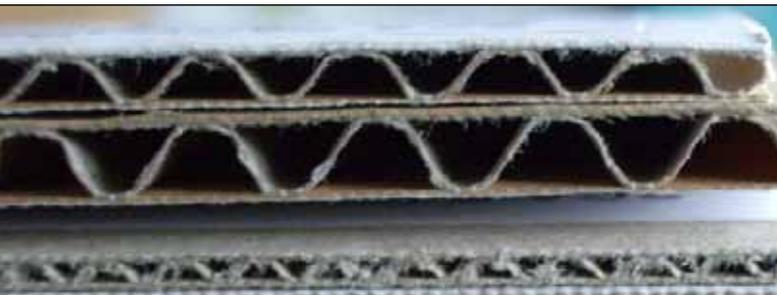




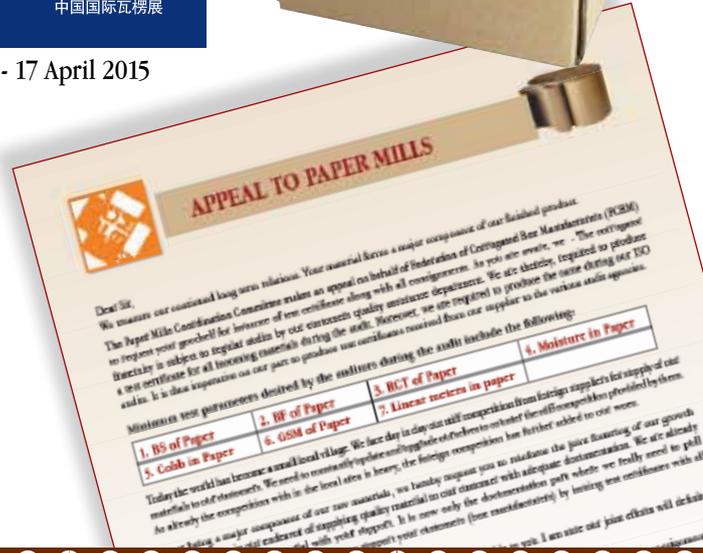
The Corrugator

OFFICIAL MAGAZINE OF FEDERATION OF CORRUGATED BOX MANUFACTURERS OF INDIA

January - March 2015



14 - 17 April 2015



APPEAL TO PAPER MILLS

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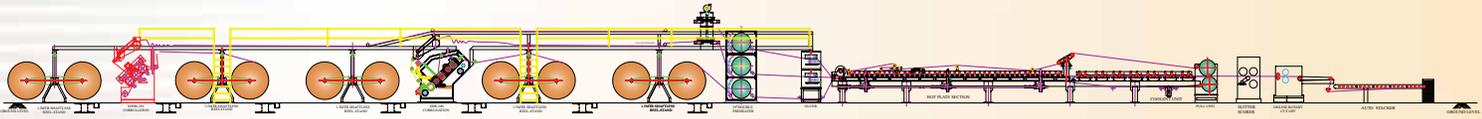
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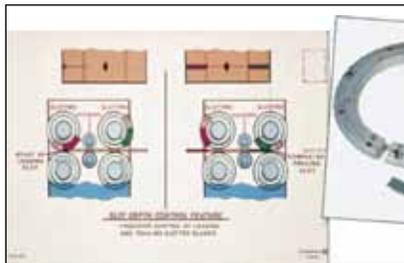
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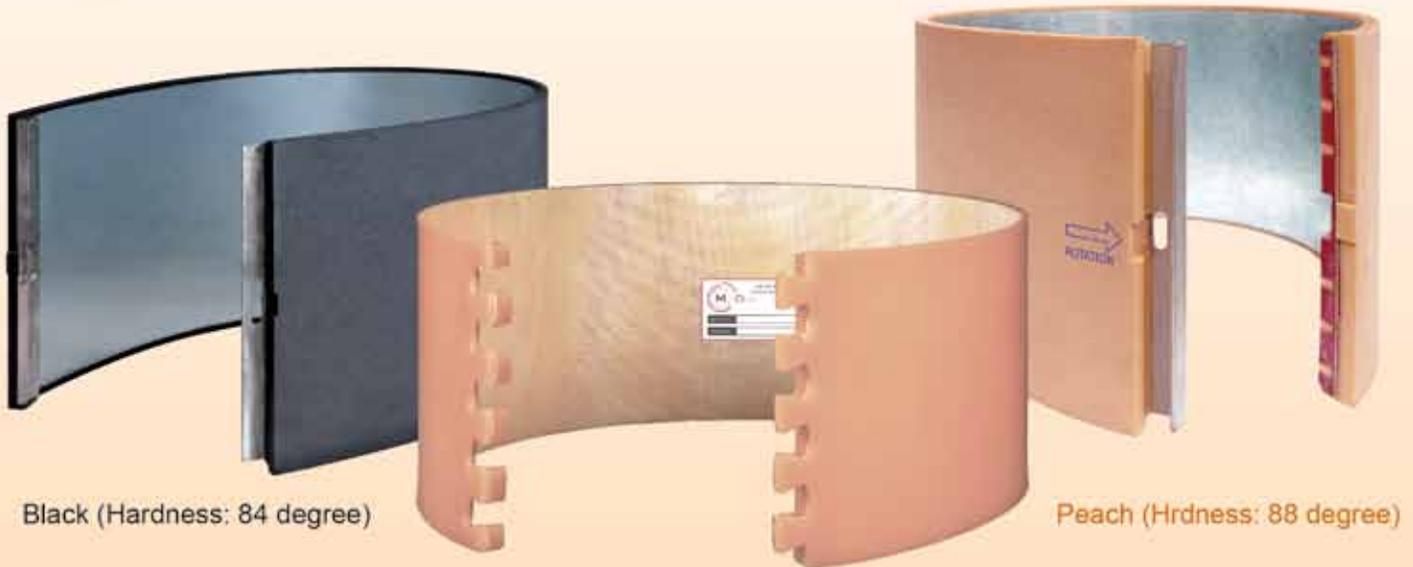
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Black (Hardness: 84 degree)

Peach (Hrdness: 88 degree)

Peach (Hrdness: 88 degree)

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THE EDITORS' PAGE



R. Suresh



Pulkit Shab

Welcome to the first issue of 2015.

As we enter the next financial year it is pertinent to consider the economic outlook of the country.

Today, "India is indeed a bright spot in the global economy, and economic developments hold much promise"

India has an opportunity to emerge as one of the world's most dynamic economies but it needs to implement the planned reforms and open up more fully to the world.

The Union Budget has been hailed as a Super Hyper Budget bringing cheer to everyone and pushing up investment and growth.

Although the economic outlook of the country is great as stated by experts the growth is not yet felt on the ground. While the sentiment in the market reflects general economic outlook there is a real thrust needed for the core industries to show ground results.

Packaging - although vital for every product packaging is always considered as an element performing a supportive function of protecting and transporting a goods.

As we all know, corrugated packaging is used for packing and transporting more products than any other mode of Packaging.

Corrugated packaging thus continues to play a vital role in the Supply Chain Management. This brings us to the point of how the industry can cope with large volumes and speedy deliveries as required by today's customers. Automation appears to be the obvious answer.

However, inspite of the fact that more and more corrugated packaging units are switching to automation, the industry predominantly consists of small and medium corrugators efficiently using semi-automatic process. More than 85% of the units in India use semi-automatic process.

India is a vast country with a huge market for packaged goods. India's market is also distinct and very varied. There is room for everyone to grow and prosper.

While there is a strong case for automation and production of large volumes of corrugated boxes, which calls for switching to automation, there is an equally strong case for small and medium enterprises.

One needs to scale up capabilities and not necessarily scale up capacities— which demand huge investments with the inherent danger of being bogged with idle capacities.

One needs to scale up capabilities in terms of quality, innovations in design and marketing – to meet the changing requirements of today's customers.

The fast growing e-commerce has created huge demand for corrugated not foreseen in the past. The profile of our customers is totally different today. While in the past F & B industry was the major user of corrugated boxes, it is E-commerce which is taking the top place for some corrugated box makers. In this scenario that box makers have to keep pace, adopt technologies and processes to match this changing profiles of customers.

The Supply Chain Management has become complex and hi-tech.

As such markets open up we need to explore these by innovative methods.

This issue features an article. 'To be or Not to be' which is an eye opener.

We have also featured an interesting technical article on 'Cutting of Triple wall Corrugated'. There are other articles related to technology developments.

Readers will also be pleased to see the page 'Passionate with The Corrugator' – a collection of past issues.

The 44th FCBM Conference will be held in Gods Own Country. The tentative dates are 20,21, 22 November 2015. The conference will be held at the beautiful Le Meridian, Ernakulam.

Let us make the conference a memorable one!

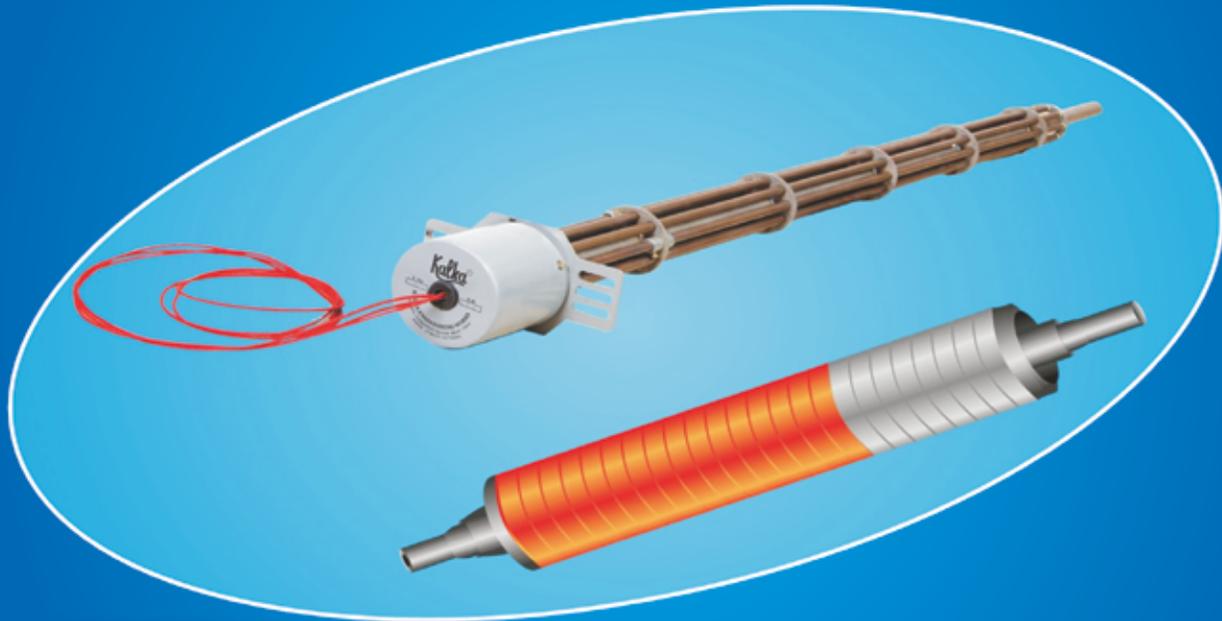
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PRESIDENT'S MESSAGE



P. S. Shah

Dear Friends,

I am happy to meet you through “The Corrugator” our official magazine, and to acquaint ourselves about the activities of our various regional associations as mentioned in “FCBM News” column of the magazine. I sincerely wish that all the regional associations should be very active and organise seminars, workshops, etc and create awareness amongst their members for the need of quality innovations, in process technology or product innovations, through Research and Development. Sometimes even small matters learnt from such occasions act as eye-opener, if we want to seize the opportunity to implement our prominence in the field.

It is a matter of great importance to note the falling oil prices, and lower interest rates, which may turn out to be a game changer. The lower oil price is lowering inflation and will be obstacle in hike in interest rate. As per the World Bank report low oil prices will help to cut fuel subsidies in order to divert funds, saved from subsidies for development purpose. The Union Budget proposals aims at making India fastest growing large economy in the world with GDP growth expected to be 7% in the coming year.

We welcome the step taken by Government for promoting entrepreneurship and also the assurance received from Ministry of Skill Development & Entrepreneurs through Mr. Bharat Kedia who has initiated the proposal of having training centers.

Our Hon'ble Finance Minister Mr. Arun Jaitley has said the allocation for rural job guarantee scheme will be the highest ever.

Two-thirds of India's current population is below 35 and, thus to ensure that the young get proper jobs, it has been planned to make India a manufacturing hub of the world. This purpose will be addressed through the Skill India and the Make in India programmes and so while major economies of the World face difficulties, India is poised for higher growth.

India needs to keep a tight leash on its expenditure and direct it towards public investment to achieve rapid sustainable and all encompassing growth even as the Country can slightly loosen the purse strings in the immediate future.

We are all eager to visit Sino Corrugated 2015 and India day launched on 15th April 2015 by Reed Exhibitions. Both the events are of great importance to all of us.

Innovation is successfully exploring new ideas or to buy technological innovations of others. Specially there is huge scope of adopting process technology-either by changing the technique or equipment. This year, a delegation of more than 100 Members of FCBM is visiting Sino Corrugated 2015. This itself shows how keen we are to implement new ideas and vision in our industry.

While concluding I am sure new editors will infuse more and more ideas and write ups and articles of Research and development to create interest among its readers as well as to take “The Corrugator” on top of its academical value.

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Managing the Scoring and Slotting Process

First of all, I hope that everyone is surviving this winter of 2015. The snow and extreme temperatures are certainly a challenge and seem to be never ending. We do know, however, that spring is just around the corner.

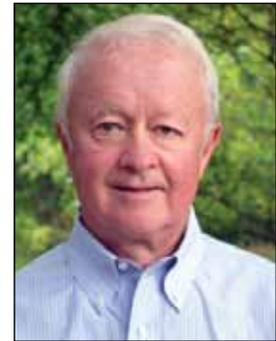
In this article, I want to go into some detail regarding the concept of slotting and scoring in flexo folder gluers. This is an area that needs clarity as we continue our journey producing corrugated with so many variables. We often discuss box integrity, squareness and consistency we need solutions or at least some ideas that we can review as we go through the troubleshooting process of folding and gluing square boxes. We need to identify proper scoring profiles and depth of score and slot locations so that we can supply customers with proper shipping containers.

Before we start, I want to remind everyone that we must first deliver accurate and consistent caliper sheets to the slotter section. Many tooling suppliers offer different scoring profiles for the different markets around the world. They are sold as tools that will enable the box maker to produce square boxes with predictable dimensions. In those discussions, however, board caliper is rarely discussed. In previous articles I have referenced the

importance of managing board caliper and the requirement that says we can lose no more than 0.003" (0.08 mm) caliper in the non-printed area of the sheet in the converting process. This will better enable us to accurately and consistently score and slot the sheet at the rate of two to three sheets per second or faster.

Preventing Rolling Scores

In order to fold an RSC accurately and consistently, we need to locate a proper width and depth scoring profile at four different locations across the sheet. At this point, we should review the fact that there are also two different and unique scoring requirements in every box. As we know, every box has four scores. Two of the scores will fold 90 degrees and the other two will fold 180 degrees. We are never challenged by the two scores that fold only 90 degrees. They are the two scores that fold the glue tab and score number three across the sheet. These scores fold easily without any interference and never offer any rolling score issues.

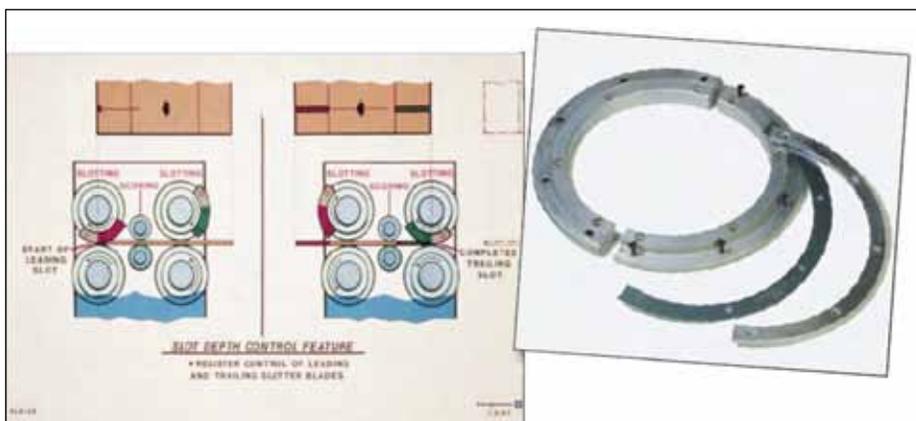


Dick Target
"On Target Consultants"

The scores that offer challenges are score numbers two and four. These are the scores that fold 180 degrees and are the ones that cause rolling scores.

A number of years ago, as a young engineer, I was given an assignment to study and improve scoring and folding the flaps in RSCs. After reviewing and inspecting 5000+ box samples over several weeks, we decided that the fold was accurate and unrestricted until it was 120 degrees into the fold. At that point, the "flute forms" in the sheet started to interfere with the fold itself. As you can understand, the interference was more prevalent with the taller flutes (C and A).

I developed a way to minimize the "flute interference" during the fold. As we know, the score line is centered in each slot location and slot standards are 1/8" (10 mm) wide. Please note that the design width of the score head itself matches the width of the slot. Therefore, the current design criteria says that the score head will reduce the caliper of the sheet just 1/8" (10 mm) wide and nothing more. That dimension is actually one-half of that width so the net reduction is one-half of the slot width on either side of the score. The rolling score issues develop outside that 1/8" (10 mm) dimension on either side. You can see



Cont. on - 15

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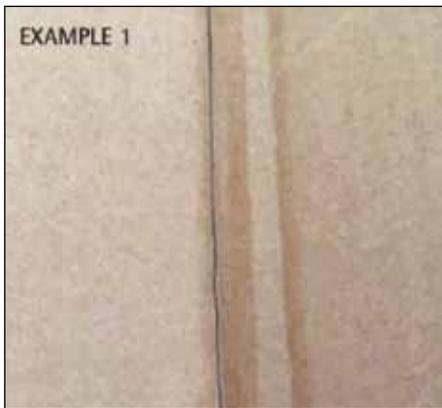
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this in Example 1. What actually happens is that the flute form offers resistance and the sheet wrinkles. Then the sheet fails and now you have two or three scores in that area of the fold. At normal production speeds, the sheet then has no idea where to fold or which score is the correct one. This then results in over folds, skewed panels and boxes that will not work in your customer's plants.

IN ORDER TO FOLD AN RSC ACCURATELY AND CONSISTENTLY, WE NEED TO LOCATE A PROPER WIDTH AND DEPTH SCORING PROFILE AT FOUR DIFFERENT LOCATIONS ACROSS THE SHEET.



IN THIS EXAMPLE OF ROLLING SCORES, THE FLUTE FORM OFFERS RESISTANCE AND THE SHEET WRINKLES RESULTING IN TWO OR THREE SCORES IN THE AREA OF THE FOLD.



ANOTHER EXAMPLE OF THE FLUTES RESISTING THE FOLD.

I am suggesting that you use pre-scores or pull collars to reduce the caliper of the sheet 0.100" (2.5 mm) wider than the width of the slot, on either side. The sheet is going to do that anyhow as the flap passes that 120-degree point in the fold. My suggestion is to reduce the caliper of the sheet in a controlled environment in order to minimize the resistance as you have now pre-crushed the flutes. This will offer a predetermined reduced caliper environment as the flaps pass the critical 120-degree point and then complete their 180-degree fold.

As I have said before, this will only work if you deliver a proper caliper sheet to the slotter section in the press. If you have excessively crushed the sheet in the feed section, there is no time for the sheet to recover by the time it gets to the slotter section.

Other Considerations

Depending upon who your customer is, the standard TAPPI tolerance for manufactured gap $\pm 1/8$ " (10 mm) $\pm 1/8$ " (10 mm $\pm 1/8$ - 3 mm) - may not be acceptable. Note: this means that the TAPPI standard says the manufactured gap can be from 7 to 12 mm wide and still be in tolerance. At the end of the day, as box makers, we should offer our customers consistency and predictability in a box that will work in their environment. Most times, customers prefer the tolerance on the small side of the scale. If we go to the high side and the manufacturer's gap is 12 mm, it will leave an open hole in the corner of the folded box. Depending on the size of the box and its contents, this may not be acceptable, although it is in tolerance. My personal feeling is that an open hole in that corner will allow dirt or dust into the box and again, that may not be acceptable to your customer.

Another area of concern is the paper combination of the sheet itself. Recycled liners on the inside and outside (also known as balanced liners) are somewhat easy to manage in the folding process. Due to the fiber content of



SLOTTER SECTION.

the recycled sheets and the board combination (balanced or unbalanced liner combination), the folding capabilities can be challenged. From experience, virgin inside and recycled outside liner combinations will fold much better than the reverse. Unfortunately, many customers want virgin outside liners for appearance and printing preferences. Recycled inside liner combined with virgin outside liner is a folding challenge due to the fiber orientation of the recycled sheet. My comments regarding reducing the caliper of the sheet 0.100" (2.5 mm) on either side of the edge of the slot certainly helps in this environment. It now wants to review the proper TIR on the scoring heads themselves. The maximum suggested TIR (Total Indicator Runout) is a maximum of 0.002" (0.05 mm). This is critical. If the TIR is excessive, this will vary the depth of the score in the sheet and cause real folding problems. Note: TIR is a maximum number only. It is not a \pm number. There is a real skill required in measuring TIR, requiring some real patience. Take your time and do it correctly so that you can maximize the performance of your slotter section.

We also need to discuss the durometer on the polyurethane scoring heads. There are several choices. The real question is a soft durometer polyurethane (35 to 40 durometer) or a hard durometer polyurethane (70 to 75 durometer). It depends on your local market and paper suppliers. If you need a recommendation, I would suggest 70 durometer. The head will last longer and offer a definite scoring profile on a wider range of corrugated sheets. Incidentally,

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AFTER REVIEWING AND INSPECTING 5000+ BOX SAMPLES OVER SEVERAL WEEKS, WE DECIDED THAT THE FOLD WAS ACCURATE AND UNRESTRICTED UNTIL IT WAS 120 DEGREES INTO THE FOLD.



the tolerance numbers in the world of polyurethane is plus 5 minus 0. So if you order a 70 durometer head, it will come in around 72 or 73 durometer. It will never be less than 70 durometer.

At this point, we should now review the use of wear buttons. As we know, these buttons locate the slotter heads and center their position in the female heads. The wear buttons need to be monitored and replaced on a planned schedule. These wear buttons maintain the clearance between the slotter knife and the female portion of the blade assembly. This needs to be watched carefully because when they wear, the slotter knife will rub against the female head section and create excessive heat in the process. If you ever see the color of the slotter knife turn blue, this represents at least 1200 degrees F (650 degrees C) in the steel knife. This is extremely dangerous. If the slot scrap accumulates in this area, the slot scrap will ignite as paper ignites at around 400 degrees F (205 degrees C).

As good engineers, attention to details is never wasted time. Be smart. Be Careful. Enjoy your job.

Dick Target, owner of “On Target Consultants” based in Lower Gwynedd, Pa., has been in the corrugated industry for over 35 years. He has worked in 29 countries developing and guiding corrugated plants in lean manufacturing, vendor development and management training.

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We sincerely acknowledge the article was originally published in Mar-Apr. 2015 issue of Corrugated Today. Our sincere thanks to them.

He teaches Converting Short Courses for TAPPI and is an active member of TAPPI’s TCC (TAPPI Consulting Council). He can be reached at: dicktarg@tgmail.com

Self-heating technology

RBC Technologies’ self-heating pack is based on a derivative of hearing aid battery chemistry, which scavenges oxygen from the air to power the heating reaction. The reaction is air activated, making it inherently safe yet very powerful, says the company.

It enables a lot of heat to come out of a thin profile package. The company comes up with an example for the medical industry. In the thermo-formable Rapid Splint product, the heater is able to heat the splint inside the packaging up to 200°F (93°C) in a matter of minutes, from a heater just 0.030” thick. And while the inside is very hot, the outside of the packaging maintains a temperature that is still safe to touch.

A key enabler for long-lifetime performance and user friendliness is an adaption of the Sonoco SmartSeal technology, which is used

to provide on-demand air access that powers the heating reaction.

The RBC self-heating technology is adaptable in size, is flexible and easy to integrate with existing packaging. It uses only FDA GRAS (for direct and indirect food contact) materials and is currently made entirely in the USA at FDA registered manufacturing facilities.

I add some extra information from another. A development that might be interesting to the further evolution of self-heating packaging.

It’s only still a prototype. But this cardboard battery will probably be on the market in two years. They are particularly targeting the smartphone users, as the consumer buys a package in which 8 batteries are sitting together. You can break them off one by one and put them into your phone, which in turn has another 6 hours of power.

To meet consumer requirements UK onion specialist, G’s Fresh, has brought a “Pickle your own” kit. The packaging consists of all the essentials to create pickles at home including an airtight container, malt vinegar and pickling onions together with a recipe and directions on how to create the perfect blend.

A report by food trends agency, The Food People, put the rise in popularity down to heavily influences from the Nordic food scene that has seen restaurants moving on from molecular gastronomy to a simple pared back way of cooking. The trend is pushing the popularity of raw foods, vegetables and foraged foods and pickling them as a way of preserving for year round enjoyment.

Source: Internet





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Save Energy through Zone Heating Systems

Corrugation Machine is considered to be the mother machine of the box making machineries. Corrugation is the 1st step in Box Making. The quality of Corrugation largely determines the quality of the Box.

The Corrugation Machine consists of 2 major components –

- 1) The 3 rolls i.e. 2 flute rolls & 1 pressure roll.
- 2) Heating System for the 3 rolls

However good a Corrugation Machine may be, without proper heating it is impossible to achieve the desired results. Heating System though not visible, is as crucial to the Corrugation Machine as the heart is to the human body.

The heating system is critical to flute formation & gelatinization of the adhesive during the 2 Ply formation in the Corrugation Machine. Also the Heating System of Corrugation Machine generally consumes more than half of the plant's total energy requirement. At an average a 52" Corrugation Machine consumes Electricity worth Rs 500000/- per year.

Energy today forms an important component of the processing cost.

Zone Heating System

Zone heating system has been a revolutionary product developed and made in India as per Indian requirements. It does not exist anywhere else in the world and is by far the ideal system for heating of corrugation machines.

ZHS is based on the modern day concept of "Energy Management", which is now also one of the prime concerns of the government.

By energy management, we mean effective utilization of energy brought about by preventing losses in undesired areas. The "Zone Heating System" is 'Pure Energy Management'. It is an effective way of heating corrugated rolls conventionally by electric heaters, but only in the desired areas.

It is easy to adopt as it does not require any additional set-up, but at the same time, gives you cost effectiveness.

The 'Zone Heating System' has evolved from tubular heaters but are different from the conventional tubular heaters being used in corrugation roll heating.

There are 3 critical components determining the efficiency of a tubular heater-

1. The coil
2. The electrical insulation
3. The tubular sheath.

The coil determines the heating capacity, the electrical insulation insulates the coil from the tubular metallic sheath to prevent leakage of current and the sheath forms



Ashu Jhingan

Managing Director, Electro Heat - Delhi

the outer casing. All these three components have been carefully chosen to maximize heat output while consuming minimum electricity. As a result, the zone heating system consumes 10% lesser electricity as compared to conventional heaters when converting full size paper on the corrugation machine.

Each Zone Can Be Operated Individually Or In Any Desired Combination

Very often, it is observed that corrugators convert lesser sized paper on a corrugation machine. Due to this, there are numerous losses which occur over the years and are not calculated. 'ZHS' by using effective energy management helps save on such losses, while at the same time, increases machine efficiency and reduces machine maintenance.

'ZHS' gives the user freedom to heat only the desired zone of the rolls. Provision of three individual heaters gives the Corrugator independence to

Distinctively LI SHENQ

Automatic Flat Bed Diecutter

User-friendly Operation
Comprehensive Safety Guard
High Accuracy
Minimal Trouble

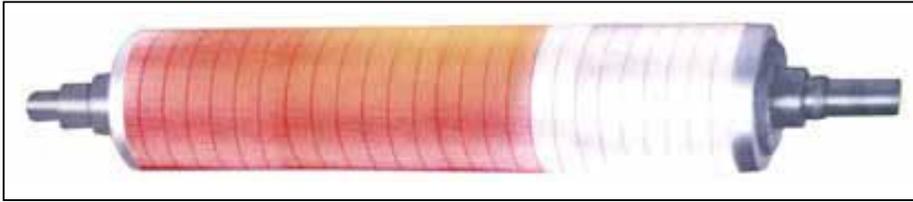


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CHL



heat the panel side, center and motor side individually or in combinations as desired. Such controls are facilitated by a control panel.

Let's take an example-

A corrugator using a 52" corrugation machine very often may convert paper upto 42" width. In such circumstances, we can have a ZHS with Zone1 of 10", Zone2 of 26" and Zone3 of 16". These 3 zones act as independent heaters and the corrugator when converting paper sizes upto 36" may switch on Zone1 of 10" and Zone2 of 26". Zone3 of 16" in this case, will remain off, effecting a saving of about 35%. Similarly, when the corrugator wishes to convert sizes between 36" and 42", he may work with Zone2 of 26" and Zone3 of 16". Zone1 of 10" in this case will remain off, effecting a saving of 20% over and above a saving of 10% because of higher efficiency of Zone heaters. If he is to convert sizes lesser than 26" only Zone 2 will be switched On. Zone 1 & Zone 3 will remain Off resulting in less than 50% power consumption than TCH.

Your machine size is 52" (O) bearing mounted

Present Electric Load 10 KW X 3 = 30 KW

Paper size you run most often 26" to 42"

Option - 1

Zone 1 – 10" (5.5 KW), Zone 2 – 26" (15 KW), Zone 3 – 16" (9.5 KW)

The capital cost of ZHS is much higher than TCH but an average corrugator can recover the cost of ZHS within

8 months. With an average life of 4 years of a good product, it is a promising investment.

'ZHS' eliminates the need for

| When Converting Paper | Present Consumption | Zone Switched on | Zone Heating Consumption | Percentage Savings |
|-----------------------|---------------------|------------------|--------------------------|--------------------|
| Up to 26" | 30 KW | Zone2 | 15 KW | 54 % |
| 27" to 36" | 30 KW | Zone1 & Zone2 | 20.5 KW | 35 % |
| 37" to 42" | 30 KW | Zone 2 & Zone3 | 24.5 KW | 20 % |



keeping multiple machines. Often, it is observed that corrugators keep smaller machines to convert smaller sized paper. This involves need for additional space, additional investment and additional electricity connection. All such needs can be foregone by using ZHS.

Corrugation machines face typical problems whenever a small sized paper is run on a bigger machine. These problems occur because the corrugating machine has an optimum temperature where the paper is being run, but a much higher temperature on the sides where there is no paper. These typical problems are

1. Blister formation on the 2 ply output.

2. Premature wear and tear of the corrugated rolls.
3. Frequent jamming of bushes, bearings and other rotary parts of the corrugation machine.

The ZHS eliminates unwanted heat which helps overcome these problems.

Since the overall requirement of electricity comes down drastically, the load on generator sets, mains, electrical

wiring, fuses, MCBs and transformers, etc. automatically reduces, thereby increasing their life and efficiency considerably.

The installation of ZHS is simple and can be done within 4 hours, keeping downtime to a minimum. It is convenient to use and simple to maintain.

ZHS, is now recognized by both corrugators and corrugation machine manufacturers as the most efficient, yet economical way of electrical heating in corrugation machines. Over 1500 installations have already been made in the past 10 years. This figure is rising steadily every month.

Ashu Jhingan is an MBA with expertise & vast experience of Energy Management in Electric Heating. Zone Heating System & Box Drying Machine are two unique and very successful products developed, introduced and implemented by him across India for Semi Automatic Box Plants. FCBM has recognised his contributions and awarded him with the prestigious Late Shri B.K. Doshi award.





NC Slitter Scorer

CORRUGATED MACHINE
DESIGNING MANUFACTURING & COMMISSIONING

A Case Study of Inventory Control

BACK GROUND

Girnar Corrugators Pvt. Ltd. is a well known corrugator in MP & its nearby states. The group is 40 years old & is running 1 No. 5 ply Automatic Unit at Indore & 3 Nos. Semi Automatic unit at Indore & Vadodara. We also run 1 No. offset printing unit at Indore.

The group is also actively involved in Duplex Board Trading.



Mr. Amit Jain

Girnar Corrugators Pvt. Ltd., Indore

CASE SUMMARY

5 ply Automatic Unit , Deckle : 52 Inch , Speed : 25 meter is running in 20,000 sqft space with total plot size of 30,000 sqft.

Raw Material (Paper rolls , Adhesive) is stored in about 7000 sqft area whereas FG is stored in 4000 sqft area.

OBJECTIVE

To run a semi automatic unit in same premises which will cater E flute Cartons, Offset Prtd cartons to customers.

Presently, the semi automatic unit is running in rented shed of 10000 sq ft costing rent of Rs. 6 Lacs per annum.

Problem Faced

Space Constraint

High level Inventory of both RM & FG

Higher Bank Interest Payment

Extra rent paid for Semi Automatic Unit

PLANNING

We have started putting Inward date of RM on paper rolls as well as in stock register so that we can know that for how many days, the RM was kept in our godown.

Identify Paper rolls lying for more than 1 month, 2 months & so on Identify FG lying for more than 15 days

Identify Paper rolls who become obsolete & cannot be used anywhere & anyway in Factory

Identify FG which is rejected & returned by customer or rejected during processing in our factory

OBSERVATIONS

10% of RM was lying for more than 2 months , while 25% was lying for 1 -2 months.

30% FG was in stock for more than 15 days

10% paper rolls were found obsolete , which cannot be used anywhere in our unit

10% FG was found uncalled/rejected but lying in FG Godown.

About 10% space of RM Godown was occupied by Loose reels.

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INDUSTRIES



High-Speed Rotary Sheet Cutter

(PLS-01)

Size - 44" / 54" / 64"

Flat Bed Die Punching Machine

(PLF-99)

Size - 50"x80" / 60"x90"

70"x120" / 80"x130"



Flexo Printing Machine

(PLF-02)

Size - 50" x 60" / 52" x 72"

60" x 90" / 70" x 100"

Side Flap Gluing Machine

(PFG-11)

Size - 75" / 85" / 95" / 105" / 110" / 120" / 130"



We Can Offer

- Eccentric Slotter Machine
- 4-bar Rotary Creasing & Cutting Machine
- Double colour printing machine
- Box Stitching Machine Angular / Straight

For further information please contact :
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Due to continuous innovation, specifications are subject to change.

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Email : enquiry@packlinkindustries.com • Website : www.packlinkindustries.com

ACTION TAKEN

We have prepared a list of rolls with respect to size, gsm, bf & Mill Name.

Then, analysed it whether it can be further used for the same item for which it is bought. When will we get order for same item next time? Whether it can be used for other items while maintaining customer's specifications. Which is more economical.

ACTION TAKEN

We have started buying 12,14 & 16 bf material from local mills by giving them our daily requirement. We have also started giving orders in gap of 50 mm & not in weight but no. of reels. We have also started buying full deckle rolls from local mills so that we can slit them as per our requirement time to time. Calling these material from local mill saved transportation cost too as in the vicinity of paper mills many of our customers are located. After unloading from customer end same vehicle carry back the paper rolls

ACTION TAKEN

We sent FG List to every customer & ask them to give their requirement for next 3 days everyday.

We made a list of non moving RM & circulated it to fellow corrugators for selling it.

The obsolete FG was used in making Plates, Partitions & Pads. Rest were sold to second hand Carton retailer.

ACTION TAKEN

All loose reels were marked with in 4 inch, 50 gsm, variation & get rewinded as one reel on our slitter rewinder.

The obsolete rolls (small deckle) were used by purchasing fresh paper rolls of balance size of the deckle required. Suppose if you are having one ton 25" roll lying with you unused & if you have order of 40" size in hand of same variety.

Call for 15" paper roll so that you can add 15" with 25" & your bad inventory will come in use. Similarly, cutting of bigger rolls to smaller one to make pair with other obsolete rolls can also be used.

RESULT

The Paper Roll Inventory has come down by 45%.

Our FG Stock is now only for next 5 days.

We have sold about 10% non moving inventory to other fellow corrugators.

All obsolete FG is either used in making Plates, Partitions, Pads or sold to second hand carton retailer or other smaller customers.

About 80% of loose reels were rewinded & slitted for making big reels.

FINAL OUTCOME

About 3000 sqft area in RM Godown is freed.

About 1000 Sqft area in freed in FG Godown area.

Due to less Inventory of RM & FG, about 40% CC loan limit remained unutilised & interest cost has been saved.

A semi Automatic Unit is installed in same premises to make E Flute cartons & Offset Prtd Cartons which cannot be made on an automatic unit. Additional capacity of 500 MT annually added in the same premises.

FUTURE PLANS

We have purchased 1 No. fork lift from the saving of less inventory & interest cost. The paper rolls will be kept vertical & hence further space will be saved.

Further, Additional spare capacity to convert 600 MT annually in the same premises. In all total spare capacity increased by 1100 MT with in one year at cost saving of approx Rs. 12 Lacs per annum. The Inventory was used in common with little increase in Duplex Stock.

Mr. Amit Jain expresses his Sincere gratitude to:

Shri Pankaj Shah, Chairman-Technical for giving him a chance to share his ideas with fellow corrugators.

Shri Ram Kumar Sunkara, Co-Chairman, Technical to inspire him to carry out inventory control

His Elder brothers, Neeraj & Vineet who always guide him to do innovative work and worked on this project.

This is a presentation made by Mr. Amit Jain, during a Technical Session at the 42nd FCBM Conference held at Chennai, hosted by SICBMA.

This is a case study done at Girnar Corrugators Pvt. Ltd at Indore.

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H-180 Single Facer

In keeping with the tradition of offering effective solutions to today's corrugated box manufacturers, MICRO designs and builds machines that are competent, competitive and cost effective.

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Replacement of Wooden Packaging



P. S. R. Prasad

Managing Director, Jayaraj Fortune Packaging Pvt. Ltd.
Guntour, Andhra Pradesh

Wooden Packaging – Advantages

- Suitable for Heavy Components packing.
- Can be made at site with minimum tools.
- Water proof.
- Suitable for Small Quantities.
- Withstands multiple handlings.
- Inner components position can be arrested by fixing with bolts or nails.
- Provision for forklift handling is part of packaging.

Wooden Packaging - Disadvantages

- In consistency in raw material source in terms of availability and quality.
- Prone to pest.
- Chemical Treatment or Heat Treatment must for export wooden packaging.
- Storage space for empty boxes.
- Transportation of empty boxes.
- Wood is brittle in nature. Under high impact loads, packaging gets broken.
- Mostly over designed.
- Product Packaging house becomes a wood workshop.
- No 'Economies of Scale' in production and consumption of wooden packaging.
- Expensive to Corrugated Packaging.
- Not Eco-Friendly.
- Not 100% Recyclable.

Why from Wood to Corrugated?

- Cost.
- Reduction in 'Carbon Foot Print'.
- Good 'Economies of Scale'.
- Ease of Transportation and Storage.
- Clean packing house.
- Less work force for product packing.
- No certifications for export packaging.
- Tamper evident. Completely seals the product inside.
- Optimum design. Light in weight. Eco-Friendly.
- 100% Recyclable. Good Printing for Branding.
- Good Cushioning. Non-abrasive. Shorter lead time.

Limitations of Corrugated

- For heavy components, need a base pallet.
- Not suitable for small quantities.
- Need special equipment for manufacturing.
- Not suitable for outdoor storage.
- Material properties are not equal in all directions.

Box for Jumbo Bag – Case Study

- Jumbo Bag is a Flexible Intermediate Bulk Container (FIBC)
- Made of High Tenacity Polypropylene (PP), HDPE or Polyamide material and is UV stabilized.
- General Capacities of these bags range from 250kg to 2000kg depending on bulk density of the material inside the bag.

Cont. on - 31

Put the Seal of Quality on Your Packaging

Trust Linux



Comprehensive range of Testing Equipments for measuring :

- Bursting Strength
- Box Compression
- Edge Crush
- Ring Crush
- GSM / Substance
- Puncture Resistance
- Water Absorption (Cobb)
- Moisture Content
- Tensile Strength
- Rub Proofness
- Tear Strength
- Stiffness Strength
- Caliper Thickness
- Drop Resistance
- Vibration Resistance

Testing is an integral part of Quality and Quality Assurance that of success.

In a competitive world, it is the Quality Assurance that sustains business and wins customers.

Participating as your partners in your endeavour is Linux – makers of Quality Testing Equipments.

Linux Testing Equipments, incorporating the latest innovative technologies, help you to assess the properties of raw materials as well as finished packages.

In a short span of twelve years, Linux has earned the trust and confidence of leading manufacturers and users of packaging, across India.

Your needs for package testing equipments will continue to drive our initiative and product innovations.

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Super Model



Micro Print Model



ECO Digi Model



Double Head Model

Bursting Strength Testers

Bursting Strength is a widely used measure of resistance to rupture in various packaging materials like Paper, Paperboard, Corrugated board, Nonwovens, Textiles, Geotextiles, Films, Tissues etc.

Models :

- Standard ● Super ● Double head ● Eco Digi
- Micro digital ● Micro print ● Micro PC
- Available in two measuring ranges : 0-5 to 0-75 kg/cm².



GSM (Substance) Tester

Two Models :

- Electronic model with 5 sample size measurement
- Manual model with 2 scales of 0-250 & 0-500 gsm.



Gann Moisture Meter

Hand held Digital Moisture Meter imported from Germany for instant moisture results.

Compression Tester



Four Models :

- Micro Print PC
- Micro Print (Microprocessor based Model with Printer Port)
- Micro Digital
- Touch Screen Display Micro PC

Winner of Pacmachine 2008 Award

Compression Strength of a Box, Container, Tube, Drum, Bottle etc., gives a reliable indication of the overall performance of the package - besides indicating its ability to resist external compression loads during transit and storage.

Linux Compression Tester – MicroPC Touch Screen Model is an Indian Industry First and can be used for testing of Packages for stacking load, transit load bearing capacity.



Winner of Pacmachine 2006 Award

Crush Tester

For testing paper, corrugated board and its components as well as performing compression tests on small packages.

Suitable to measure : Flat Crush Test (FCT), Ring Crush Test (RCT), Edgewise Crush Test (ECT), Pin Adhesion Test (PAT), Concora Medium Test (CMT) and Corrugating Crush Test (CCT).



Rub Tester

To measure the rub proofness of prints on paper or board. Can also be used to measure colour transfer from printed or coated materials during rubbing.



Drop Tester

Determines the performance of a packed box during handling and transportation.



Tensile Tester

Suitable to test tensile strength of paper, films, foils, rubber etc. Available in capacities ranging from 1gm. to 1000kgs. Various tests like tensile, adhesion, peel (90/180 degree) can be performed.



Tear Tester

Measures the force required to tear multiple sheets of paper



Puncture Resistance Tester

Five different scales to analyze materials of variable thickness.



Cobb Tester

Determining water absorbiveness of papers, boards etc.



Vibration Tester

Simulates the conditions that occur on a package during transit. Gives an indication of the ability of the package to resist such transit stresses and protect packed products.

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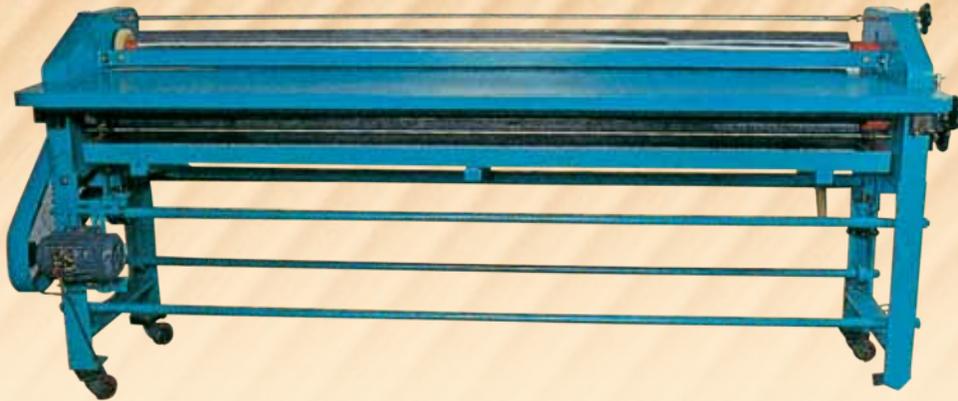
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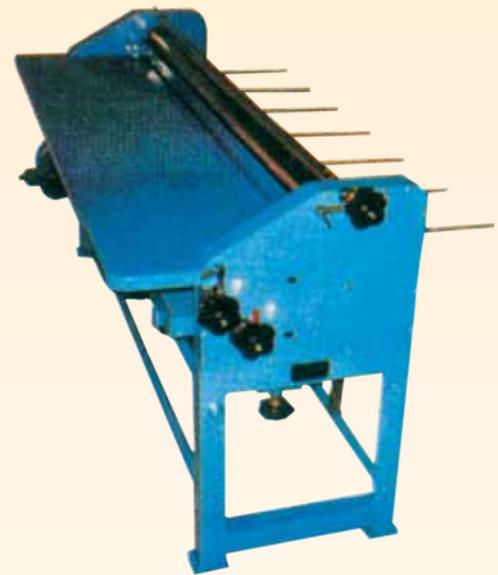
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FEATURES

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- Gum and pressure-rollers automatically set on the other side of the machine. No need to set the roller on the other side.
- Gum and pressure rollers can be set in microns as desired.
- Saves time and gum and the final product dries soon because of the minimum gum application
- All rollers are balanced, ground and hard chrome plated regulating life of the machine
- All rollers are fitted with ball bearings resulting in smooth running
- Rubber seals provided on both sides of the rollers for protection of ball bearings from water while cleaning the machine after the end of shift.
- Robust construction and excellent finish.
- Available in sizes of 65", 75" and 85". Other sizes as required can be supplied on request.



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Box for Jumbo Bag – Case Study

Handling of Jumbo Bag can be done in 2 ways:

- 1) By holding hooks at top.
- 2) By Palletizing.

Jumbo Bags are stacked in following ways:

Without pallets.

With pallet for each bag.

With pallet for each stack



Box for Jumbo Bag – Case Study

Problems with Jumbo bags:

Long storage times in stacks results in lumps formation in bottom bag.

Loose fitting inside container would result in unstable stacks.

Tight fitting inside container would result in problems at the time of unloading.

Flexible and bulging nature of jumbo bags will through unforeseen challenges.

Box for Jumbo Bag – Case Study

Customer: A pharmaceutical company.

Product packed: Intermediate bulk drug.

Primary packing: Jumbo bag.

Packaging Details:

Jumbo bag of 1 cubic meter volume is used.

Bulk density of material is 0.6.

Weight of material in one bag: 600kg.

Size: 1115mm x 1115mm x 900mm.

Problem faced:

Lumps formation under long storage in 1+2 stack.

Airlines don't accept jumbo bags as they are flexible.

Rigid packing must for air cargo.

Box for Jumbo Bag – Case Study

Immediate solution:

Pack jumbo bag into wooden box.

Challenges with wooden box:

Too heavy. Hence very expensive to airlift.

Packing house is becoming a wood workshop from Pharmaceutical company.

As such wooden packing is expensive.

Weight of wooden crate excluding pallet is 70kg.

Box for Jumbo Bag – Case Study

Alternative proposed:

Octagonal Corrugated Bin

Tare weight : 30kg.

Compression : 4500kg.



| | Wooden Packing | Octagonal Corrugated Bin |
|------------------------------|----------------|--------------------------|
| Tare Weight | 70 kg | 30 kg |
| Cost of Box | Rs. 4500 | Rs. 2000 |
| Air freight (Rs. 250 per kg) | Rs. 17500 | Rs. 7500 |
| Total Cost | Rs. 22000 | Rs. 9500 |

Box for Jumbo Bag – Case Study

Saving: Rs. 12500

No pest treatment certifications.

Short lead time for packing materials.

Less inventory storage space.

Less labour.

Clean packing house.



P. S. R. Prasad is a Mechanical Engineer with Masters Degree from IIT, Madras in industrial Management with a vast experience of working with Singapore Airlines Limited and Tata Consultancy Services .He has experience in information systems design, development, integration and commissioning.

This is a presentation made at a Technical Session conducted during 42nd FCBM Conference at Chennai, hosted by SICBMA.



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Better bonds make better board

Start by understanding the different time-temperature-pressure demands of the single facer and the double backer

The ultimate job of corrugating adhesive is to create a proper bond in the board being produced. This is achieved by a combination of time, temperature, and pressure. These three factors combine differently on the single facer than they do on the double backer.

The single facer

When making single face web at the single facer, even at moderate speeds the papers don't spend much time inside the machine, so there's not a lot of time, but there is plenty of temperature and pressure.

Less time: Time is the commodity in short supply. The bond has to occur in a fraction of a second because the time from when the adhesive is applied to medium and the moment the single face web is released from the nip and rushed up the bridge is very short; at higher speeds, the papers make contact for as little as 3 milliseconds.

Higher temperatures: Once the medium enters the corrugating labyrinth it has full contact with heated metal on both sides. Then, as it travels around to the nip point between the lower corrugating roll and the pressure roll, it is held against that roll by either vacuum or positive pressure (or metal fingers in older machines). This means that we can apply enough heat to the paper just before the bond. The medium was also preheated by other steam vessels on its way to the single facer and the liner is preheated by several steam vessels (peanut rolls for example) and has contact with the heated pressure roll inside the nip.

Greater pressure: On the single facer we can apply almost unlimited pressure; a pressure-roll type single facer can generate enough pressure to literally cut both papers. Newer single facer technology replaces the pressure roll with a belt.

The belt exerts less pressure at the nip but because the belt has contact with a portion of the roll (as opposed to the single point nip created by the pressure roll), the pressure is applied for a longer period of time.

The ability to make the bond with plenty of pressure and heat places fewer demands on the adhesive; because of this we are able to run adhesive formulations with lower solids and a higher gel temp.

The double backer

At the double backer we are limited by the amount of pressure and heat we can apply, so we have to make up for it with time.



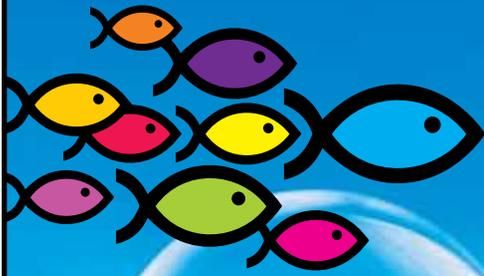
Rex Woodville - Price
HarperLove

Pressure limitations: The amount of pressure (or down-force) available here is limited by the crush resistance of the board. Based on average Flat Crush Test results, we know we are limited to about 30 PSI, maybe even less with lighter mediums. Consequently, if we were to apply any more down-force we would crush the board and destroy its mechanical integrity, particularly its ECT value. This is in marked contrast with the single facers' almost unlimited ability to apply pressure.



(On the single facer, the time from when the adhesive is applied to medium and the moment the single face web is released from the nip and rushed up the bridge is very short; at higher speeds, the papers make contact for as little as 3 milliseconds.)





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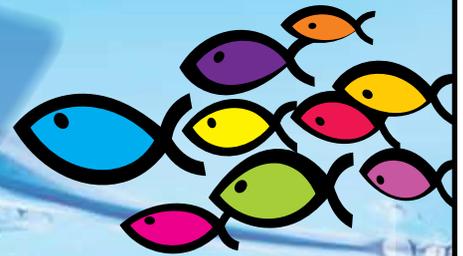


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Temperature limitations: At the double backer, we are able to heat the board only from one side since the hotplates touch only the double face liner. When running double wall board, heat transfer is further hindered by the need to transfer thermal energy through several layers of paper and air, which are both fairly good insulators. One of the most challenging bonds in the corrugating world, the bond between the webs on double wall, must receive all its heat from the hotplates, at the same time the bottom web is competing for this heat and acting as an insulating barrier to heat transfer.

More time compensates: Given these temperature and pressure constraints, machine manufacturers compensate by making the double backer longer and allowing the board to spend more time being heated while being firmly held together. In the typical modern corrugator, the heating and traction sections have a combined length of about 70 feet. At a run speed of 750 fpm, this translates to about 5.6 seconds of transit time with the

bond held under pressure. While this is several orders of magnitude greater than the few milliseconds it spent on the single facer at the same speed, it is still only a few seconds. Most corrugators are speed limited at the double backer, especially on double wall board.

These limitations place higher demands on the adhesive, so in our quest to increase machine speeds we often employ an adhesive with a lower gel temperature and tend to use slightly more solids.

A good bond is at least as strong as the paper

In a typical box, paper is by far the most expensive raw material, accounting for more than 80 percent of the cost. Adhesive, on the other hand, represents only a small percentage of the total cost, so it makes good economic sense to maximize the potential of the most costly resource.

With this in mind, we strive to create a bond that is as strong as the paper itself. We want the adhesive-paper interface to be

stronger than the internal forces holding the paper fibers together. Whether we are achieving this or not can usually be determined by that classic test, done at every stacker around the world; pulling the board apart and checking for fiber tear.

Rex Woodville is International Technical Representative of HarperLove Adhesive Corporation, USA.

He has been almost 14 years with HarperLove and has valuable prior industry experience as Project Engineer for Interfic, Sales Engineer for Goettsch, and Packaging Maintenance Engineer for Chiquita's Packaging Division.

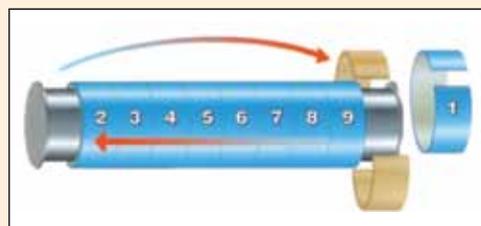
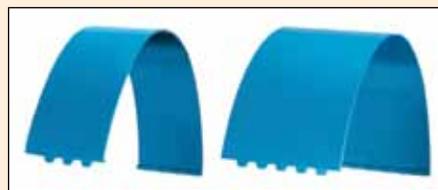
He can be contacted on email: Rex@HarperLove.com

Source: Corrugating Newsletter from HarperLove Adhesives Corporation.



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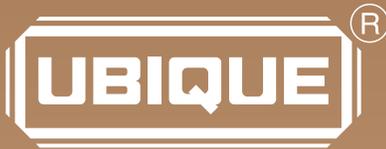
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- Manual Clamping

Crush Tester



Useful for determining Edge Crush, Flat Crush, Pin (Ply) Adhesion of Corrugated Board and Ring Crush and CMT of Paper and Paperboard.

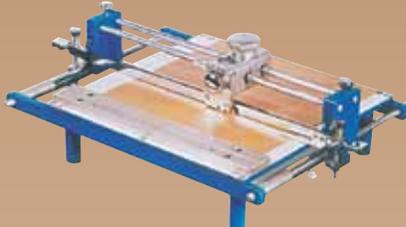
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| <p>Puncture Resistance Tester</p> <p>Gives reliable indication to evaluate fabrication factors along with material values in a composite fashion.</p> <p>Available in: UPR - Analogue Type UCR - DIGITAL Microprocessor based Digital Model</p>  | <p>COBB Tester</p> <p>Determines water absorption/penetration (cobb value) of paper and paperboard as specified in standards.</p> <p>Model: UCOB</p>  | <p>Substance Indicator</p> <p>Measures directly substance of paper, paperboard and other materials in terms of G.S.M.</p>  |
| <p>Caliper Thickness Gauge</p> <p>Measures Caliper thickness of variety of materials.</p> <p>Available: UCTG01 & UCTG01-D With 10mm capacity and least count of 0.01 mm UCTG001 & UCTG001-D With 1mm capacity and least count of 0.001 mm UCTG002-D With 20mm capacity and least count of 0.001 mm</p>  | <p>Internal Ply Bond Tester</p> <p>To Determine the Internal Bond Strength of Paper, Board and Laminates</p> <p>Model: UIBST Microprocessor based Digital Model supplied with Sample Preparation Station as per the standards.</p>  | <p>Sample Cutter</p> <p>Model: USC for preparing various paper samples for GSM, RCT etc...</p>  |

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Passionate with **The Corrugator**

The Corrugator has created many milestones in its long journey of over 20 year featured here, is an interesting photograph of all the issues – collected and presumed over the years by none other than Mr. Dharmendra Pandya, a creative box maker and previous Editor of The Corrugator. Indeed a prized collection!





Western India Corrugated Box Manufacturers' Association

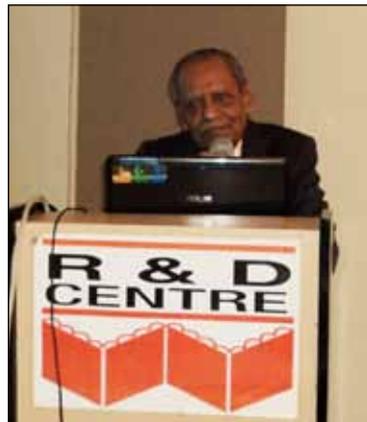
35th Certificate Course in Corrugated Packaging

WICMA R & D Centre organized 35th Certificate Course in Corrugated Packaging – Semi Automatic Process at WICMA Auditorium, Mumbai from 09.02.2015 to 14.02.2015.

Mr. P. S. Shah, President, FCBM was the chief guest at the inauguration.

15 students attended the course. Students from places like, Mumbai, Nagpur, Pune, Kolhapur, Nasik, Delhi, Hyderabad, West Bengal attended the course.

Two outstanding students i.e. Mr. Ashwin P. V. from Shreerang Agencies, Mumbai and Mr. Peeyush Agarwal from Suraj Enterprises, West Bengal will be awarded 'Shri Mansukhbhai Seth – WICMA Education Award' and 'Shri G.B. Chamaria – WICMA Education Award' respectively for outstanding performances.



Seminar + AGM of Marathwada Division

WICMA, Marathwada Division held a half-day seminar on "How to Multiply your Business" on 8th March 2015.

Renowned speakers, Shri Chakor Gandhi was the speaker. The division also held their AGM later in the evening on the same day where Shri Dushyant Patil was elected as the new Convener of the Marathwada Division.



The 2nd FCBM Managing Committee Meeting at Noida

UPCBMA organized a Technical seminar on March 13, 2015 at Hotel Radisson Blu Greater Noida on the eve of the 2nd M.C.Meeting of FCBM which was also hosted by them. The seminar had two sessions and was attended by over 125 delegates from across the country.

In the first session Mr. Sanjay Gupta an industry expert spoke on innovations in semi-automatic machinery and its impact on cost of production. The session was informative and well received by the audience who raised many questions.

In the second session Mr. Ram Kumar Sunkara, Chairman R&D Committee FCBM compared Bursting strength V/S compression strength in box testing methods and also discussed the merits of costing of boxes based on wt. of paper or surface area of box. His address laced with wit and humour and the presentation held the listeners spell bound. A quiz conducted on costing brought out the reality of wafer thin margins being earned by the industry.

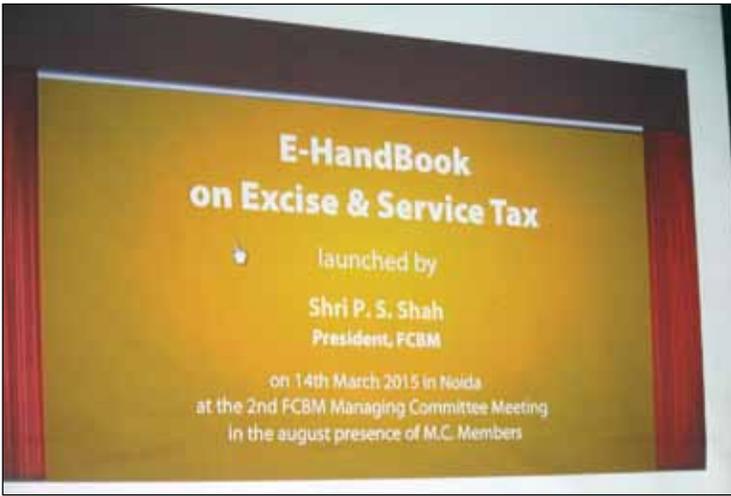
President FCBM Mr. P.S.Shah congratulated Team UPCBMA led by President Mr. K.P. Singh for the excellent arrangements.

The session was followed by an enjoyable musical evening. Two of the members M/s Ajay Malhotra and R.Suresh sang popular songs which left the professional singers applauding.

The 2nd FCBM MC meeting was held on 14th March 2015 at Hotel Radisson Blu, Grater Noida. Meetings of the various FCBM sub-committees were held on the previous day i.e. 13th March 2015. The Managing committee discussed various issues concerning the Corrugated Industry. The implications of the Union Budget 2015 was also discussed.

The President launched the Handbook on Excise and Service Tax as relevant to the Corrugated Board Box Industry for 2015". The ebook will be circulated among all members. The hospitality and the arrangements made by the Host Association was appreciated by all the MC Members.







Kerala Corrugated Box Manufacturers' Association

KERALA CBMA CONVENES 35th AGB MEET AND TECHNICAL SEMINAR

Kerala Corrugated Box Manufacturers' Association organized its 35th annual general body meeting on 7th March, 2015 at Hotel International, Ernakulam. President, Mr. Xavier Jose in his opening remarks mentioned that the Packaging industry is passing through a difficult period due to the general slackness and frequent price increase of all commodities.

He said "We have to find ways and means to overcome the present predicament. More attention has to be bestowed on indigenous market with new patterns and designs of packaging materials. The conventional method of packing system is slowly changing to new methods."

"We have to make efforts to capture the retail ready pack market in our state and if we succeed in our attempt there will be enormous orders from these sectors."

Secretary, Mr. Pratish presented the minutes of the previous meeting and the annual report of the Association and the Treasurer, Mr. Bejoy Cyriac presented the audited accounts and both were adopted by the house.

Thereafter Mr. R. Suresh, Chairman of National conference of the FCBM spoke on the arrangements to be made for the conference and he announced the list of various committees for the conference. He stated this was the first time in the history of 34 years service, Kerala CBMA got the opportunity to host the conference and he sought full support from all the members to make the Conference a grand success.



Technical Seminar

Along with the AGB meeting, a technical seminar was also organised. There were three Sessions in the seminar. The first one was on the subject of "How to save energy" by Sri Shaji Sebastian, Energy Auditor and the second one was on "Present Trends, problems & solutions in Corrugated industry" by Sri I. A. Peter, Paper Technologist and the third one was on "Specialised machineries for corrugated industry" by Mr. D. Venkatesan of V. J. Trading, Chennai. Energy Auditor, Mr. Shaji Sebastian made a brief presentation as to how to save the energy both in the factory and the office. It was a very useful presentation to the corrugators. He also described on the new regulations in the electricity act prevalent in the State. The presentation was followed with an interaction forum. The meeting and the seminar was well attended by all the members. The meeting was followed with dinner.





APPEAL TO PAPER MILLS



Dear Sir,

We treasure our continued long term relations. Your material forms a major component of our finished product.

The Paper Mills Coordination Committee makes an appeal on behalf of Federation of Corrugated Box Manufacturers (FCBM) to request your goodself for issuance of test certificate along with all consignments. As you are aware, we - The corrugator fraternity is subject to regular audits by our customers quality assurance department. We are thereby, required to produce a test certificate for all incoming materials during the audit. Moreover, we are required to produce the same during our ISO audits. It is thus imperative on our part to produce test certificates received from our supplier to the various audit agencies.

Minimum test parameters desired by the auditors during the audit include the following:

| | | | |
|-------------------------|------------------------|----------------------------------|-----------------------------|
| 1. BS of Paper | 2. BF of Paper | 3. RCT of Paper | 4. Moisture in Paper |
| 5. Cobb in Paper | 6. GSM of Paper | 7. Linear meters in paper | |

Today the world has become a small local village. We face day in day out stiff competition from foreign suppliers for supply of our materials to our customers. We need to constantly update and upgrade ourselves to counter the stiff competition provided by them. As already the competition with in the local area is heavy, the foreign competition has further added to our woes.

Paper being a major component of our raw materials, we hereby request you to reinforce the joint fostering of our growth by participating in our endeavor of supplying quality material to our customer with adequate documentation. We are already supplying them quality material with your support. It is now only the documentation part where we really need to pull our socks up. We therefore, request you to support your customers (box manufacturers) by issuing test certificates with all consignments detailing their above requirements.

We request you for issuance of the test certificate in any format comfortable to you. I am sure our joint efforts will definitely raise the bar for our packaging industry.

We sincerely appreciate support given by several paper mills by issuing TEST CERTIFICATES with every consignment. We wish to inform our members about the paper mills who are issuing test certificate. We also intend to acknowledge their contribution by giving wide publicity internally. We appeal to all the paper mills who are issuing test certificates to send a proforma test Certificate to us through.

The FCBM Secretariat on admin@fcbm.org

Your positive action and response in this regard shall be highly appreciated.

Regards,

FCBM PMCC

Sandeep Agrawal

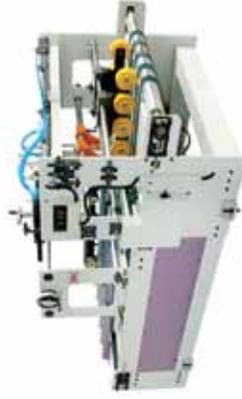
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| Min. Sheet Size | 300 x 900 mm | 300 x 900 mm | 300 x 900 mm |
| M/C Dimension | 2,800 x 12,000 mm | 3,100 x 13,000 mm | 3,500 x 13,000 mm |
| Max. Belt Speed | | 180 M/Min | |
| Max. Stitching Speed | | 85 Sheets/Min | |
| Main Power | | 15 Kw | |
| Sheet Thickness | | Corrugated Board 3 – 10 mm | |

FCBM Publications

P. No. Title of Publication

- 3:90 Corrugated Box manufacturers' Practical Standards – Standard Test Method for Bursting Strength of Corrugated fibre board.
- 4:90 Proceedings – Technical Sessions of Conference 1982 – 1990
- 6:91 Corrugated Box manufacturers' Practical Standards – Standard Test Method for Puncture Resistance of Corrugated fibre board.
- 7:91 Corrugated Box manufacturers' Practical Standards – Nomenclature: A Glossary of Terms related to the Corrugated Packaging Industry
- 8:92 Corrugated Box manufacturers' Practical Standards – Standard Test Method for Water Absorption (COBB Method)
- 9:92 Technical Information Booklet – Variable Speed - Drives for Corrugated Machines
- 10:93 Corrugated Box manufacturers' Practical Standards – Standard Test Method for Grammage of kraft paper and Corrugated fibre board
- 11:94 Technical Information Booklet – Adhesives
- 12:94 Technical Information Booklet – Box Styles
- 14:96 Corrugated Box manufacturers' Practical Standards – Standard Test Method for Compression Strength of Corrugated Box
- 15:97 Corrugated Packaging Brochure
- 16:97 Technical Information Booklet – Industry Survey - 1996
- 17:97 Operational Manual ACS (ver 4.2) (Account Computing System)
- 18:98 Technical Information Booklet – Industry Survey - 1997
- 19:98 Corrugated Box manufacturers' Practical Standards – Standard Test Method for Ring Crush resistance of Paper and paper board.
- 20:99 Technical Information Booklet - Industry Survey – 1998
- 21:99 Corrugated Box manufacturers' Practical Standards – Standard Test Method for Moisture Content in Paper and paper board.
- 22:00 Technical Information Booklet – Industry Survey – 1999
- R-1:00 Corrugated Box manufacturers' Practical Standards – Box Dimensions, styles, Mfrs. Joints
- 23:02 Technical Information Booklet – Industry Survey – 2001
- 24:02 Project Report (Full Version)
- i) A study on the Important Properties of Kraft paper at Different Climatic Conditions
- ii) A study on the influence of Properties of Kraft paper on the Properties of Corrugated Board and Box at various climatic conditions
- 25:02 Project Report (Condensed Version)
- 26:03 Technical Information Booklet – Industry Survey – 2002
- 27:03 Proceedings – Technical Sessions of 31st Conference 2002, Mumbai
- 28:03 Proceedings – Technical Sessions of 30th Conference 2001, Chennai
- 29:04 Corrugated Box manufacturers' Practical Standards – Standard Test Method for Thickness of Board
- 30:04 Technical Information Booklet – Industry Survey – 2003
- 31:05 Proceedings – Technical Sessions of 32nd Conference 2003
- 32:05 Proceedings – Technical Sessions of 33rd Conference 2004
- 33:05 Technical Information Booklet – Industry Survey – 2004
- 34:06 Proceedings – Technical Sessions of 34th Conference 2005, Bangalore
- 35:06 Technical Information Booklet – Industry Survey – 2005
- 36:06 Technical Information Booklet – Units of Measurement and Conversion Factor
- 37:06 Technical Information Booklet – International Rules for Corrugated Board and Cases
- 38:07 Proceedings – Technical Sessions of 35th Conference 2006
- 39:07 Technical Information Booklet – Restricted Heavy Metals Specification in packaging Material
- 40:07 Technical Information Booklet – Guidelines for Designing Heat Transfer System using Heat Transfer Fluids
- 41:08 Proceedings – Technical Sessions of 36th Conference 2007
- 42:10 Proceedings – Technical Sessions of 38th Conference 2009
- 43:11 Proceedings – Technical Sessions of 39th Conference 2010 – Interactive DVD
- 44:11 Technical Information Booklet – Industry Survey – 2010
- 45:12 Proceedings – Technical Sessions of 40th Conference 2011 – Interactive DVD
- 46:12 Scoring allowances and Blank size
- 47:13 FCBM Members' Directory 2013
- 47:14 Technical Information Booklet – Tolerances for Regular slotted containers (RSC)

For further details contact:

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The Magic Flute

Corrugated board resembles a sandwich, and likewise, is defined by what's in the middle.

Flutes, the wavy arches between liners, put the corrugated in corrugated board, so much so that corrugated board is specified by flute. Borrowing from the GEICO commercials, “Everybody knows that,” but as those commercials teach, there’s always something else to be learned. Familiarity doesn’t always breed contempt; sometimes it breeds complacency. It’s not unusual for a corrugated box’s specification to go unchanged for years on end. Implicit is the assumption that circumstances also have gone unchanged—a fallacy in thinking.

The Alphabet Song

First came A-flute, later followed by others, in alphabetical sequence. The variety of flutes bespeak a variety of properties. The greater the profile (height) of a flute the greater the stacking strength and cushioning. The greater the count (number of flutes per linear measure) the greater the flat-crush resistance. C-flute is the most utilized. C might as well stand for Compromise because C-flute is shorter than A-flute but taller than B-flute; and it has a count greater than A-flute has but less than B-flute has. It’s best to discuss flutes in comparative terms rather than to assign hard numbers to their profiles and counts. That’s because of differences in the corrugating process across different converters.

D-flute, for all intents and purposes, is not used in the U.S. E-flute and F-flute complete the list of the most popular flutes, consecutively smaller in profiles and greater in counts; however, as industry proceeds along the alphabet, flutes need not automatically be of the miniature variety. How large flutes eventually get—or how small—will be limited only to advancements in corrugator machinery and the determination of customers to pursue custom-tailored solutions.

Putting it to the test

A Box Manufacturer’s Certificate (BMC) displays the rating from either of two tests: Mullen (a.k.a. Bursting Strength Test) or Edge Crush Test (ECT). Mullen measures the amount of force required to burst through the combined board. ECT measures the amount of force required to crush a sample of board that’s standing on edge. Both ratings are affected by the box’s flute (and liners), but before delving further into that association, some background on the tests might prove helpful.

Mullen is an indicator (albeit indirect) for a box’s ability to withstand rough conditions (handling and ride). Its incorporation into carrier regulations harkens back to times when roughness was regarded as the major hazard to packaged cargo. Better unitizing methods, increased use of mechanical

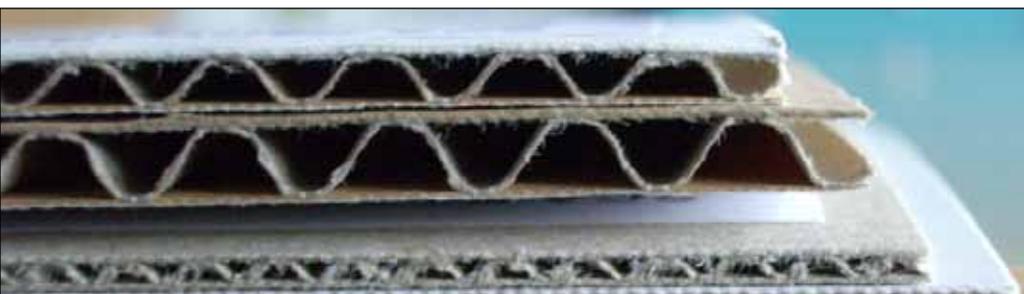


Sterling Anthony,
CPP, Contributing Editor

material-handling, and improved shock-absorbing systems on transportation equipment are some of the factors that have lessened concerns about roughness.



Over time, compression supplanted roughness as the greater concern, in recognition of conditions encountered not only during transportation but during storage as well, two legs of the journey wherein boxes need stacking strength against superimposed weight. But compression strength and stacking strength are not the same: the former measures the box’s ability to withstand a force momentarily before collapse; the latter measures the box’s ability to withstand a force throughout its time in the supply chain. So the ECT, too, is an indirect indicator; however, that hasn’t prevented it from becoming the more popular rating on a BMC.



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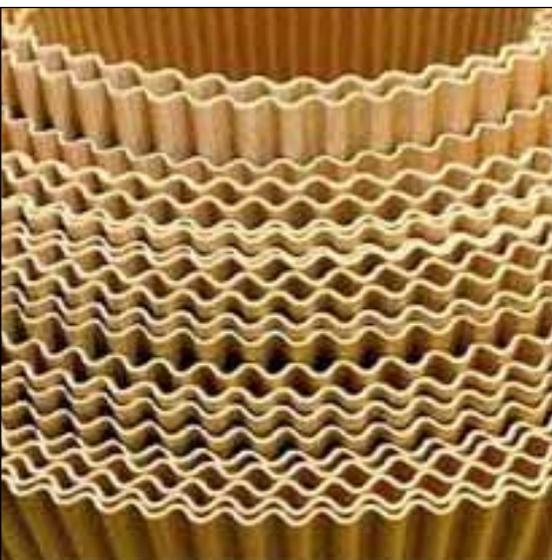
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As if the indirectness between a given test and the associated box property weren't challenge enough, there's no equivalence between the tests; therefore, one rating can't be converted into the other. All of this was less imposing back when a great many shippers defaulted to what became the industry workhorse: 200 lb. Mullen test C-flute. Here, C might as well stand for Convenient because it relieved shippers from a host of considerations. It came at the sacrifice of cost-effectiveness, as shippers placed a higher premium on under packaging than on over packaging; after all, having a margin-of-safety is only prudent, right? Not if one has little clue as to the size of that margin.



Now and forward, competitive advantage will accrue to shippers that continuously fine-tune the elements of the supply chain. Regulations mandate that the BMC displays a Mullen or ECT rating, but that doesn't make either test sacrosanct. Their relevance to a shipper resides in how accurately their ratings correlate to the repeated performance of the boxes throughout the supply chain.

Yes, the choice of flute affects the board's thickness, strength, and cushioning (printability, too); however, there's also the issue of composition. A shipper should not uncritically accept just any grade of paperboard, regardless of how "standard" its basis weight (i.e., pounds per

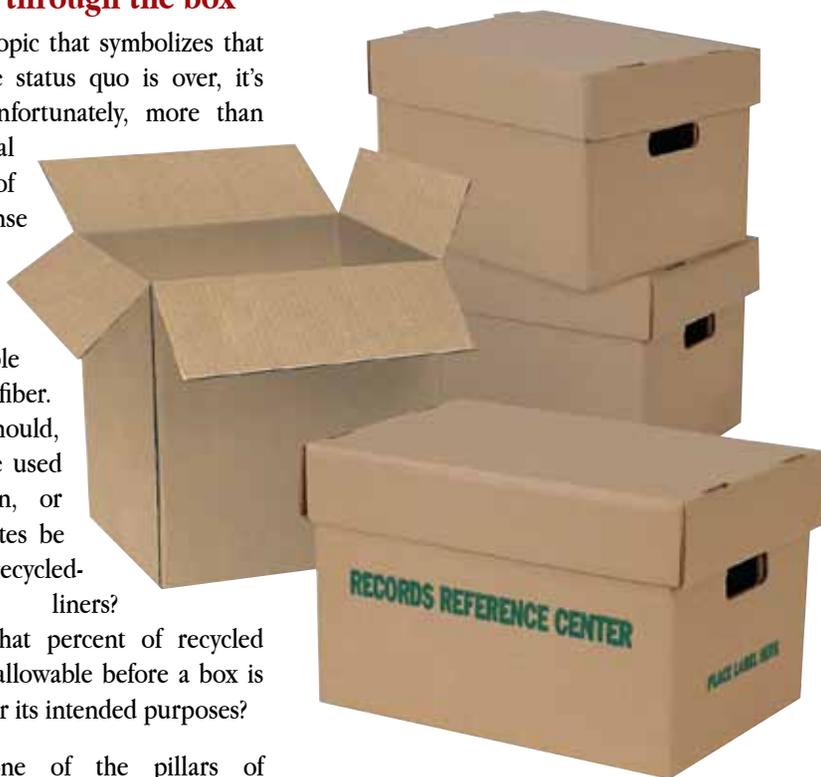
1000 sq. ft.) is said to be for flute formation. To do so is to forego the opportunity—better said, obligation—to make trade-offs between flute properties and liner properties for optimal results.

Thinking outside, inside, around, and through the box

If there is one topic that symbolizes that the reign of the status quo is over, it's sustainability; unfortunately, more than an incidental amount of industry's response lacks a systems approach. There's no better example than recycled fiber. When, or should, recycled fiber be used in flutes? When, or should, such flutes be teamed with recycled-fiber-containing liners? And, overall, what percent of recycled fiber content is allowable before a box is rendered unfit for its intended purposes?

Recycling is one of the pillars of sustainability; nonetheless, recycled fibers are shorter (and therefore weaker) than virgin fibers and the more times they are recycled the shorter they get. Additionally, to know that a box (or any of its components) is of a given recycled-fiber content does not impart knowledge about which kinds of recycled materials went into the mix, or how many times any of those materials had been recycled.

In the specification of anything made of corrugated board, decisions regarding flutes carry multiple ramifications. Giving those decisions their due consideration is the best way to end up playing the magic flute.



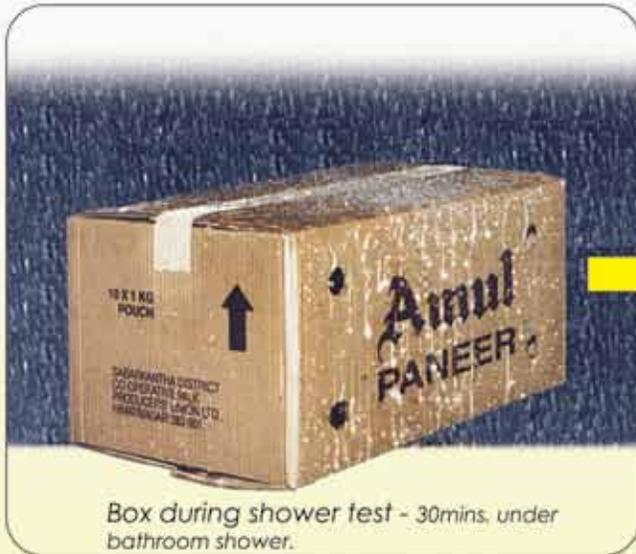
Sterling Anthony is a consultant, specializing in the strategic use of marketing, logistics, and packaging.

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| | Plain paper | coating - ml/sq. mtr. | | | |
|------------|-------------|-----------------------|-------|-------|-------|
| | | 10 | 15 | 20 | 30 |
| B/F | 14.9 | 16.5 | 17.6 | 18.2 | 19.47 |
| Cobb value | 35.0 | 19.0 | 15.5 | 8.5 | 2.5 |
| Gloss | 18.36 | 18.26 | 18.17 | 18.2 | 18.28 |
| GSM | 147.5 | 148.5 | 149.0 | 149.5 | 149.5 |

Applications:

- Water proofing of corrugated boxes for packing of :
 - Fruits, vegetables, flowers
 - Tea, ice cream, butter, milk powder, paneer, cheese, Dahi.
 - Bidi, cigarette, tobacco, soap
 - Garments, fabrics, yarns
 - Fish, meat and other frozen food exports
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Composite Boards Improve Efficiency of Carton Manufacturing

Counterplates are a critical component in the carton manufacturing process. They receive the creasing die in the process of creasing paperboard. For a long time, counterplate crease patterns were made piece-by-piece by gluing plastic strips onto a metal surface. But this technique was difficult and time-consuming, and the counterplates it yielded caused many problems in production.

So today, more and more manufacturers are machining creases into their counterplates. That's because machining is a faster and more precise way of creating complex crease patterns measuring less than 0.010' (.254mm) in depth.

In many cases, these crease patterns are cut into composite materials. There are a variety of composites on the market, but the best counterplate materials feature a strong fiberglass surface for increased durability and a paper core that leaves no unsightly marks when pressed against paperboard. And, because of their material properties, they reduce machining complications and speed up changeovers.

Counterplates in carton manufacturing

In carton manufacturing, the counterplate works in tandem with a metal die that presses crease patterns into paperboard sheets of various thicknesses. Later in the process, the sheets are folded along the creases to create cartons for a multitude of cartons, ranging from cereal boxes to corrugated cardboard boxes. One large carton or a number of smaller cartons can be made from a single sheet.

A paperboard web is pulled through a machine with a die on top and a counterplate on the bottom. The counterplate contains a crease pattern that matches a pattern of protrusions on the die. The die presses into the counterplate to create creases in the paperboard. The locations and dimensions of these creases

must be exact in order for the paperboard to fold perfectly into cartons later in the process.

Conventional counterplates are made of steel and plastic. A thin steel layer serves as a base onto which plastic strips are placed to create crease patterns. Each plastic strip must be cut into the right shape and then glued onto the steel surface.

The process of cutting, positioning, and gluing plastic strips must be very precise so that creases are the right depth for optimal folding. In addition, crease patterns must match up exactly with the carton printing on paperboard sheets that can be more than 50" (1270mm) wide. Always very labor-intensive, this process has grown ever more difficult, especially as smaller cartons are nested to maximize the yield of the web.

Once made, steel-and-plastic counterplates can cause more difficulties in the production process. Paperboard travels at high speeds through a press, introducing heat into the application and affecting the plastic strips. Fast-traveling paperboard also creates vacuum conditions that pull on the plastic strips. Sometimes, this combination of heat and vacuum causes one or more plastic corners to lift off the steel surface. This in turn can change the depth and location of creases produced when the die presses into the counterplate. In addition, lifted plastic corners can rip the paperboard web or throw it off-line as it is pulled through the press.



Alan Johnson
Plant Manager, Norplex - Micarta,
Postville, IA, USA



"Counterplates machined from rigid thermoset composite material maintain required thickness tolerances, ensuring a precise creasing process and improved product quality. (Photo courtesy of The Rayner Company.)"

An attractive alternative

Tired of the problems caused by conventional counterplates, many carton manufacturers have turned to an attractive alternative: counterplates machined out of rigid thermoset composite material. The process of routing creases into composite boards requires much less labor than the old technique of cutting and gluing plastic strips onto steel plates. In addition, the new process makes it much easier to create creases with precise dimensions, as well as the complex crease patterns that are common on today's cartons.



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During the carton manufacturing process, the composite counterplate will not delaminate when subjected to heat and vacuum conditions. The rigid board remains flat and dimensionally stable to keep the creasing process running smoothly for long periods of time, minimizing machine downtime.

Counterplate boards can be made of a number of different composites to optimize strength and durability. One popular option consists of a phenolic paper core with fiberglass epoxy surfaces on both sides. Strong and durable, the long-lasting fiberglass surface eliminates the need to frequently change out counterplate boards worn by the creasing process.

The phenolic paper core also plays an important role in the process. When the die presses into the counterplate, the paperboard makes contact with the core, which leaves a smooth finish on the creases in the carton material. In contrast, a fiberglass core material would leave an unsightly imprint on the paperboard creases from the weave of the fiberglass cloth.

In manufacturing machinery, composite counterplates are glued to metal plates. In many cases, removal of a counterplate is a difficult and messy process that involves scraping the board off the metal. If the board breaks or cracks, costly changeover time is increased. But some composite counterplate materials include a flexible film on the side that attaches to the metal bed. With the film layer between the metal



and composite surfaces, the counterplate peels intact right off the machine, thereby speeding up the changeover process.

Other options

There are other material options in addition to fiberglass epoxy composites, but they all have their drawbacks. For example, crease patterns could be cut into metal sheets that serve as counterplates. But metal counterplates would be much more expensive than their composite counterparts. In addition, the process of machining metal would create burrs on the surface of the creases. These rough edges would have to be removed in some sort of secondary operation. In contrast, machining of some composite materials produces smooth surfaces that require no secondary cleanup operations.

Creases can also be cut into thermoplastic materials, but most thermoplastics lack the strength required to make good counterplates. In addition, the heat produced in carton manufacturing could soften thermoplastics, causing changes in the crease patterns. High temperature thermoplastics might provide adequate heat resistance, but these expensive materials cost far more than thermoset composites.

Counterplates can be made of composite materials with a variety of different constructions and resin formulations. But many of these materials are not well suited to meet the challenges posed by counterplate applications. For example,

the highspeed motion of paperboard through a packaging machine produces heat that creates moisture on the surface of the counterplate. Phenolic resins tend to absorb moisture, so a counterplate with phenolic resin in its surface might swell slightly overtime. This swelling could change the shape of the crease cuts, which would adversely affect the creasing process. A more suitable choice for the counterplate surface is epoxy resin, which provides better moisture resistance than phenolic material.

Another important consideration is the strength of composite materials. Some are simply paper phenolic laminates that do not include fiberglass surfaces. These materials do not provide the strength and durability required by counterplate applications.

Conclusion

In many carton manufacturing processes, old-style steel-and-plastic counterplates have given way to composite counterplate boards. Fiberglass-based composite counterplates are strong yet easy to machine into the most complex crease patterns. Some fiberglass composites also offer moisture resistance, smooth machined finishes, and quick changeovers to improve both cartons and the processes that make them.

Alan Johnson, is the Director of Business Development at Norplex-Micarta. Alan may be contacted via telephone at 1-563-864-4275 or email at ajohnson@norplex-micarta.com. For more information on Norplex-Micarta, please visit the company's website at www.norplex-micarta.com.

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To be or not to be

After some thought, I chose the above signature for my article because it succinctly describe the situation the semi automatic corrugator industry in India feels they are in today. Some of them have talked to me and asked for direction. Before I write more on the subject, let me state that I do not subscribe to the nomenclatures of “semi automatic” and “automatic” in Indian context. I explain:

To me, the process that the “semi automatic” in India uses is “manual”. Excepting for mounting the paper reels on the reel stands, and running the paper thru the single facer, all the rest of the process is manual. Pasting, cutting, putting it to dry etc. Therefore, to me this is a manual process – and if one want to be a little bit more sophisticated “a non automatic” process.

What I call automatic is a process where the corrugator, as long as it runs (one shift or two shifts or three shifts) does not stop. There is a continuous feeding in of the paper thru splicers, order changes are effected automatically with the wastes being removed thru the rotary shear, slitter scorer and cutoffs and being adjusted automatically and the cut to length pieces moved away from the down stacker/s automatically by automated conveyors. The flute roll changes, if any, are planned in such a way that there is minimum down time, and/or done at the end/beginning of a shift.

Show me one factory in India which operates in this fashion, and I will call them happily “automatic”. And I will call them only automatic “Board” Plant. If they have to be called automatic board-cum-carton plant, then they need to automise further.

The ones, in between, are what I call “semi automatic”. They are, indeed, automatic in the sense that once the paper is loaded on the reel stand, and threaded into the single facer, the rest is automatic till the

dried board is cut to length and moved over to the stacker. But, since the machine has to stop and start for reel changes (order changes) and does not run continuously non stop throughout the working hours, I still do not bestow the title of automatic.

And certainly, the corrugators whose operations are mostly manual operation, how can we call them semi automatic?

Be that as it may, let us look at the strengths of these small corrugators:

They are conveniently located

Their minimum volume requirements are far less than the minimum quantity requirements of the large corrugators.

They are able to respond to emergency requirements.

There will always be demand for small volumes of irregular sizes, or medium volumes of regular sizes, which the large corrugators will not be able to service.

They have various printing options.

They will be happy to supply 2-ply rolls which are required by many customers



Anant Sarma

Partner, Jhalani Kamleh, New Delhi

which the automatic corrugators may not want to supply.

They can make 7-ply or 9-ply as well, as they are not limited by the investments required for a 7-ply automatic plant.

They can make cartons with offset printed top liners as they have the manpower to do lamination of the liner with the corrugated sheet.



Having much lesser capital investment, they are economically viable. They break even at very low volumes.

Can make any type of flutes, including micro flutes.

Their weaknesses are:

Weak and improper corrugation.

Inconsistent product

Most of the boards are warped; and print quality is inadequate.

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Since they service mostly small demand customers, they need to have a large number of customers to meet minimum return on investment; hence need for a relatively large sales and resource management team.

Inadequate attention to product/equipment improvement.

Highly labour oriented.

The weaknesses generally affect the volume growth prospects. However, the solution to this is not for all of them going into installing “automatic” corrugators. Because automatic corrugators have their own problems, and are not the only solution. These need to be understood before venturing into a far higher level of investment. Some of the points to be considered by the “semi automatic” corrugator before graduating into automatic corrugator are:

Can they justify the investments and have adequate volumes? I would like to caution here against going for cheaper equipment. These cheap equipments do not give the quality or the quantity desired, and have a lot of wastages. A automatic corrugator needs volume of 1,500 tons or more so as to ensure a reasonable payback period.

Have they exhausted all the options of a semi automatic process? By this, I mean, have they thought of using a single facer and bridge, and a sheeter to make two ply automatically, and a laminator so that they can dry the board quickly and in a planned way? This needs far less investment; and planned well can be an intermediate step before graduating to 5-ply automatic.

Have they thought of specializing in conversion of smaller volumes by outsourcing their board requirements from a nearby automatic corrugator?

I think that all these need to be considered in depth; and if the options of upgrading are not available, or workable, and one can ensure a payback of investment in quality equipment, then one should venture to invest more. Otherwise, there would be



several failures and these will prove to be costly not only to the investors, but also to their customers.

The current situation in the paper corrugated board/box industry is that post dereserving of paper corrugated carton industry, about fifteen years back, several “automatic” corrugators have gone into production, and their number is increasing by the weeks. Some “semi automatic” corrugators have put in “automatic” and more are on the way. Customers have started demanding better quality boards. Since several “semi automatic” have become automatic, corrugated box making capacity has gone up by leaps and bounds, and there is unhealthy price competition. Undesirable practices have also been noticed.

In these circumstances, there is talk of a “shake out” in the automatic community. In fact, at the last ICCMA a topic on “mergers and acquisition” was the subject for a panel discussion, and I was amongst the panelists, and I did mention about the “shake out”.

But is the “shake out” an absolute term? No. Not only in ours, but in all industries, the inefficient either upgrade, or wind up or get bought out. And thus consolidation of the efficient units take place. This will happen in our industry too. Just as an example, when I was young, the most popular refrigerators were Kelvinator (and

its various sub brands), Allwyn, Godrej were the other brands. Allwyn sold out to Voltas which is today non existent. Almost all other brands, except Godrej, have lost their way and have been replaced by Samsung, LG, Whirlpool, and others. Similarly in TVs, ECIL, Crown, Texla, Weston etc were the leading brands. These have become extinct and the market is dominated by Samsung, LG, Panasonic etc. The markets have grown multifold; but the brands have become extinct. Why? Some of the reasons are that they failed to understand and equip for changing customer demands; they did not adopt new technology and upgrade their production facilities.

An important thing to remember, in these modern times, is to remember that this is a consumption oriented world economy. Technology has to change fast as otherwise manufacturers cannot keep up their manufacturing facilities because they need to continuously produce, cheaper, and feed an ever growing demand. Thus high volume, high quality, least wastages, and, consequently, lower prices, are the determinant. Nothing exemplifies this more than the ubiquitous cell phone – which was earlier only a means of verbal communication; today it is a mobile office, mobile entertainer, mobile payment gateway, etc. and many features rolled into one. Increasingly this is becoming the mobile banker as well. The cell phone developers are laughing their way to their banks because the customer need is ever increasing and, apparently, insatiable. As a marketer, I am thrilled because, as Steve Jobs mentioned, he knew better what the customer wants and even better than the prospective customer.

And as a part of the fraternity, I beseech each one of the corrugator to think out of box, and determine, proactively, for the customer the best, cheapest and the most attractive looking and easily usable packing option without comprising the customer needs for safety in storage.



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At the recently concluded FCBM, and at the earlier ICCMA, the opinion of the knowledgeable was that there is definitely room for the small scale sector. The concurrence was also that the small scale industry has to upgrade its equipment and technology; and reinvent itself as a stand alone converter or a stand alone sheet maker, but with quality equipment. Customer demand for better quality products at cheaper price will grow in volume; the solution is not making boards with obsolete technology and dropping prices, but in recognizing changing needs, changing technologies, multiple options the end customer has, and reinventing and repositioning oneself to meet the challenges of time.

The small scale, thus, has two options:

Upgrade the existing equipment by replacing the single facer with a better single facer with bridge and a sheeter. One needs enough length and space as the sheeter will be in line. And you need place for glue making as well. Plus add a semi automatic or automatic flute laminator. This will reduce manpower needed, and hence will be viable. However, this will drive up the capacity, and will need adding order volumes.

Buy boards from a automatic plant. This is the best solution given that the boards procured from a good board plant will be better than the board one will make even by (a) above. Also this will mean less investment in capital equipment; requirement of lesser space compared to present, and a opportunity to specialize in printing and box making.

The above options are in addition to the option of going “automatic”. And whilst going automatic, the small scale industrialists may also “merge” together three or four of the existing and differently owned units to form a large, combined, unit with over 1,000 tons of existing demand, justifying the investment in a automatic corrugator which can be jointly owned by all the “merging” units.

The conclusion to the question “To Be or Not To Be” is unquestionably “To Be” as a modern industry with relevant and appropriate technology suitable for the determined scale of operation and being contemporary with changing technologies, and market situation. And where relevant and possible, to work in tandem with a board maker leveraging each other’s strengths – the strength of the board maker to make quality boards; the strength

of the converter to deliver quality cartons, at quicker speed, and on low volumes.

To quote Chacha Nehru, and paraphrase him, “there are miles to go, miles to go..... And options to consider, and attitudes to be changed, before the small scale decides to invest in a “automatic” corrugator.

Anant Sarma, Jhalani Kamleh, New Delhi

A mechanical engineer, commerce and arts graduate, cost accountant and a MBA, educated in Mumbai and Kolkata, with close to 40 years of industrial marketing experience. Have held senior marketing positions in multinational engineering companies, before venturing into own as partner of Jhalani Kamleh Overseas in partnership with Pradeep Jhalani. Widely travelled on exports of engineering goods to over fifty countries across four continents; speaks several Indian languages, besides knowledge of Russian, Spanish, French and German. Have technical knowledge and experience of paper making and paper corrugating industries.

Packaging Novelties

HebeBUhne Packaging

The corrugated packaging created by Panther-Packaging of Germany, includes a lift for the product. A special mechanism keeps the contents securely in place. Upon opening of the two side flaps the platform lifts the product upward. Once the sides are folded down and the product is lifted up, the product can be removed easily.

The design was inspired by the typical jewellery boxes. This type of presentation is perfect for presenting smaller plants, as in this example. But also a variety of other products makes the lift a very special star.

This presentation is interesting for small plants and non-food products such as electronics or gift items.

Safety, functionality (for example, through the practical carrying handle) and the element of surprise come together in this innovative packaging solution. At the same time, the outer areas provide plenty of room for a decorative and brand-oriented design.



Design For India

JETS300 CORRUGATED BOARD PRODUCTION LINE

Width: 2000mm/2200mm/2500mm
Design speed: 300m/min
Tailored length: 90~100m



What ? is the condition ?

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High moisture in rain reason.

Soulution-“Design for India”

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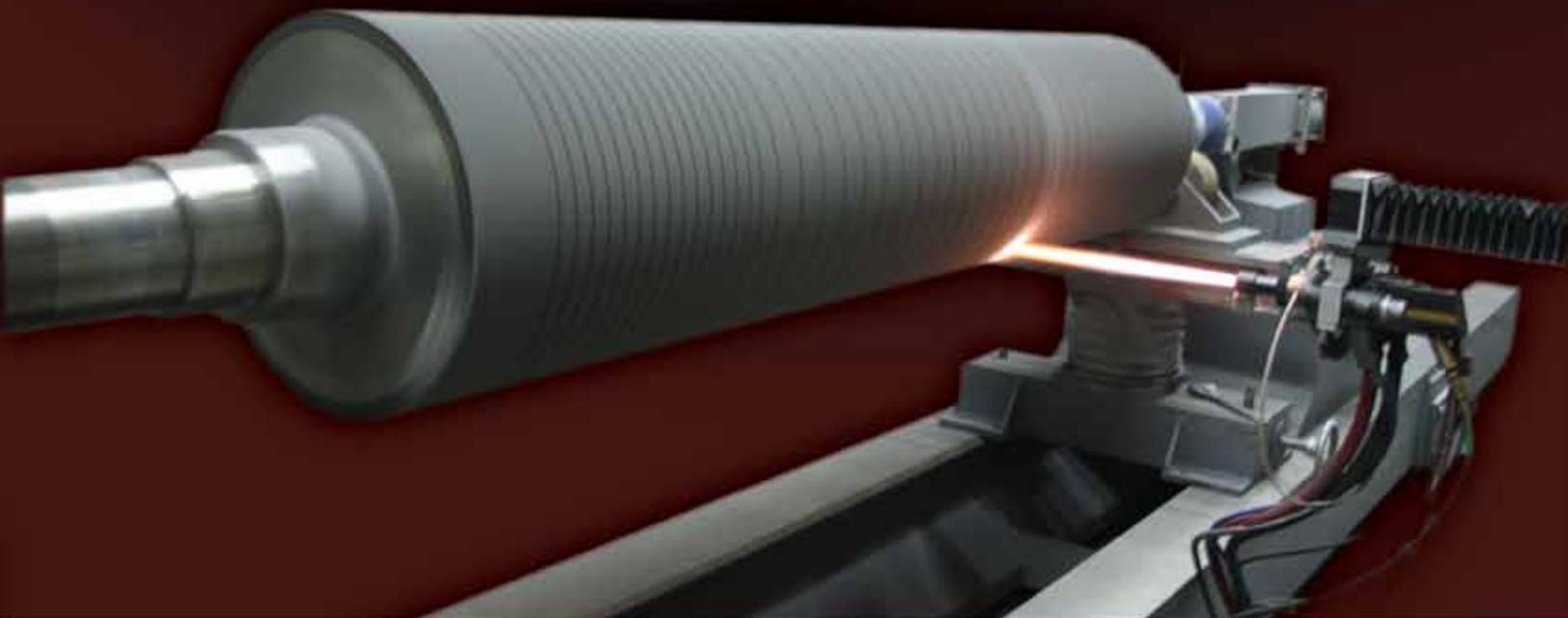


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The Corrugated Box Industry in China

S&T Information Research Institute of Bengbu, China, charts the success and challenges of the highly successful corrugated box industry in China.

China started to promote corrugated boxes in 1954 and the manufacturing tech was quite low, however, the reform and development for 25 years is just the significant period for corrugated box industry in China.

80s in 20th century some primitive single machines were using to make corrugated boxes, meanwhile, a few semi-auto single facers and corrugated board lines were imported. It is in this period China was transferring from planned economy to market economy, which is transition period of Chinese corrugated box industry development.

90s in 20th century, the vitality of Chinese market economy, industrial production and foreign trade were witnessed. In order to secure exported goods packages quality, the State Commodity Inspection Bureau declared clearly that the corrugated boxes made by single facer shall be used and quality license, be demanded accordingly. Thus, an aggregation of township and village enterprises were growing up in the market economy, they rushed to buy single facers and in merely 3~5 years, Chinese corrugated boxes processed by semi-automatic single facer was realized, which is the new opportunity period.

For 10 years from 90s of 20th century to present of 21st century, as China economy growing fast constantly, this industry has entered into a rapid development period. As for the corrugated board production, in the previous 5 years, the semi-mechanized single facers were being replaced by mechanical corrugated board

production lines completely, and in the later 5 years, the lines were upgraded from popularization up to mid/high level, which has changed substantially.

In 1995, the total Chinese corrugated board output reached 7.4 billion m² accounting for 6.7% of world production and in 2000, the whole national capacity soared to 12.3 billion m², merely 1 fold more in 5 years, standing the 3rd position in the world, only less than USA and Japan. In 2003, the overall production was 15.8 billion m², surpassing Japan and became the 2nd large production force in the world, in 2008 and 2009, the capacity were 33.6 and 37.6 million m² with 30% and 19.3% output share both in Asia and in the world. From that period on, Chinese corrugated box industry has stepped into international modernization rank.



Lu Peixin,

Vice Director, S&T Information Research Institute of Bengbu, China,

Recently Chinese industry annual growth is up to 18~20%, it is estimated that it will catch up United States and turn into the largest corrugated box market in the world. It is assessed by World Packaging Organization that the total scale of world package industry in 2009 is 562.8 billion USD, in which the packing market is 216.0 billion USD, accounting for 38% of the total. It is also foreseen by China National Papermaking Association that the paper and board consumption in China will rise 183.28% and 139/69% in 2000~2009.

Number and Distribution of Chinese Corrugated Box Manufacturers

There are approx 18500 sized box-makers¹⁾ in China, in which there are 170 plants making base paper, board and box, 9550 plants making board and boxes and the remained only making boxes distributing mainly in East China (35%), South China (38%), North China (19%), central China (6%) and West China (3%), let along the thousands small box-making workshops not mentioned.

Situation of Chinese Corrugated Board Lines and Box-making Equipment

The corrugated board production lines were found in the middle of 1980s,

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developed from separate corrugated board machine to single facer, then from normal corrugated line to high end ones of broad width, fastness, efficiency, low energy consumption, multi-function, sophisticated process and full automation. Today Chinese corrugated board machineries have entered into the era of production lines and those separate machines and single facers are being eliminated. The corrugated board making lines are composed of those made in mainland (77%), Taiwan (15%) and exported from Europe and USA (8%).



As for the corrugated board post-processing equipment, the original separate slitter-scoring, slotter, die-cutter, printer and folder/gluer are being replaced by computerized, high speed, multi-color printers (with enclosed doctor blade, varnishing and drying systems) – slotting – die cutting – folder/gluer- stacking – strapper – rollway. Recently the 500 major box producers have 3200 sets printers, with 6.4 sets for each plant and 74% operation rate averagely. The box-making machines are primarily made by well-known mainland, Taiwan and international companies.

Problems and Challenges

It shall be pointed out that Chinese corrugated box modernization is only in preliminary stage, only representing the board and box productions and it has a

long way to go in terms of the technical level compared with the modern countries.

1) Surplus Capacity and Mass Competition

Chinese corrugated board productive lines approached a peak period in 2003, when there are 3000 lines in the country, the high output brought about fierce competitions, meanwhile, the social job division of “concentrated plate-making among major enterprises and disperse box-making in minor manufacturers” results in an overall cooperation and stronger competition. There are totally 50,000 small box producers (even one or two simple machines and 5~6 workers) merely occupying less than 40% market shares, while the board production is concentrated in mid/large producers.

2) Lower Modern Enterprise Management Level

The inability of profit maximization and “stressing equipment and ignoring management” make some major enterprises are not able to gain more profit with their advanced machines; some producers are not well informed of world market information, lack international market operation experience and product innovative ability. In order to obtain market share, they have to decrease price, leading to minor profitability or even loss.

3) Dissatisfied Product Level, Simple Variety and Unreasonable Structure

Today most of the box producers are not strong in product development, which brings about the monotonous carton variety, slow product renewal and shortage of high-end and exquisite boxes.

4) Lightweight Orientation of Boxes to be Enhanced

In China, the double wall corrugated board consumption accounts for approx 75%, while that is only 9.1% and the single wall, 89.4% in USA. Since



the single wall board accounts for a small portion in China, it causes severe waste in transportation and excessive material consumption. The reason is first, the strength of the corrugated board base paper and board made in China are lower, and on the other hand, the customers are not confident of single wall board packaging due to the commodity storage and transport conditions.

5) Equipment Intensification to be strengthened

At present, American corrugated board production lines are 40% less than those in China, yet its board output is 3 times more than the later, which connotes the Chinese machine operation rate is quite low. The said 40% rate means the excessive capacity and the advanced equipment failing to make full use.

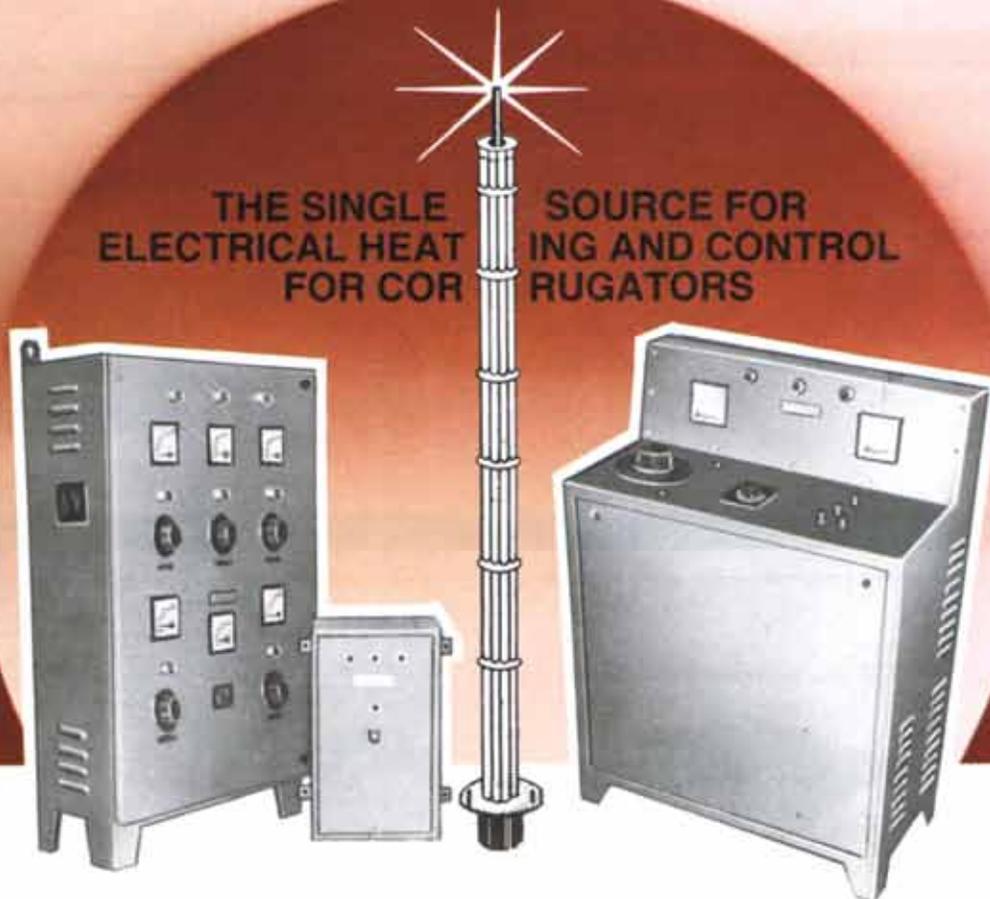
Resolutions and Direction for Future Chinese Corrugated Box Industry

1) Eliminate narrow, slow and promote wide and speedy machines, and increase the operation rate. This year, Chinese corrugated board line purchase is obviously slowing down, it is estimated that in later 10~20 years, the board lines will change



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and increased the input of tech and investment to innovate the machines up to a new stage. Today, it has developed computerized, high speed flexo printing (5~6 colors + enclosed doctor blade + varnishing + drying) – slotting – die-cutting – folding/gluing – stacking – strapper production lines, the lead edge Sun feeder from USA, wheel feeder driven by servo motor (German or Chinese suppliers), the machine speed reaches 300sheets/min; the effect of the text and graphic printed anilox rollers (6 colors and 600 lines) is as distinct as offset printing. The quality equipment and reasonable price are accepted by customers and the orders are coming from both home and abroad, which let Aote to be one of the top 10 profitable corrugated box producers in China.

Another example: there is a corrugated box making aggregation of 240 factories in Dongguang County, Hebei Province and it is a miracle of China. However, the machines made are mostly mid/low ones but cheap and the situation is this year is harder than last year; from the dilemma, we can foresee 2/3 factories will be bankrupt if it is not changed in future 3~5 years. There is article named “A Story of Wolf Eating Lamb” in the newly published journal “Sino-Foreign Managemnt”, the wolves are coming to Dongguang and the enterprises there are facing the danger to be eaten.

Source: Paper In Pack



from existing 3000 down to 1500, in which there are 1000 mid/high and 500 mid/low ones, distributed all over China. Just this quantity is still 1.4 times more than that in USA (600 lines), while the former output is 3 times more than China.

2) Eliminate the old post and single corrugated box machines such as the laggard and inefficient printer, slotter, die-cutter and folder/gluer etc., and it is the urgent task to employ the high end and multiple flexo printing – slotting – die-cutting – folding/gluing – stacking machines. One solution lies in “concentrated plate-making in major enterprises and disperse box-making among minor manufacturers” and the other is to eliminate laggard small box makers by means of union, merging, reorganization and shareholding reform to build up some giant enterprises and make full use of sophisticated machines.

3) Lightweight Corrugated Board Orientation China should learn from the same industry in developed countries to increase the portion of single wall corrugated board from the original 9.1% output and decrease the existing 75% double wall board production to a great extent, only in this way can the costs be lowered and profit, heightened.

Facts and Truth

Fact is better than eloquence. The old corrugated box machines shall be eliminated and high tech machine, employed. There are two examples: several years ago, Bengbu Aote Carton Machinery Co., Ltd mainly produced the post corrugated box machineries, which are single ones of low level. Because the company saw clearly the future direction and was aware of the potential danger of elimination, it stopped original production



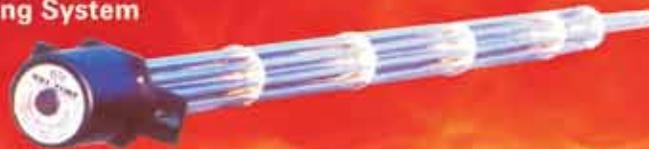
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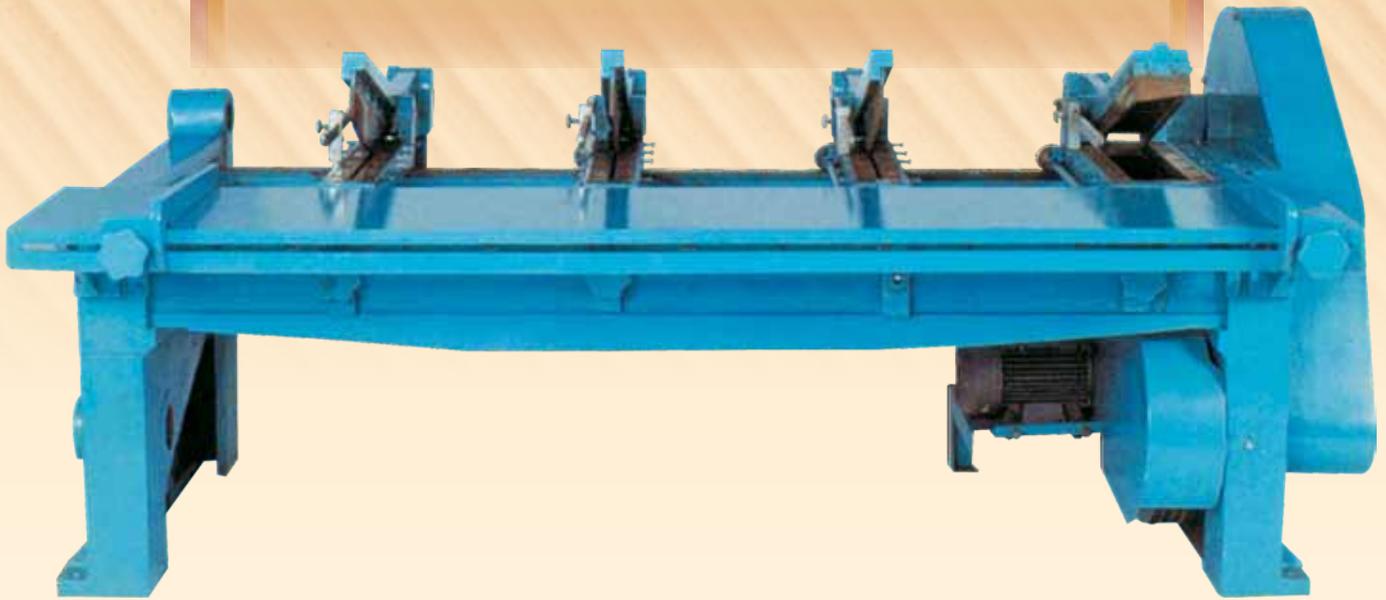
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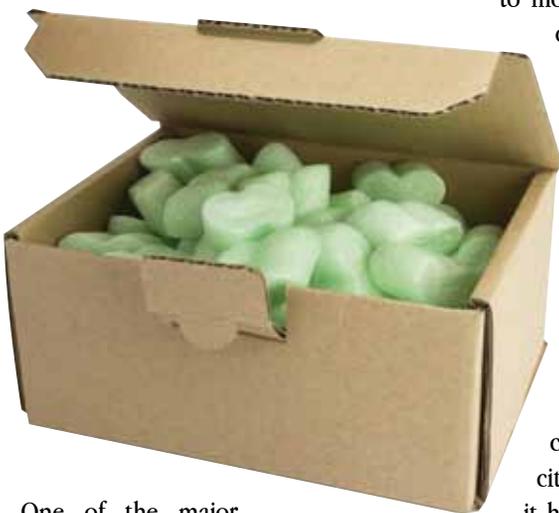
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Industry News

Protective packaging market to see growth

Investment in more sustainable materials and the rise of online shopping are two trends that will impact the protective packaging market through 2019, a notes new report.

The protective packaging market in the U.S. is expected to grow at a CAGR of 4.48% from 2014 to 2019, according to a new research report - Protective Packaging Market in the US 2015-2019." Defined by the report, protective packaging involves packaging solutions that provide protection and help in preserving consumer and industrial products, equipment, and machineries from any damaging effects during shipping and storage.



One of the major trends emerging in the market, the report notes, is increased investment in R&D to develop environmentally friendly and sustainable packaging materials. Vendors are investing in innovative technologies to develop packaging materials that can be recycled and reused.

Also according to the report, the demand for protective packaging is expected to grow because of an increase in its usage in the online shopping industry. The growing

popularity of online shopping and the adoption of protective materials for packaging are expected to have a favorable influence on the protective packaging market in the U.S.

Further, the report states that the rise in raw material costs is a major key challenge for the U.S. protective packaging market. Leading vendors have increased the prices of their products to offset the effect of the rising costs of raw materials.

Future Innovation Top of the Agenda at Corrugated Conference

Corrugated Packaging companies have been urged at an international industry conference to take advantage of the improving economic climate by continuing to modernise, if they are to meet future challenges and remain one step ahead of their competitors.

More than 300 top packaging professionals from around the world attended the prestigious European Federation of Corrugated Board Manufacturers (FEFCO) Summit in London. Andy Barnetson, CPI's Director of Packaging Affairs, commented: "We were very pleased to welcome colleagues to London. It is a vibrant city with a great future, two things that it has in common with the Corrugated Industry."

Several speakers addressed FEFCO's two day conference, including Paul Earnshaw (Packaging Manager, Tesco), Alison Coudene (European Procurement Group Manager, Nestlé), James Walton (Chief Economist, IGD), Miles Roberts (Group Chief Executive, DS Smith) and Gary McGann (Chief Executive of Smurfit Kappa Group).

Themed 'Reigniting the Flame', taking its inspiration from the successful 2012 London Olympics, many important topics were discussed at the Summit including the challenges facing the Corrugated Industry today, how to improve end user perceptions and the impact of EU legislation.

The importance of corrugated partners working with customers to understand their future needs in an evolving retail world was emphasised by speakers from the retail sector on the second day of the conference.

In his speech, Tesco's Paul Earnshaw said: "We need to engage with the packaging supply chain because packaging offers us a huge opportunity. But the Corrugated Industry needs to identify the benefits, not the features, of their packaging, and put the consumer at the centre of everything they do."

While Alison Coudene of Nestlé told the audience: "Packaging has a critical role in reducing waste and complexity across the supply chain. We also need the Corrugated Industry to help us differentiate ourselves with innovation."

Corrugated's qualities in terms of printing, design, hygiene, logistics, sustainability and protection are renowned, while its flat printable surface is readymade for exploiting digital platforms, such as Smartphone apps and Quick Response (QR) codes, meeting consumers' growing appetite for instant access to product and dietary information.

Andy Barnetson says that embracing new innovations, such as printondemand and personalised packaging, will further boost corrugated's appeal and help the material retain its popularity with retailers and consumers alike.

Cont. on - 75



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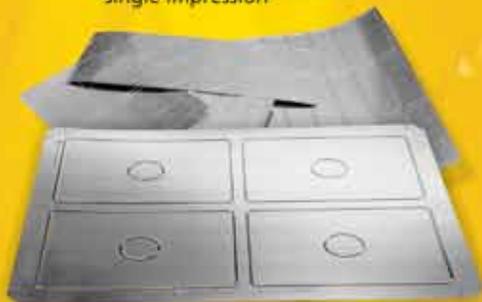
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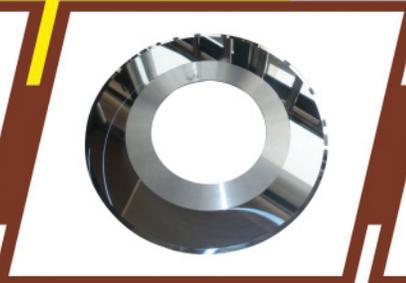
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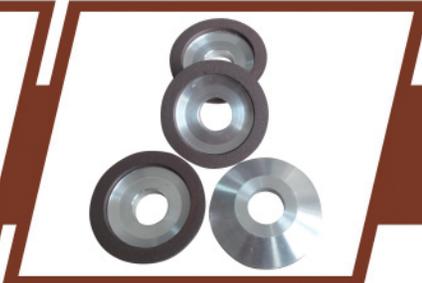
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He commented: "It was a very successful event in London. The UK Corrugated Industry is investing significantly in new technology in response to a challenging retail landscape. However, it is clear from the speakers at the conference that corrugated must remain forward thinking to retain its position at the forefront of the Packaging Industry."

Michelman Acquires Long Time Indian Sales Partner Supack International

Names Mr. Pankaj Shah, Co-Director

CINCINNATI, OH (January 28, 2015) – Michelman has acquired its long-time sales and service partner, Supack International P/L, making it an integral part of Michelman India. Michelman India is dedicated to the development of the Indian market, with an immediate focus on the growing printing and packaging sector. The company also has expansion plans to service other coatings and manufacturing industries that Michelman supports worldwide.



Appointed as Co-directors of Michelman India are Mr. Pankaj Shah, Supack's founder, and Mr. Steven Wong, Michelman's VP/Managing Director, Asia Pacific. With the Supack acquisition, the Mumbai, India based Michelman India hosts a business center, laboratory, and an experienced team of sales, technical service and business operations personnel. By keeping the existing team intact, customers will experience a seamless continuation of business and technical services.



The facility's laboratory has been equipped recently with several industry accepted product testing capabilities for packaging, printing, and coating applications. With this direct and increased physical presence in India, customers can expect Michelman to quickly develop innovative technologies for the Indian market.

According to Mr. Jeff Rodgers, Chief Financial Officer at Michelman, "Michelman and Supack have been serving the Indian market together for more than 30 years. Mr. Shah's experience and stellar reputation have allowed us to establish a firm position in the Indian packaging industry. With this acquisition, coupled with our established laboratory capabilities, we will be intensifying our resource commitment to the region to support current customers, while also increasing our focus on serving customers of our Coatings and Industrial Manufacturing Groups."

About Michelman

Michelman is a global developer and manufacturer of environmentally friendly advanced materials for industry. Michelman's water-based surface modifiers, additives and polymers add value in a wide range of applications including wood care, floor care, industrial coatings, paints, varnishes, inks, fibers, composites, and construction products. As an innovator in the development of barrier and functional coatings, and digital printing press primers, Michelman adds value to consumer and industrial packaging, labels and commercially printed materials. Michelman serves its multinational and

regional customers with production facilities in North America, Europe and Asia, product development and technical service centers in several major global markets, and a worldwide team of highly trained business development personnel.

Corrugated Packaging Meeting Digital Challenges

UK corrugated packaging companies are jumping on the digital bandwagon, driven by a combination of shorter run lengths, the dramatic rise of the discounters, emergence of online shopping and brand customisation.

The Corrugated Packaging Industry needs to keep pace with a challenging retail landscape and is investing significantly - almost £500million in new technology and plant over the last two years - to help support retailers and brand owners with enhanced merchandising productivity, whether in transit, back of store or on-shelf.

The Confederation of Paper Industries (CPI) says that part of this significant outlay has been in cutting edge digital printing equipment to offer innovative solutions for display packaging and personalisation, which can provide a critical edge in a fiercely competitive market.

Whilst the black text printed corrugated box remains the de facto mode of transit packaging, contrastingly highly colourful and functional retail-ready solutions are now the norm on-shelf.



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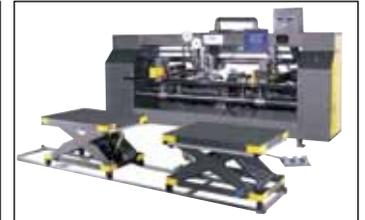
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Corrugated is a flexible material that already protects, is colour-printable, merchandisable and the most recycled packaging medium. The latest advances in digital printing from a number of suppliers allows corrugated to align with labels and flexible packaging by providing tailored print runs with no minimum requirement.

Investing in print digitalisation is adding value for brand owners and retailers by catering for seasonal or event-based promotions that require short-run or variable print capabilities, as well as mass customisation. By offering different printing techniques, the industry provides considerable choice for brands.

Most of the major retailers are benefiting from these improvements in print quality but this has been particularly evident in discount stores like Lidl and Aldi which require functional, display-ready packaging and are big users of corrugated as it offers eye-catching designs and efficiency of shelf replenishment. Shelf-Ready Packaging reduces handling and waste and has a positive impact on branding – it is used for many of the discounters' products. Print-on-demand offers cost-effective, personalised marketing campaigns to raise a brand's profile to meet the aspirations of leading companies for generating innovative sales and marketing potential. This latest advance gives corrugated another string to its bow, enabling the industry to become even more effective at engaging consumers.

CPI's Director of Packaging Affairs, Andy Barnetson, says: "Whilst the impact of digital on-shelf is self-evident, it's the added value it brings to transit packaging that's arguably even more exciting; a hitherto untapped potential, especially so in servicing the rapid growth of online shopping.

"The Corrugated Industry has made significant investments in digital technology which is becoming increasingly important across so many forms of everyday activities, not least in social media and communications, to ensure it is

perfectly placed to capitalise on additional opportunities as they arise."

The Corrugated Industry is already a pioneering force in sustainable, lightweight, recyclable packaging that does not compromise the integrity of the goods, while innovative developments and investment in digital printing have led to new types of even more efficient and decorative corrugated packaging solutions.

More info: www.paper.org.uk

Corrugated packaging not going away in Snacks

'Particularly in snack foods, that regular slotted carton box is not necessarily going away,'

Related tags: RTC box, Pack Expo, PMMI, Snacks, Secondary packaging, Corrugated, Strength, Protection, Ecommerce, Promotions, Sustainability Snack makers need to protect fragile product and meet increasing ecommerce and promotional demands – good reasons to increase the use of corrugate in secondary packaging, says a business strategy expert.



Since 2008, 49% of manufacturers in the food and personal care sector have reduced used of corrugated packaging, according to PMMI's November Secondary Packaging report. However, 21% have increased use 9% in the food sector.

"Ecommerce is huge and it's driving a greater use of secondary packaging," she told press at a conference at Pack Expo 2014 in Chicago. Virtual shopping, she said, would rise 20% this year, according to data from eMarketers. "Secondary promotions

and displays also lead to an increase use of corrugate said the president of the Research company Ritson said increased use of corrugate in the snacks sector was mainly a practical matter.

"What's really important in snacks is the protection of secondary packaging because most snacks are in flexible packaging and snacks being snacks are breakable. That's where you're seeing increased usage of corrugate material," she said.

End of aisle corrugated stands are popular in snacks.



Innovation in corrugated

Ritson said there had been a lot of work done to improve the sustainability of corrugated material in packaging. Recycled additives and fibers were being used, for example, and light weighting continued to be a priority.

However, manufacturers faced continued challenges over cost, she said.

According to the PMMI report, the cost of corrugated boxes would rise at an annualized rate of 3% through 2017.

"The big decisions are around the rising cost of oils and the rising cost of paper – everything is rising, so that's the big conundrum at the moment," Ritson said.

Source : Internet

Corrugated packaging with an environmental profile

Corrugated cardboard is the most common material for transport packaging worldwide. Corrugated materials have good qualities, but can also create problems



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when moisture or purity requirements come into play.

Wellplast AB, a company in Sweden has developed an eco-friendly packaging system that eliminates these problems of moisture and lack of cleanliness.

The new packaging material is made up of 55 per cent chalk (calcium carbonate, or CaCO₃) and 45 percent polypropylene (PP). This mixture provides a number of functional and environmental benefits:



(Wellplast recently won First Prize in "The Serendipity" challenge 2014)

- The chalk helps stiffen the polypropylene.
- The chalk also improves the "dead fold," which makes it easier to convert panels to packaging.
- Plastic consumption is also reduced with chalk, thereby reducing the environmental impact and the cost.
- Chalk provides an improved migration barrier yielding properties such as purity, fluid resistance, and chemical resistance.

The corrugated packaging material is designed to achieve maximum strength with minimum material consumption. The design consists of three identical layers where the middle layer (fluting) is corrugated and joined with the two flat outer layers (liner). These layers are merged together with heat and not with

glue. In the final stage of the production process the material is then cut into exact panels adapted to the finished size of the packaging. And this minimizes waste. Spilled material is recycled and used in new packaging.

Product and environmental benefits

"Protecting the product is packaging's most important task, and here we see a number of advantages with our products. Wellplast® is completely resistant to moisture, water and other liquids, such as oils. It is also impervious to dust, fibres or other contaminants. Wellplast®'s construction in combination with chalk and plastic yields strong and light packaging," concludes Jönzon.

From an environmental perspective, Wellplast® boasts the following benefits:

- Low energy consumption throughout the product's lifecycle. Compared to traditional plastic packaging, the use of fossil raw materials is lower.
- Used Wellplast® packaging is an attractive raw material for the plastics industry and can be recycled, for example, to produce street signs and plastic pallets.
- Wellplast® offers good opportunities for energy recovery by incineration. The energy content is high and the waste products include carbon dioxide, water and chalk.



- The inherent mechanical strength of Wellplast® allows the amount of material in the packaging to be minimized. The material is not biodegradable, but like other plastic materials it breaks down slowly by

the sun's UV radiation. The company closely follows developments in biodegradable plastics to investigate if in the future these can complement the product portfolio.

Source: <http://advantage-environment.com/transporter/corrugated-packaging-with-an-environmental-profile>

Super Bowl Challenge for Box Makers: 12.5 Million Pizzas

Corrugated Box Maker Rock Tenn Co. Is Pumping Out 400 a Minute to Prepare for Super Bowl

In us if pizzas are ordered this Sunday—whether from a big chain or their favorite neighborhood joint—chances are good the box delivered to their door will have come from Rock-Tenn Co.

Super Bowl Sunday is the biggest day of the year for takeout pizza, with Americans expected to order about 12.5 million pies, according to consulting firm Technomic Inc. That also makes it the pinnacle for the companies that make corrugated pizza boxes, and Rock-Tenn is at the top of the heap.

The company, based in Norcross, Ga., produces the boxes for half the freshly baked takeout pizzas sold in U.S. It supplies all of the boxes for Pizza Hut, the pizza industry's market leader, and it also serves the chain's three largest rivals: Domino's Pizza Inc., Papa John's International Inc. and Little Caesar Enterprises Inc.

Pizza is a very popular food. It's been growing faster than the overall box business.

Producing pizza boxes is more complicated than it might seem, partly because of the market's sheer size. There are about 65,000 pizza restaurants in the U.S., and the average American eats 46 slices a year, according to industry research.

The company says making and printing the cardboard at the same time gives it a speed and efficiency advantage over feeding finished boxes through a separate printing press.

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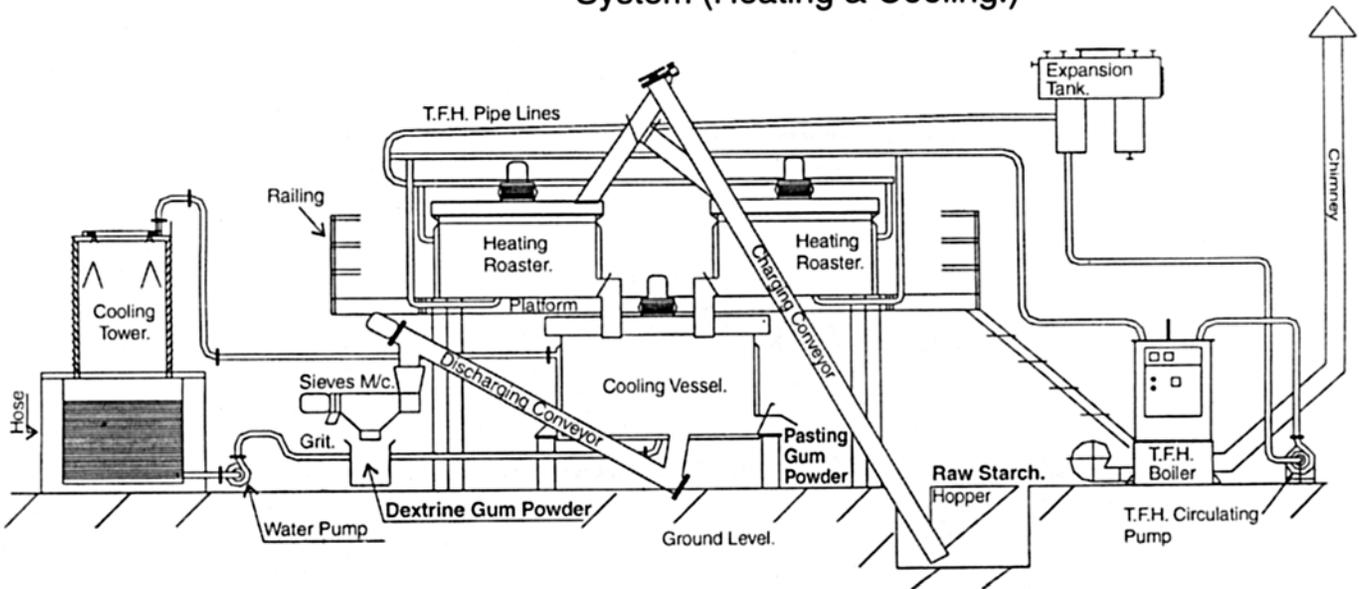
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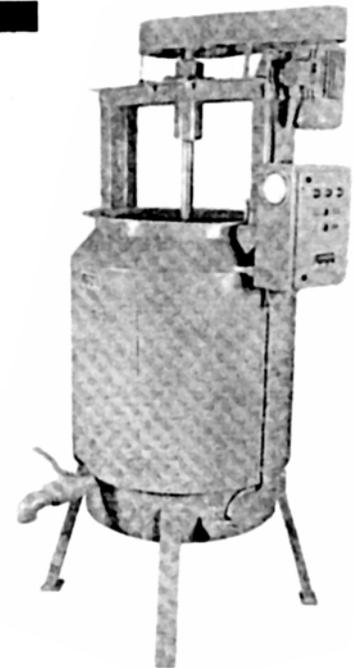
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Boxes play a vital but short-lived role in the pizza business. Once they are folded into shape, they often last little longer than the time it takes to get from restaurant to table, before being discarded. But they have to be strong enough to support pies up to 2 feet in diameter laden with sauce and toppings, while preserving the temperature, smell and texture of freshly baked pizza.

There's a very fine balance between keeping heat in and getting steam out," said Bruce Perkin, research-and-development head at Pizza Hut. Too much steam and the pizza will end up being soggy, but if you let too much steam out, the pizza ends up being cold.

Pizza Hut's solution: air holes along the creases where its boxes are folded and a vent in the finger hole used to lift the lid. To save paper, Pizza Hut's box has rounded edges and a reduced number of folds.

The Super Bowl falls in the middle of the pizza industry's busy season, which runs

from Halloween through the college-basketball tournament in March.

Box manufacturers go into hurry-up mode long before the kickoff. Rock-Tenn increases production of pizza boxes by 10% starting in the middle of December. Some of its smaller rivals begin even earlier.

Corrugated boxes were once considered a technological advance. Until the 1970s, many pizzerias sent out pies in folded chipboard cartons, like those bakeries use for cakes. Others placed pizzas on cardboard discs inside large paper bags. Corrugated boxes with sides and a lid became popular because they were stronger and kept pizzas warmer by trapping heat in the corrugated flutes.

These days, however, demand for corrugated boxes has come under pressure from alternative packaging, including the reusable delivery bins preferred by some retailers and manufacturers to reduce cardboard waste.

Such concerns can be responded by using a box developed by New York-based packaging design firm Ecovention LLC that features a perforated lid that breaks into cardboard serving plates, and a bottom that can be folded into a smaller box for storing leftovers.



"It hasn't gone mainstream in the U.S. yet," "but the company thinks that it's pretty innovative."

Source: <http://www.wsj.com/articles>

DuPont Packaging Graphics Announces Global Price Increase for DuPont™ Cyrel® Products

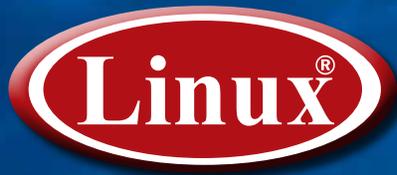
DuPont Packaging Graphics is announced global price increases for DuPont™ Cyrel® flexographic systems, including photopolymer plates and sleeves, associated equipment and consumable products, effective Nov. 3, 2014. The amount of these increases will be up to 10 percent, varied by product and product line.

DuPont Packaging Graphics continues to demonstrate its commitment to its flexographic printing customers by commercializing innovative new products and technologies that enable customers to improve their offerings and help them thrive in a competitive and dynamic marketplace.

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Source: www.dupont.com



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Product Profile

RTS Solution for Fruit Growers in management of stock

Italian software house RTS has recently developed an innovative solution for Ghelfi Ondulati, suitable for the management of down stream case-erectors, especially in the fruit territories

“Many companies want to have a comprehensive view of their real situation and they need to know in real time and in a clear way the status of the case and tray erectors, which are often different from their own manufacturing sites in terms of sizes, structure and computerised systems,” explains Alessandro Minocchieri, Senior Analyst of RTS. “Such case and tray erecting companies increasingly require greater process managing efficiency with the support of operator-friendly computerised systems. Unfortunately, stock management is often approximate and you can never know exactly how many boxes there are in your storehouse.

Inventories are often sent to the fruit growers by their box makers, worked out according to their own statistical data.”

RTS can provide these case and tray erecting companies with a computerised system to help manage and control stock. This functional managerial unit enables them to keep an accurate stock control and at the same time, gives the companies-as the box supplier - direct access so they can see when they need to deliver more product.

RTS has been working in Spain for a couple of years as well, where some important installations for the management of several assembling centres has already been carried out successfully.

Atlas designs Riverford recipe box with adjustable dividers

Atlas Packaging has completed the design of a unique crash-lock recipe box with multi adjustable dividers for Riverford, the organic, home delivery company.

Riverford, who delivers 47,000 fresh produce boxes weekly, is most renowned for its organic meat and veg box home delivery scheme. The Recipe Box, a concept which offers the consumer all the ingredients required to cook up a fresh, no-fuss meal, right down to measured quantities of salt & pepper, is anticipated by Riverford to be the next major trend in British home-cooking.



Atlas Packaging already works closely with Riverford on their existing home delivery offerings and was delighted to respond to a brief to design the new Recipe Box.

The required box presented a number of challenges, all of which needed to be overcome to make the box viable. It needed to reflect Riverford's core brand values – quality, organic & environmentally-friendly as well as divide flexibly into compartments to accommodate a wide variety of sizes, shapes and weights and

protect the ingredients including glass bottles, fresh vegetables and delicate herbs. The box also needed to integrate with Riverford's demanding supply chain.

The solution conceived by Atlas' skilled structural engineering team was a crash lock box that could be assembled in less than a second on Riverford's production line. Different grades of board were transit tested with varying weights to ensure boxes arrived in prime condition with the end user as well as the possibility of repeated use.

The box's unique selling point is the grooved inner container with multi adjustable dividers.

The Riverford Recipe Box has been shortlisted for the Pro2Pac Excellence Awards 2015 the winner of which will be announced at the Show.

Source: <http://www.packagingnews.co.uk>

Recompute: A Sustainable Desktop Computer

Computers are hard on the environment – from their materials and manufacture to their energy use and ultimate disposal. There are definitely some more energy efficient and eco-friendly models out there, but in order to make computers more sustainable, we need to completely rethink them. For this year's Greener Gadget Design Competition, Brenden Macaluso decided to



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Shear LINE



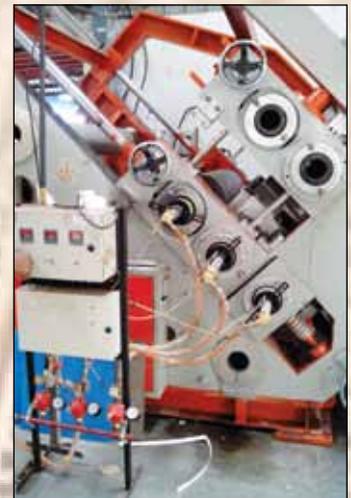
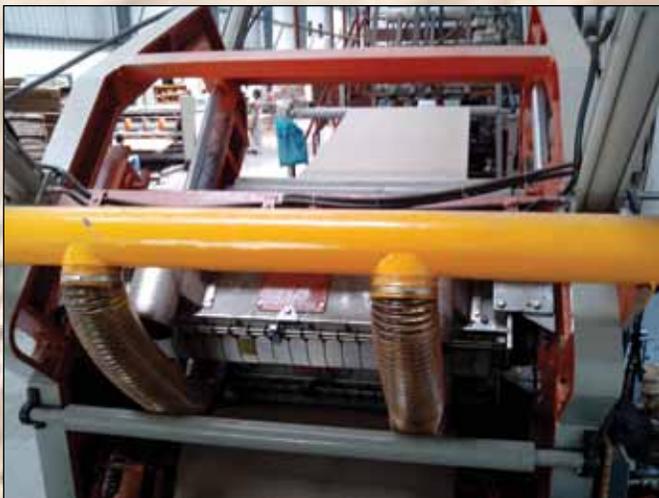
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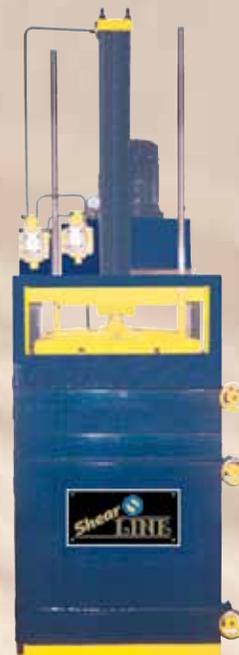
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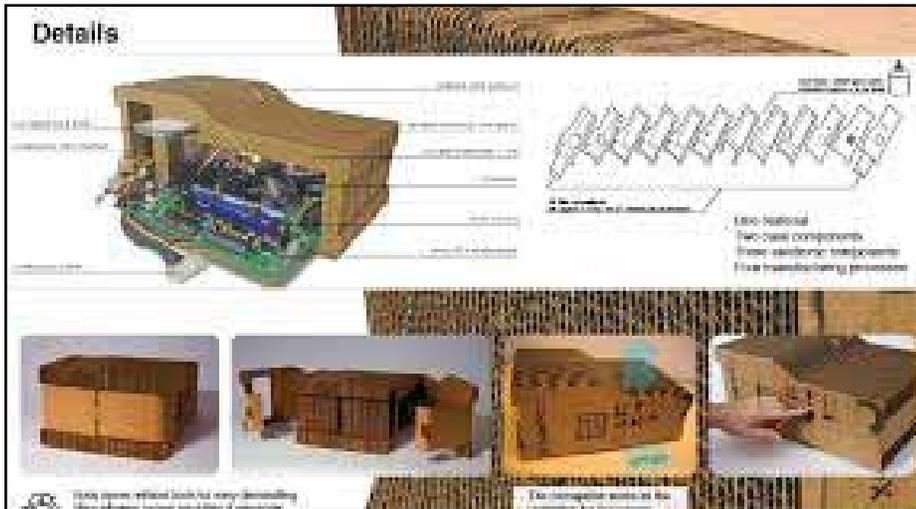
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redesign the computer to make it's whole lifecycle more sustainable. Featuring a slick cardboard case, hisRecompute focuses on sustainability throughout the computer's manufacturing, use and disposal, offering a fully functioning PC with off-the-shelf components.

The only materials required to manufacture Macaluso's Recompute desktop computer are cardboard, non-toxic white glue and the computer components themselves. Standard



computers on the other hand require numerous materials such as ABS plastic, aluminum, and steel, in addition to many energy-intensive manufacturing processes. This simple cardboard computer only requires die-cutting, printing, gluing and finally electronic assembly of three parts – the motherboard with processor and memory, a power supply, and a hard drive.

To use the computer, simply hook it up to your existing monitor, keyboard and mouse. You don't need any special new hardware to run it, and for even more flexibility, there are 8 USB ports for external hardware customization. To dispose of the computer, you still need

to send the electronic parts to be recycled properly as they contain heavy metals, but the cardboard is easy to remove and recycle. Recompute does not require any special tools to dismantle.

As for the specs of the computer, all of the components are off-the-shelf technology, including an Intel Core 2 Duo CPU, and 2GB of RAM. While there could be some concern about heat, air flow, and possible ignition due to it being made of cardboard, the designer has taken this into consideration. Plastics begin to melt at 120°, whereas cardboard won't burn until 258°. The goal of this new computer design is to minimize the use of processed materials, reduce labor and parts to manufacture it, and finally be able to more completely recycle a computer at the end of its useful life.

Source: Internet

Liquiguard Waterproof Coating

Rubber Ducks approved of our waterproof cardboard container using Liquiguard oil and waterproof coating. Liquiguard coating can be applied to either one or both sides of the corrugated board providing a water/oil proof and clear finish to any corrugated product.



What is Liquiguard waterproof cardboard & how does it work?

Liquiguard is a water and oil resistant coating, available at GWP Coatings that has been created for various industries and applications. Liquiguard offers a protective, waterproof corrugated packaging option which is suitable for a wide variety of uses across numerous industries. Typical applications of Liquiguard Coatings include wet and oily products such as flowers, fruit, vegetables, meat and fish. Similarly, Liquiguard Coatings are also successfully used in the automotive industry whereby components are often greasy and require protective transportation qualities.



Liquiguard Coating consists of a waterborne acrylic lattice, creating a translucent film when coated or dried onto corrugated cardboard or paper offering a non-hazardous and waterproof

Cont. on - 99



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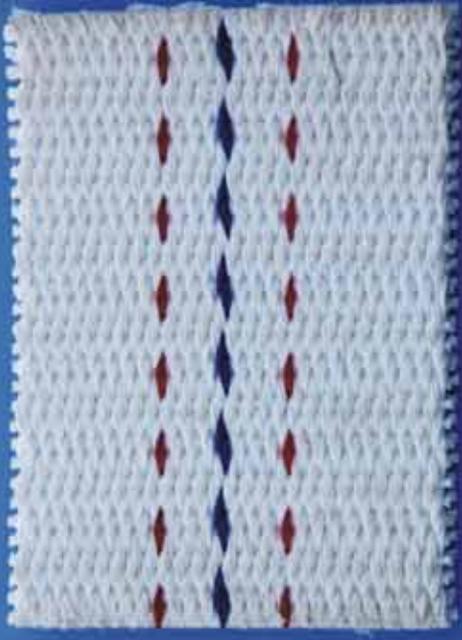
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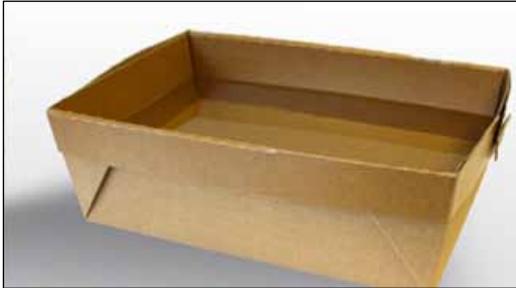
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Cont. from - 95

alternative to corrugated cardboard packaging. The materials combined to manufacture Liquiguard consist of acrylic emulsions which are recyclable and fully biodegradable ensuring Liquiguard Coated products are environmentally friendly. Liquiguard offers the perfect solution for any water or oil based products including frozen food and can also be used for 'cook in the box' products.



Key benefits of Liquiguard Coating

- Water & oil resistant
- Suitable for an extensive range of applications
- Short minimum runs (as low as 500 sq metres)
- Extremely high quality & appearance
- Environmentally friendly & recyclable
- Fully Bio-degradable
- Adds extra levels of protection for corrugated products
- Liquiguard Coating eliminates the need for additional packaging such as liners or plastic bags therefore reducing costs
- No need for a secondary packaging operation, saves time through loading directly into packaging

For More info : www.gwp.co.uk/coatings

Source: Internet



Esko launches i-cut Production Console operating platform for Kongsberg digital finishing systems

The increasingly growing demand for ever more sophisticated production tools has inspired Esko to develop the i-cut Production Console. This newly developed front-end operating system will be the common platform for all Kongsberg digital finishing systems. It combines the feature set of the XL-Guide tailored for packaging applications and i-cut Vision Pro, the industry standard front-end for cutting and short run productions. Designed for all operations on all Kongsberg tables, the i-cut Production Console forms a solid foundation for any future developments.

The iPC instinctively supports the machine operator and displays colors with a meaning, which draws focus to the right area at the right time.

The i-cut Production Console (iPC) drives all functionality found on Kongsberg tables, such as camera control, machine set up, tool recognition, calibration and tool adjustments. "These tried and tested features are industry favorites, and are now incorporated into a much more intuitive operating system for users," explains Tom Naess, Esko Product Manager CAM. "We want to help customers simplify their approach so they can maximize their capabilities. Ease of use is about making complex tasks easy. A good portion of accomplishing this is hidden in great software design created completely from scratch, consulting with user interface specialists to build an efficient system. The iPC instinctively supports the machine operator and displays colors with a meaning, which draws focus to the right area at the right time. It will change the way operators finish a job, and allow them to get even more out of their machine: they will get up to speed faster while improving the output quality. It all leads to less downtime and more efficiency - with less training or service intervention.



The i-cut Production Console is ingeniously designed to guide and support the operator, and incorporates a number of logical, user-friendly features: from its icon-based graphical interface with color coded alerts and updates, to the ability to follow production progress from a distance. "This enables one operator to do other tasks while overseeing the production on a Kongsberg table," explains Naess. "With clear display functionality and easy to understand icons, every step of operation can be readily identified for a smooth process."

Extended versatility

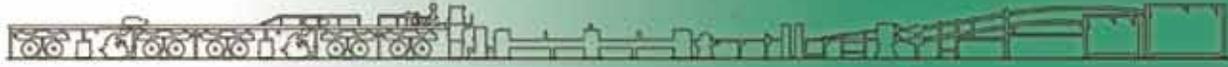
"As Kongsberg users work with a greater variety of production tools, they want to be prepared for any job and be more efficient, whether they are working on packaging or wide format displays," concludes Naess. "The development of the i-cut Production Console is also based on extensive input and testing from our users who contributed to the system's specifications. Their experience was very valuable to identify particular user features that bring ease of use to a next level. The iPC will add even more to the already high popularity of our tables and help customers become more productive than they already are."

The i-cut Production Console is available now, worldwide through all Esko sales and distribution channels for Kongsberg XN and V Series tables. Beginning in 2015, it will become available for most Kongsberg models, including upgrades for existing customers.



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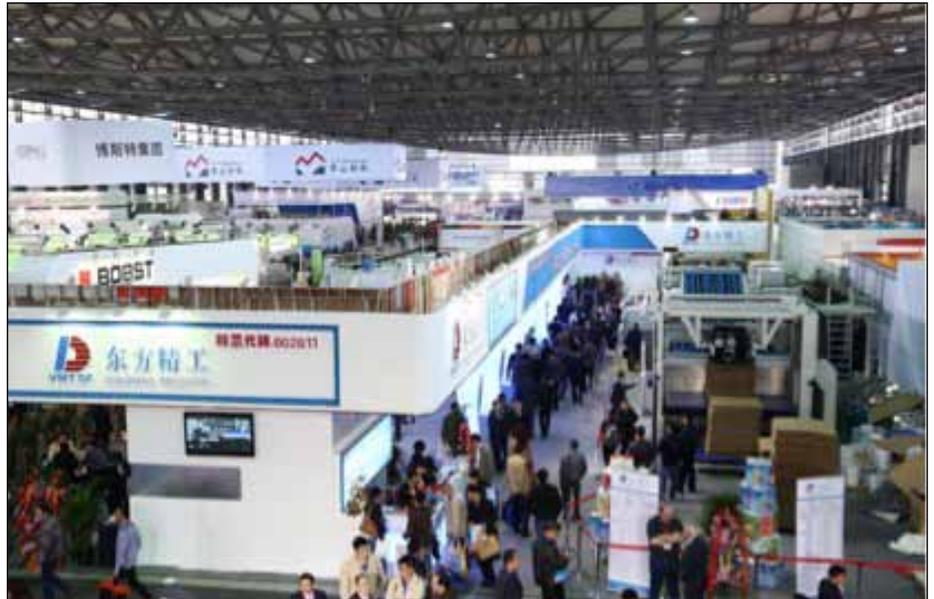


SINO Corrugated 2015 – A Preview.

SinoCorrugated 2015 to Open in Shanghai with Multiple Value-Enhancing Onsite Activities

As Sinocorrugated 2015 grows near, the top leaders in the world of corrugated cardboard manufacturing and processing will descend upon Shanghai to share their ideas and keep up-to-date on emerging trends worldwide. The event will have its grand opening from April 14 to April 17 at the Shanghai New International Expo Centre. Across an exhibition area of over 60,000 sqm, 600+ exhibitors from all around the world will present 1,400 pieces of corrugated manufacturing equipment and over 1,000 kinds of consumables

- The Asian Corrugated Case Associate 4th Management Committee Meeting. This event will highlight the Asia corrugated industrial trends and present an excellent opportunity to network with leaders of top corrugating companies in Asia.
- Other events like the China Paper Packaging Summit, China Corrugated Box Packaging and Future Outlook Marketing Development Leader Summit, Flexographic Development Summit 2015, are also being held.
- Factory tours will be open to visitors keen to get a first-hand look at daily production processes and assess the usage of different types of machinery.

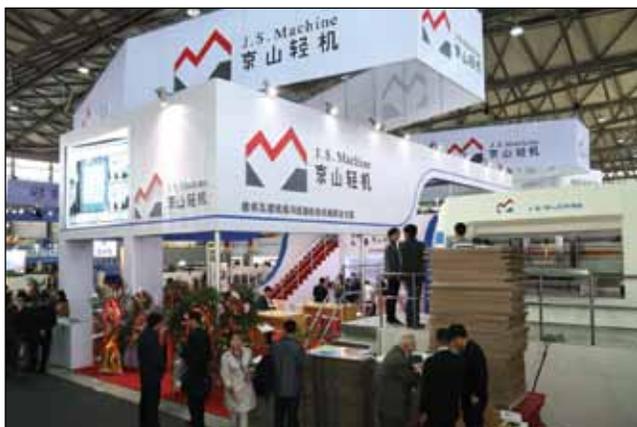


India Day, supported by the Federation of corrugated Box Manufacturers of India and the All India Federation of Master Printers, The countries' two most influential associations from the corrugating and printing industry, will bring together over 150 Indian buyers from across the giant sub-continental nation.

A welcome Gift and Lucky Draw are other attraction of India Day.

India Day is being organized on 15 April 2015.

“SinoCorrugated continues to evolve to incorporate ever more value, in the form of more onsite activities and educational seminars.





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Forthcoming Events

14-16 April 2015



**Bombay Exhibition Centre
Mumbai - India**

The 14th edition of IntelPack 2015 is going to be held from 14th to 16th April, 2015 at Mumbai, IntelPack-2015 co-located with Foodtek 2015 and Pharmapack-2015 is India's largest, longest running and most successful packaging show. The exhibition will showcase the latest in packaging machinery, packaging materials, packaging products, ancilliary equipments and systems.

14-17 April 2015



Shanghai New International Expo Center

SinoCorrugated is the largest business platform for the global corrugated manufacturing industry. In 2015, this event will not only showcase the latest corrugated equipment and consumables on the market, it will also bring together, under one roof, international buyers from established and emerging economies with high-spending trade professionals, for four days of brisk business.

The Origins of SinoCorrugated

The first ever edition of this corrugated show took place in 2001. At the inaugural

event, there were 171 exhibitors, all makers of corrugated product manufacturing equipment, on-site. SinoCorrugated 2013 attracted more than three times that number when it welcomed 600 exhibitors. In the corrugated box industry, SinoCorrugated is today not only one of the leading shows, it is also one of the fastest growing.

The boom in visitors to SinoCorrugated is even more remarkable. In 2001, the show welcomed 4,275 visitors from the corrugated box trade. Twelve years later, this number was six times higher as 26,293 visitors made their way through the doors of SinoCorrugated 2013.

19 - 23 May 2015



IPACK-IMA 2015

Fieramilano, Milan - Italy

IPACK-IMA is widely renowned as one of the most attractive global exhibitions for suppliers of technology and materials for processing and packaging, as it is capable of giving room, voice and momentum to all industry players by providing new ideas, initiatives and anticipations at each edition. In order to illustrate to the Chinese public the exhibition's main aspects and features, a press conference was held at the Embassy of Italy in Beijing which saw the participation of the Italian Ambassador, Alberto Bradanini as well as of the most relevant associations and operators representing this business sector in China.

26-29 August 2015

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17 - 20 November 2015



**Messe Düsseldorf Introduces
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in 2015**

Messe Düsseldorf has enhanced its successful product family of international packaging trade shows with new events in an exciting market:

SWOP - Shanghai World of Packaging, to be launched from November 17 - 20 November 2015 at the Shanghai New Exhibition Center (SNIEC)





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