





NEWS FROM ALL PRODUCT CLASSES

Ladies and gentlemen, dear business partners!

With Accurate[™] Top Strong, we now have a new, light-weight GC2 virgin fibre quality in our product range that fully lives up to its name: Thanks to the optimised fibre composition, Accurate[™] Top Strong delivers maximum converting efficiency: printing, die-cutting, gluing, and packing at top speed. This is converting performance you won't find anywhere else.



With FOODCARTTM, our complementary response to the fourth draft of the German Mineral Oil Ordinance is now available to the food producing and processing industry: The recycled cartonboard with functional barrier can be considered the "little" brother of our established ultimate barrier cartonboard FOODBOARDTM. By using FOODCARTTM, we limit the MOAH migration (Mineral Oil Aromatic Hydrocarbons) into the food to a maximum of 0.5 mg/kg. This satisfies the requirements of the draft ordinance. FOODBOARDTM goes one step further. Using FOODBOARDTM effectively eliminates MOAH migration (detection limit = 0.15 mg/kg).

After we reported in the last two editions of Unfolded that dm and Frießinger Mühle have switched to FOODBOARD™, we are happy to announce that Coop, a large european retailer, has chosen our carton-board solution for safe food packaging of their store brand of rice! Coop rice is now effectively protected from mineral oils and other defined unintended substances.

There is exciting news in our liner segment as well: The impressive MMK liner sample collection shows fine, detailed clockworks under the motto "Precision & Excellence", emphasising the excellent printing class of our liner qualities. As one of the leading producers of white top coated recycled liner qualities in Europe, we can offer perfect solutions for offset and flexo printing with our comprehensive range of highly efficient liner qualities.

Finally, I want to thank all of you who participated in this year's international customer satisfaction analysis. Because of the high number of responses and your feedback, we can draw a representative picture that will allow us to fulfil your expectations even better in the future.

Franz Rappold Member of the Executive Board 3

EDITORIAL FRANZ RAPPOLD

6



ACCURATE™ TOP STRONG FOR MAXIMUM CONVERTING PERFORMANCE

8

FOODCART™ – SIMPLY COMPLIANT



1 0

FOODBOARD™ NOW PROTECTS FOODS IN SWITZERLAND AS WELL



1 2

PRECISION & EXCELLENCE:
WHITE TOP COATED
RECYCLED LINER BY MM KARTON



1 4

EXPANSION OF THE SUCCESSFUL MULTIMILL CONCEPT



1 6

$\label{eq:mmbin} \mbox{MM BIB-LINER}^{\intercal M} - \\ \mbox{THE LINER FOR BAG-IN-BOX SOLUTIONS}$

1 7

PASSION FOR CARTONBOARD: MM KARTON ART CALENDAR 2018



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MMK CUSTOMER SURVEY 2017 – THANK YOU FOR PARTICIPATING!

ACCURATE™ TOP STRONG FOR MAXIMUM CONVERTING PERFORMANCE

High converting productivity of a cartonboard quality is essential for offering a real competitive edge. In the virgin fibre segment, our new light-weight GC2 quality Accurate™ Top Strong from the Eerbeek mill in the Netherlands is the right choice for maximum converting efficiency with excellent printing properties.

Full steam ahead to 100 % speed

Clean surfaces and edges without dust and fibre particles are among the most important criteria when choosing carton-board. They are essential for achieving top performance in the production process.

Dust and fibre particles severely compromise the conversion process, because they can \dots

- contaminate printing plate or rubber blanket, causing more washing cycles.
- noticeably lower the quality of the printed image and cause contamination of unprinted surfaces.
- require a reduction of the die-cutting speed.
- significantly slow the gluing process.
- cause interruptions on the packaging line, when a glue seam opens.
- lead to more rejects.

Thanks to the optimised fibre composition of Accurate™ Top Strong, this cartonboard sets new converting standards and the printing performance per hour can be substantially increased. Marco Lideo, Product Sales Director Folding Carton Industry Business Unit Sheet-fed at Bobst: "During the die-cutting, folding and gluing process, it is particularly important not to limit machine performance because of dust. This is essential for achieving the highest possible box quality and maximum productivity. With Accurate™ Top Strong, our die-cutters and folder-gluers can reach their full potential."

Strong features

Apart from its excellent converting properties and performance on the packing line, Accurate™ Top Strong compels with exceedingly high stiffness values, which give it excellent packaging stability. Another impressive feature is the outstanding image quality that is possible with Accurate™ Top Strong thanks to optimum visual properties: high degree of brightness (90 % Elrepho), high smoothness PPS (1 μ m), brilliant gloss (> 45 %), and a very attractive white reverse side. The cover of this newsletter is made of Accurate™ Top Strong and illustrates this impressively. With a Robinson value of ≤ 1.0, Accurate[™] Top Strong also satisfies the highest sensory requirements, which makes it the number one choice for food packaging, where odour and/ or taste neutrality is of the utmost importance. This new GC2 quality by MM Karton is available with a freeze treatment and a freeze-grease treatment, so it is ideal for chilled or frozen foods as well as greasy products. With its perfect visual properties, Accurate™ Top Strong is also suitable for premium packaging solutions in the personal care and pharmaceuticals sector.

We look forward to your inquiries!
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ACCURATE™ TOP STRONG GUARANTEES MAXIMUM PRODUCTION EFFICIENCY.
FIND OUT MORE AND SCAN THE QR-CODE.

4 + 5

YOU WOULD LIKE TO HAVE THE SHOWN TISSUE BOX OF ACCURATE™ TOP STRONG
AS A SECRET WEAPON FOR THE WINTER MONTHS? SEND AN EMAIL TO

MARKETING@MM-KARTON.COM
WE WILL SEND A BOX TO THE FIRST 100 CONTACTS.

RECYCLED CARTONBOARD COMPLIES WITH THE 4^{TH} DRAFT OF THE GERMAN MINERAL OIL ORDINANCE

FOODCARTTM – SIMPLY COMPLIANT

Our new cartonboard quality FOODCART™ is the tailor-made answer to the 4th draft of the German Mineral Oil Ordinance, which demands MOAH migration of less than 0.5 mg/kg into foods. FOODCART™ is now available to the food producing and processing industry.

FOODCARTTM is a recycled cartonboard with a functional barrier. Using FOODCARTTM limits the migration of MOAH (C16 to C35; MOAH = Mineral Oil Aromatic Hydrocarbons) into foods to a maximum of 0.5 mg/kg. This complies with the threshold demanded by the 4^{th} draft of the German Mineral Oil Ordinance. By contrast, FOODBOARDTM, which has already been available in European supermarket shelves since early 2016, is a barrier cartonboard with ultimate protection function, as it allows no MOAH Migration at all (detection limit = 0.15 mg/kg).

Apart from mineral oils, FOODCART™ protects packaged foods from a number of other defined unintended substances such as phthalates and bisphenol A, and from cross-contamination. The effectiveness of the new cartonboard quality is confirmed by the results of internal and external migration analyses. FOODCART™ was specially developed for packaging foods like rice, cereals, and pasta.

Simple to convert – completely traceable via its own app

Information on the gluing and printing process helps with

converting FOODCART™. It does not require any certification of the converting process. Existing die-cutting forms can still be used with FOODCART™, as long as the cartonboard to be replaced is of comparable thickness. Complete traceability of the packages throughout the entire production process is ensured by the FOODCART™ app, so transparency in the supply chain is guaranteed. Our technical service is always on hand to help with technical questions and expedient application knowledge.

Ecologically sustainable

FOODCARTTM is produced inline on the cartonboard machine in the Austrian Frohnleiten mill and is available with FSC® or PEFCTM certification. FOODCARTTM is an environmentally-friendly cartonboard solution and not an extruded or laminated compound – the cartonboard is recyclable and biodegradable.

For any further questions please send an email to: FOODCART@mm-karton.com

FOODCARTTM AND FOODBOARDTM – TWO SOLUTIONS FOR ONE CHALLENGE:

FOODBOARD™	FOODBOARD™ virgin fibre		FOODCART™
Ultimate Protection			Simply Compliant
Guaranteed MOAH C16–C35 < 0.15 mg/kg (Migration incl outer carton into food)		4 TH DRAFT MINERAL OIL ORDINANCE < 0.5 MG/KG MOAH	Guaranteed MOAH C16–C35 < 0.5 mg/kg (Migration incl outer carton into food)
Mineral oils and e.g. phthalates, bisphenol A		PROTECTION	Mineral oils and e.g. phthalates, bisphenol A
External certificates Comprehensive long-term tests with different foods under real-life conditions, 12–30 months		PROOF OF BARRIER EFFECTIVENESS	External certificates Special testing series
Optimum combination of high-quality recycled and virgin fibres with ultimate functional barrier	Virgin fibres with ultimate functional barrier	FIBRE CONTENT	Recycled cartonboard with functional barrier
Light (GT1) and Brown (GT4)	Cream (GC)	REVERSE SIDE COLOUR	Light brown (GD2)
Converting guideline and certification of the converting process Guidelines for die cutting and creasing		CONVERTING SUPPORT	Technical support and information about the converting process, continued use of existing die cutting forms
Recyclable and biodegradable		SUSTAINABILITY	Recyclable and biodegradable
e.g. rice, cereals, pasta, chocolate, tea		FOODS	e.g. rice, cereals, pasta
Ultimate product safety — Migration into food not detectable (detection limit = 0.15 mg/kg MOAH)		RESULT	Conformity – Migration into food < 0.5 mg/kg MOAH as demanded by the German ordinance draft



IN SWITZERLAND AS WELL

Coop is the first Swiss retailer to offer all rice products of their store brand in packaging made of our FOODBOARD™. The migration of mineral oils and other defined unintended substances is effectively prevented by our cartonboard with functional barrier, which was developed specifically for food packaging. The material already meets the future legal thresholds currently under discussion.

Protection from migration

Guido Fuchs, Project Manager Sustainability at Coop, explains the reasons for switching to FOODBOARD™: "Until now, our foods were mostly packaged in virgin fibre cartonboard. However, this did not provide comprehensive and reliable protection from mineral oil migration and cross-contamination from the environment. We wanted to change that, so together with our rice producer Reismühle Brunnen we began to look for solutions." Reismühle Brunnen is responsible for producing the Coop store brands of rice like Fine Food, Naturaplan, Qualité & Prix, and Prix Garantie. These add up to 3,700 tons per year. "The comprehensive safety concept of FOODBOARD™, which offers documentation of the entire production process and complete traceability of the packaging, is unique and ultimately convinced us, "says Gerhard Marty, Managing Director of Reismühle Brunnen. By using FOODBOARD™, we have eliminated MOAH migration into the food above the detection limit of 0.15 mg/kg.

Premium presentation

Apart from migration protection, FOODBOARDTM offers Coop other advantages: "Certain types of rice may emit their natural grease into the packaging depending on how they are stored. That is why it is all the more important to use a packaging material that protects our product packaging from unsightly stains and discolorations," Gerhard Marty explains. Thanks to its slightly grease resistant properties, FOODBOARDTM is ideally suited for rice, baked goods, or snacks, and guarantees premium product presentation at the point of sale.

Conservation of resources

The decision to use FOODBOARDTM is based on the safety aspect, but further supported by considerations of sustainability: "In addition to the ultimate product safety we achieve by switching to FOODBOARDTM, we have the advantage of using a premium recycled cartonboard. This allows us to save on virgin fibre cartonboard and helps preserve natural resources," Guido Fuchs points out. FOODBOARDTM is not an extruded or laminated compound, so it is recyclable. Empty cartonboard packages can simply be added to the recovered paper collection just like any other cartonboard package.

Actions, not words

Sustainability is an integral part of Coop's corporate philosophy and is considered an important foundation for lasting success: Since 1973, environmental protection is incorporated in the company statutes, and in 2006 Coop formulated its sustainability guidelines. The corporation's commitments to society and ecology are many: from fish and seafood in organic quality all the way to environmentally-conscious goods transport by rail and road. Coop's contribution to sustainable consumption is summarised on the platform "Actions, not words". We are pleased to make a valuable contribution to the effort with Action No. 348.

COOP



The Coop Group has strong roots in Switzerland and looks back on a 150-year history. What started as a small consumer cooperative is now an international corporation. With roughly 85,000 employees, the Coop Group had total revenue of CHF 28.3 billion in 2016.

Coop is much more than the familiar supermarket around the corner. The Coop Group is divided into two sectors, retail and wholesale/production, which work hand in hand and use synergies. In the retail segment, Coop has about 2,200 stores exclusively in Switzerland. Their supermarkets, specialty formats, and online shops leave no customer wish unfulfilled. In the wholesale/production segment, the group is active Europe-wide. The Transgourmet Group operates pick-up markets and supplies major customers. In the production segment, Coop has a strong international presence with the Bell Group.







THANKS TO FOODBOARD™, COOP RICE
IS SAFELY PROTECTED FROM MINERAL OIL MIGRATION



THE PLATFORM "ACTIONS, NOT WORDS" STRIKINGLY ILLUSTRATES

COOP'S COMMITMENT TO SUSTAINABILITY

PRECISION & EXCELLENCE: WHITE TOP COATED RECYCLED LINER BY MM KARTON

With our extensive range of classic liner qualities for offset and flexo printing, we as one of Europe's leading producers of white top coated recycled liner qualities can offer convincing solutions for all standard applications of corrugated cartonboard packaging.

Our new "Liner Sample Box" illustrates the point impressively.

Quality as a synonym

Liner by MM Karton compels particularly with its outstanding appearance: Excellent opacity and brilliant gloss combined with highest smoothness make for the best surface of all white top coated recycled liner qualities worldwide. We achieve this consistent quality by means of state-of-the-art production methods and strictest online control, which at the same time also guarantees superb converting properties and perfect concealing performance. Thanks to all of these features, liner by MM Karton gives the packaged product a highly attractive brand appearance at the point of sale.

Premium quality products deserve the best quality of service: The strategically advantageous location of our liner mills in Central Europe – FS-Karton in Neuss (Germany) and Kolicevo Karton in Domzale (Slovenia) – ensures maximum supply reliability as well as flexibility. Frequent and regular production cycles make for short delivery times. The combination of these factors makes white top coated recycled liner by MM Karton

the first choice for high printing quality and sophisticated branding: Precisely working, offering excellent performance, like a clockwork.

"Precision and Excellence" as a motto

Convincing quality is also evident in the presentation: The new liner sample collection contains an informative brochure, printed and unprinted samples, as well as samples laminated on different flutes. The application-oriented presentation in the sample box simplifies the selection of the optimum liner in your day-to-day business. True to the motto "Precision and Excellence", the samples show fine, detailed clockworks to demonstrate the superb printing class of our liner qualities.

We look forward to your inquiries about our liner qualities and the sample box!

Email: marketing@mm-karton.com









THE LINER SAMPLE BOX STRIKINGLY DEMONSTRATES THE HIGH PRINTING QUALITY

OF OUR OFFSET AND FLEXO LINER

EXPANSION OF THE SUCCESSFUL MULTIMILL CONCEPT:

MM LINER™ 180 GSM (NEUSS) AND MULTICOLOR MIRABELL™ FREEZE (HIRSCHWANG)

The heart of our MultiMill concept is the production of a specific cartonboard quality at several of the group's locations at the same, consistently high quality. We have further expanded this concept, as it has proven successful in the market.

Supply and delivery reliability guaranteed

Thanks to our MultiMill concept, which is unique in the industry, our customers can depend on reliable supply and consistent quality. Production at multiple locations guarantees maximum supply reliability paired with unusually short lead times, even for very high demand. The advantageous, well-connected locations of our MM Karton mills with respect to the Eastern, Southern, and Western European markets guarantee short transport routes and flexible service.

MM Liner™ 180 gsm from Kolicevo and now also from Neuss

In addition to production at the Kolicevo mill (Slovenia), MM Liner™ is now also available from our mill in Neuss (Germany) in the 180 gsm grammage. This expands our MM Karton MultiMill concept by this grammage, true to the motto "High

Performance – Low Substance", to meet the high demand for low grammage in offset printing. MM Liner™ compels with good visual parameters – high gloss and high opacity – and with best results in printing and converting (dimension stability), so it is ideal for all corrugated board laminating applications.

$\label{eq:multicolor} \textbf{Multicolor Mirabell}^{\text{IM}} \ \textbf{Freeze from Gernsbach and now} \\ \textbf{also from Hirschwang}$

Multicolor MirabellTM Freeze, a high-quality GD2 recycled cartonboard originally produced in the Gernsbach mill (Germany) is now also available from the Hirschwang mill (Austria). With its environmentally-friendly freeze barrier, it is stable even in high relative humidity and offers protection during changing climate conditions (e.g. during defrosting). Multicolor MirabellTM Freeze is thus the ideal solution for packaging of chilled or frozen foods (such as frozen pizza, ice cream, and dairy products).





MULTIMILL CONCEPT: MM LINER™ IS PRODUCED AT THE MILLS IN NEUSS AND KOLICEVO,
MULTICOLOR MIRABELL™ FREEZE AT THE MILLS IN GERNSBACH AND HIRSCHWANG

MM BIB-LINER™ – THE LINER FOR BAG-IN-BOX SOLUTIONS

MM BiB-Liner™ is our answer to the growing bag-in-box market: A tailor-made liner, perfect for packaging solutions for liquids or pasty foods. MM BiB-Liner™ also guarantees high stability – thanks to the best BCT values of all white top coated recycled liner qualities.

MM BiB-Liner™: stable and appealing packaging

The BCT value (box compression test) refers to the force a package can absorb and conduct without buckling. The value depends on the ambient humidity and the folding carton's own humidity, and the material structure. Thanks to a new fibre composition, MM BiB-Liner $^{\text{TM}}$ has superb BCT values, so it provides particularly high package stability. With its smooth surface, MM BiB-Liner $^{\text{TM}}$ offers ideal conditions for printing and finishing (e.g. foil embossing, UV coating) for individual brand and product messages, and presents packages as attractive "eye-catchers" on the store shelf.

Bag-in-box packaging: hygienic, compact, sustainable

A bag-in-box package (BiB) is an inner bag of foil composite material that is mechanically supported and protected by a corrugated outer carton. The bag-in-box system offers the advantage that no air comes into contact with the liquid to be dispensed. Unlike with bottled liquids, consumers can store wines or juices this way for up to six weeks after opening (without refrigeration). Commonly used bag-in-box volumes are 3, 5 and 10 litre bags.

Bag-in-box solutions are highly efficient in terms of transport: To minimise storage space requirements and transport costs, the packages are delivered flat. Large product volumes can be moved with low transport volume. Bag-in-box packages are also disposable, and bag and carton can easily be discarded separately.

The concept of this so-called combination package has been around since antiquity – just think of goat leather wine skins. Inspired by the idea, the Australian Thomas Angove had the

bag-in-box package patented as a wine packaging solution in 1965. In the English-speaking regions (New Zealand, Australia, USA), the bag-in-box package is widely used for wine; the lion's share of wine produced in those countries is marketed in this form. In Europe, Scandinavia and Great Britain are the largest markets for bag-in-box wines, fruit juices (hot filling), and dairy products.



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MM BIB-LINER™ PROVIDES HIGHEST STABILITY

OF BAG-IN-BOX PACKAGING

17 ART

PASSION FOR CARTONBOARD: MM KARTON ART CALENDAR 2018

As diverse as the people working at Mayr-Melnhof Karton may be, they all have one thing in common: A passion for our product cartonboard. Our 2018 calendar proves that this passion is shared by many other people around the world.

In 12 monthly pages, 13 international artists demonstrate that cartonboard is not just a packaging material, but that its applications are virtually limitless: From cut-outs to folding all the way to 3D wall paintings – cartonboard can impress in lots of ways. Be inspired by the works of art, and infected by the passion for cartonboard! Order your 2018 calendar from marketing@mm-karton.com







1 + 2 + 3

WALL AND DESK CALENDAR
WITH STRIKING ARTWORKS
BY INTERNATIONAL ARTISTS

MMK ON LOCATION – THE MOST IMPORTANT INDUSTRY EVENTS IN THE 3RD/4TH QUARTERS OF 2017

The ECMA Congress and the FEFCO Technical Seminar were two of the most significant events of the cartonboard and corrugated board industry.

Both took place this fall in Austria.



ECMA CONGRESS

21 TO 22 SEPTEMBER 2017, SALZBURG

"When Cartons Matter" – the motto and agenda of this year's ECMA Congress (European Carton Makers Association) in Salzburg aimed at further probing the essential benefits (design, communication, efficiency, sustainability, protection) of cartonboard as a packaging material. A large panel of experts discussed how these advantages can be more efficiently communicated.

In particular the contributions by Andrea Boltho, Oxford University, and Karin Kneissl, journalist, lecturer, and energy analyst, provided lots of food for thought. Andrea Boltho examined the current economic and political situation in Europe and the consequences to be expected from for instance Brexit, Great Britain's exit from the EU, or the presidency of Donald Trump. Karin Kneissl outlined reasons why the migration of people remains an issue and that this discussion has only just begun.

It is important to place our commonalities ahead of our differences and master the challenges of the future together. Our joint talk with Bobst and Baumer hhs "Full Speed Ahead/Maximizing Production Efficiency with Optimised Cartonboard" proved that thesis: The highest achievements are only possible through consistent cooperation and peak performances from every supply chain partner. In the cartonboard segment, our new GC2 quality Accurate™ Top Strong delivers top converting efficiency. The highlight of this year's congress was the lecture by composer Johnny Bertl on the strict organisation in an orchestra, topped only by his conducting a large orchestra live on the stage of the ECMA conference – Mozart's overture to the opera "Le nozze di Figaro". As every year, creativity was rewarded at the European Carton Excellence Awards. We sincerely congratulate the winners.



FEFCO TECHNICAL SEMINAR

11 TO 13 OCTOBER 2017, VIENNA

This year's annual conference of the FEFCO, the European Corrugated Packaging Association, was held under the motto "Corrugated Processes Complexity – Challenges and Solutions". The focus of the event was on the new challenges presented to the corrugated cartonboard industry by digitalisation in the context of Industry 4.0, and also on the changes wrought at the European level by political measures. MM Karton was on location with its convincing range of liner products, and particularly our innovations in this area were met with keen interest: The new development MM BiB Liner $^{\text{TM}}$ – a tailor-made

solution for the growing bag-in-box market – has the best BCT values (box compression test) of all white top coated recycled liner qualities thanks to a new fibre structure: highest stability is guaranteed. MM X-Liner $^{\text{TM}}$ HD and MM X-Liner $^{\text{TM}}$ lite are evolutions of our established MM X-Liner $^{\text{TM}}$. While MM X-Liner $^{\text{TM}}$ HD shines with excellent surface properties (brightness, opacity, gloss), making it the first choice for superb printing quality, MM X-Liner $^{\text{TM}}$ lite scores with peak economic performance thanks to best converting performance.







ECMA CONGRESS:
MM KARTON BOOTH

(2)

ECMA CONGRESS: JOHNNY BERTL CONDUCTED

AN ORCHESTRA LIVE ON STAGE

(3)

FEFCO TECHNICAL SEMINAR:
MM KARTON EXPO BOOTH

VISIT US SOON AT THE FOLLOWING EVENTS:

Vinaria | 21 to 25 February 2018, Plovdiv

Fachpack | 25 to 27 September 2018, Nuremberg

MMK CUSTOMER SURVEY 2017 – THANK YOU FOR PARTICIPATING!

Constant improvement is what allows us to remain our customer's first choice in the long term. That's why we asked once again in the fall of 2017:

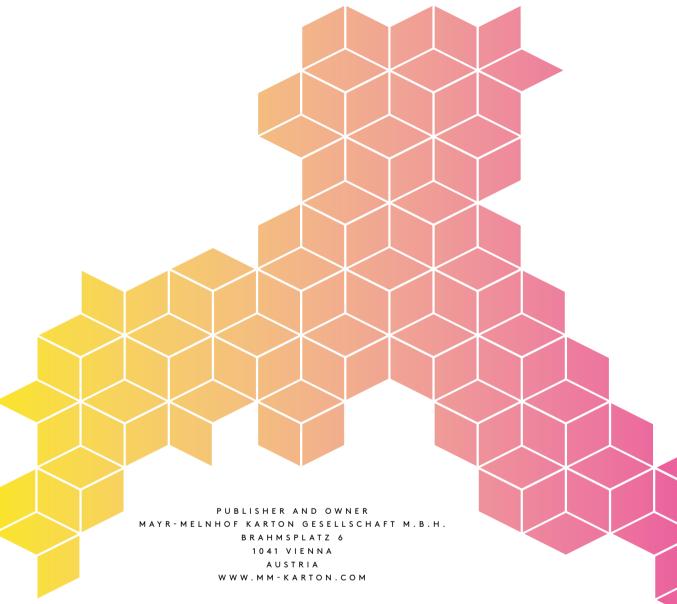
How satisfied are our customers with MM Karton?

In November, Mayr-Melnhof Karton launched with the independent market research institute marketmind an international online customer survey, in which we put the quality of our products and satisfaction with our services to the test. The response rate among the nearly 1,500 folding carton producers, consumer goods manufacturers, paper and cartonboard merchants, and retail representatives was more than one fourth.

We would like to take this opportunity to extend our heartfelt thanks to all those who participated in the survey. Your answers help us to gain valuable insights, so we can meet your needs even more precisely in the future. Starting with the insights from the survey, we strive to strengthen our position as a professional, competent, and reliable contact for all of your cartonboard needs. Your feedback is our obligation.

The cover of this edition was printed on Accurate TM Top Strong 290 gsm:

- ANIVA and Pantone inks
- Hot foil embossing
- Relief embossing
- Partial UV coating
- Full-surface dispersion varnish, silk-matte



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GRAPHIC CONCEPT RIEBENBAUER DESIGN