrasive paper in our print shop so you can maximize the impact on the market, combining it with a translucent resin.



THE VISION

Editorial director : Estelle Seibert
 Editorial committee : Estelle Seibert, Tony Lesire, Francis Poirot, Valérie Chauve, Gérald Durski, Yannick Habert, Marie Dubois, Jean-Baptiste Picot
 Photo credits : Imerys, Istockphoto, Ahlstrom, Yvon Meyer, Igor Paszkiewicz, Freepik, Midjourney.

Design and editorial work, graph : www.2s3v.com

SALES OFFICE AND PAPER MILL AHLSTROM ARCHES SAS
 48, route de Remiremont - F-88380 - Arches - FRANCE
 Tel: +33 3 29 32 60 00
contact.abrasives@ahlstrom.com

A special thanks to Raphaël Gasser for sharing Imerys's vision on grit sizes evolution.

<https://www.ahlstrom.com/products/abrasive-backing>

