



# The Corrugator

OFFICIAL MAGAZINE OF FEDERATION OF CORRUGATED BOX MANUFACTURERS OF INDIA

April - June 2015



**44<sup>th</sup> CONFERENCE OF FEDERATION OF CORRUGATED BOX MFRS OF INDIA**  
20-22 November, 2015, Hotel LE MERIDIEN KOCHI



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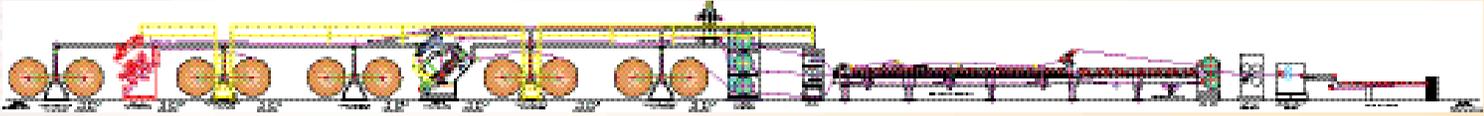
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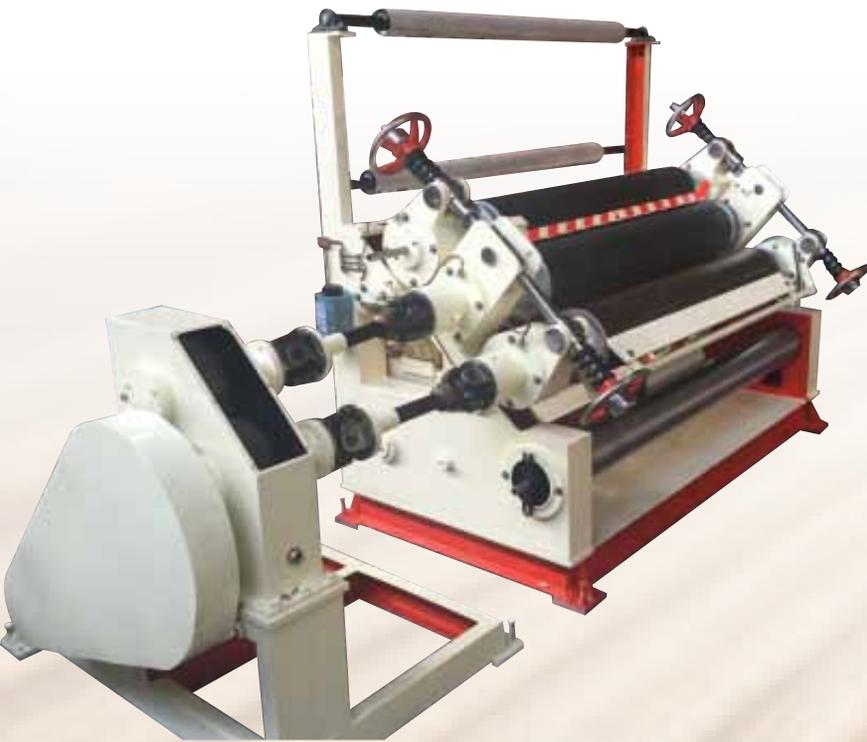
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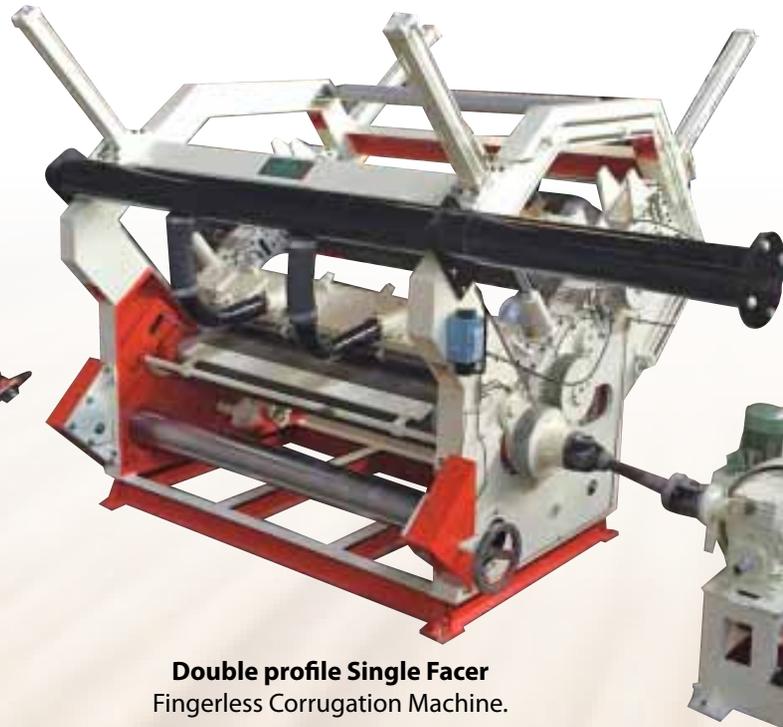
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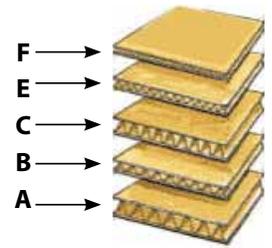


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Min. Feeding Size (mm)	300×500	300×500	365×685	365×685	450×765	450×765	450×765
Skip Feeding Size (mm)	1100×2000	1100×2400	1500×2400	1500×2800	1900×2400	1900×2800	1900×3200
Max. Printing Size (mm)	900×1950	900×2350	1200×2350	1200×2750	1600×2350	1600×2750	1600×3150
Min. Slotting size (L: mm)	230×60×235×60	230×60×235×60	265×60×280×60	265×60×265×60	280×60×285×60	280×60×285×60	285×60×285×60
Max. Slotting depth (mm)	225	225	300	300	400	400	400

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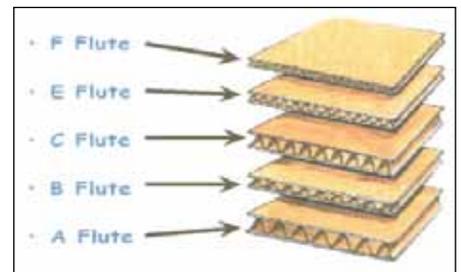
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# THE EDITORS' PAGE



*R. Suresh*



*Pulkit Shah*

With 1 year completed by the new government at the Centre its time to take a look and review the progress and development that has been initiated by the new regime.

Although the inflation has come down more than to 4%, which is 60% lower than the last year's figure, the prices at the ground level have not been a relief to the common man.

The industrial output and exports have come down.

Although some of the factors are not encouraging, there appears a hope that things will start moving at a faster pace in the months to come.

There is a lull in the corrugated packaging industry. The industry needs to gear up to grab opportunities that will open up soon.

It is reported that India's economy is growing at 7.5% in 2014 – 15 compared to last year. Both service and manufacturing sectors are showing improvement.

There have been a number of events and activities during the last few months.

WICMA organised seminar on Effective Ways to Improve Semi-Automatic Process on 13th June at Vasai near Mumbai.

SICMA had organized a seminar and group discussion on 13-14 of June at Pondicherry.

APCMA celebrated its Golden Anniversary in a grand manner during 25 - 27 June.

This golden event is featured in this issue. The FCBM Managing Committee meeting was held at Hyderabad in conjunction with the Golden Anniversary of APCMA.

Members of the FCBM delegation to Sino corrugated were delighted at the reception accorded to them by the organisers.

The exhibition showcased the latest technologies and developments in the corrugated packaging industry.

We bring you the Review of the show in this issue.

The countdown has begun for the FCBM Conference scheduled at Kochi.

This issue brings you brief details of the Conference.

We are sure FCBM Members will participate in large numbers in this Conference and make it a great success.

In this issue we also featured interesting and useful technical articles. To name a few: Caliper Maintenance; Converting Corrugated Materials; Preventing

Fracturing of the Liners; Genius is in Simplicity of the Machine and many more.

We also bring to the readers, the pattern of growth and development in Corrugated Industry across India.

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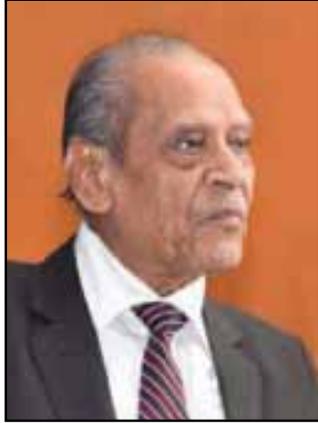
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# PRESIDENT'S MESSAGE



**P. S. Shah**

*Dear Friends,*

The Modi Government has entered into its 2nd year – with the 1st year report earning a distinction on many points. The economy is moving in positive terms, inflation is at its low, and industrial output is showing positive signs. A conducive atmosphere for growth has been created.

We, as packaging producers need to explore the current ambience to take up challenges that will be transformed into opportunities .

It has been an eventful quarter for FCBM. After the MC Meeting at Noida, I had an opportunity to meet and interact with many of our members.

I had a meeting with the office bearers at the FCBM Office in Mumbai. I was warmly greeted and welcomed. We had important discussions on matters pertaining to the Federation.

A large delegation of our members attended Sino Corrugated 2015 in April. The reception accorded to us by the organizers indeed was very touching. I was invited to speak on the INDIA DAY which was organized by the exhibition organizers.

The display of latest technologies for corrugated box makers was an eye opener. Visiting such international events keep us abreast with what is latest in corrugated, world over.

At Sino Corrugated I realized that there is a lot to learn from our neighbor in terms of technology development, business dealings and marketing techniques. The Chinese are indeed Smart guys.

They know that India is a huge market and a very cordial one too to do business.

Reason why they come in large numbers and have put their focus on Indian Corrugators.

Recently, I had the opportunity to attend the Golden Jubilee Celebrations of APCMA. The 3 day event began with a festival Cricket Match between the corrugators and paper mills – competing for the ICCL 1 CUP.

APCMA A new initiative has been launched as part of PMCC of FCBM to take the interaction with Paper mills to a higher and also informal level to build fellowship between the two interdependent industries with launch of Indian Corrugated & Containerboard League. APCMA is privileged to be the host of ICCL 1.

Corrupack Conclaves was planed as part of the Golden Jubilee Celebration. Eminent Speakers presented power-packed papers at the Conclaves.

It was a Golden moment for me and FCBM to share the dais with a galaxy of World Packaging Professionals.

We are all looking forward to the 44th FCBM Conference scheduled to be held at Kochi.

This is the first time Kerala Association will be hosting the Annual Conference of FCBM. We all must ensure that their first Conference is successful. Towards this we should extend our cooperation and support to our small brother. This is my request to all the regional associations.

Please ensure that members of your Association attend the Conference in large numbers. The venue of the conference is in the beautiful State of Kerala – which is regarded as “God’s own Country”.

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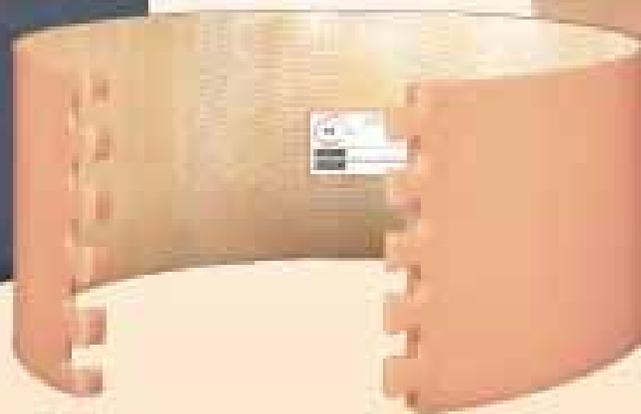


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# The Thought Behind Managing Caliper

During the last year, I have discussed many components that affect and controls the manufacturing process in our industry. I spent time defining a number of calibration practices we require in order to properly manage and control the “Nip” Settings in both Die Cutters and Flexo Folder Gluers. I also discussed ideas that will help improve our performances in tooling, machine settings and customer satisfaction. All of these areas of expertise are necessary ingredients that contribute to the financial success and stability in our box plants as well as our customer’s operations.

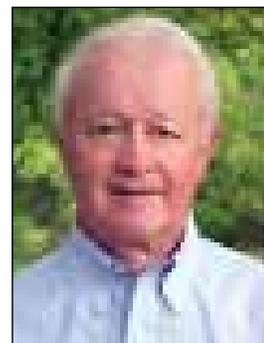
Our market today is changing ever so quickly in the direction of new designs in paper structure while customers are continuously changing their own requirements. There are so many different types of board combinations that are surfacing every month and we can’t sit back and ignore them. We, as box suppliers, should be aware that there are also “subtle” changes that are slowly developing in our industry. I believe that these changes are developing under the radar and as we are in a world of manufacturing, we must stay ahead of the curve.

We work in a unique industry where all of our plants maintain and operate an interesting equipment inventory. We have conventional design converting machines along with newer design Flexo Folder Gluers and Die Cutters. We also

operate brand new, high speed, computer controlled, multi-colored Flexos and Die Cutters. We share common orders between plants and we also do a great deal of “Drop Shipping” orders from locations closest to our customer’s facilities. Many of these same orders are made on different machine centers every time they are manufactured depending on the particular schedule for that day. “Caliper Maintenance” should always be consistent and should be on the top of the list every day for every order.

The first area that we should investigate is in the design department. I do believe that in many cases, our boxes are “over designed”. In our industry, Sales people generally obtain orders the following way: Visit a potential customer; obtain samples of boxes. The sales people then bring samples back to the office. We then

reverse engineer the box design and if the price is competitive and maybe the delivery environment might have an advantage, we can then take an order from a competitor. The actual application of the potential order is sometimes skipped. I do



**Dick Target**  
“On Target Consultants”

believe that many liners and mediums are excessive and maybe not necessary. Due to the fact that, “Historically”, converting crews have crushed the sheet too much in the feed sections and print stations well past the 0.003” (0.08 mm) caliper loss standards. Over the years, heavier liners have been necessary in order to sustain this process and supply a shipping container that will satisfy or exceed the customer’s requirement. Again, this is due to the excessive crushing that happens in the feed section.

In the case of new designs or new products for existing customers, the process is quite different. Product samples such as plastic bottles, folding carton samples or actual weighted products are supplied. Our design teams then have a real chance to shine with appropriate structure suggestions, inserts and product protection ideas such



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as partitions or foam support. RSC's, Wrap Around Designs and /or Die Cut Designs are then offered. I will say that all of these ideas are based on "Historical Data" and known manufacturing characteristics that are used in the plant. This is based on flute designs, flute profiles from the corrugator rolls, paper combinations and recent success stories. In order to keep current, I would suggest that the "Historical Data" information in the plant should be updated and reviewed by the design department on a regular basis. Manufacturing and Quality Control needs to be a part of this. You need to be sure that the box that you are supplying your customer is the one that he needs and not one that is over designed or under-designed. If you are a sheet plant and you buy your sheets from different suppliers, I encourage you to have design review meetings with your sheet feeders just to be sure that the sheets that you are buying are correct in all areas. I am specifically talking about Sheet Caliper.



As all plants make improvements on the corrugators and new papers are introduced to the plant, these changes should be passed along to the design department. Any new mechanical characteristics of the paper; (lighter weight liners), temperatures of the corrugator rolls (as a results of improvements to the steam systems), new types of showers in the Single Facers (moisture content) for the medium, all make a difference and contribute to the caliper of the sheet. We should also consider and understand the nip settings in the Glue Machines on the

Single Face Web. These points should dictate the nip settings in your presses due to these changes and improvements. We also know that sheet caliper certainly contributes to the compression strength numbers offered many flute combinations that are manufactured today. This type of information will then enable the design department to offer a better, more accurate designed, finished product that will certainly satisfy customer's requirements. This can also be a very strong "sales" point of properly managed and marketed.

Methods of recording sheet caliper from the corrugator also vary across the board or in some cases don't exist. I would encourage every corrugator crew or group to develop a plan to standardize methods on reporting sheet caliper from the dry end. Keep in mind that the paper changes on the wet end are a moving target. The different paper mills all supply liners and mediums that are specific to their own mill. Again, if you are a sheet plant, the caliper is going to be different all the time and these numbers need to be managed and understood by the converting crews. Remember: We have discussed a caliper loss in Flexo and Die Cutters of no more that 0.003" (0.08 mm) in the non-printed area in the converting process. If there is a 0.005"(0.125 mm) variation in the sheet itself from the corrugator, the Flexo and Die Cutter crews need to be aware of this so that proper settings can be made and managed.

The corrugator crews should indicate an accurate number that truly represents that "caliper" of the sheets within a specific order. They need to be sensitive to the fact that their customer, "The Finishing Department", will be checking their numbers for accuracy and consistency. The Finishing Department

should also support their own customers. The final customer (The End User) is also the one who pays the bills and is the one who completes the final inspection process. In previous articles I have discussed the fact that controlled caliper allows the press to print better and offer consistency in colour and registration. As we know, if the printing and colour is correct, the receiver will be more willing to accept the order without further inspection. If the colour is off and the shades are not correct due to caliper variation, there is a good possibility that the order will be over inspected and possibly returned. We know that there are tolerances and variations are a part of our business, so the caliper numbers should be properly and accurately reported. This industry is getting tougher and tougher all the time and we need to have current and more accurate information through out the process. As we have said before, orders are lost on a "½ penny" per box selling price and we need to continue to be better managers of our process.

Manufacturing cost is also a critical part of this market. As we have discussed before, costing is based on "Historical Data". It is the only basis that accounting has available to use for their cost analysis. Based on this fact, our manufacturing process should be reviewed on a scheduled basis based on liners, mediums and production speeds in both the converting department and the corrugator itself. If our speeds are improved based on machine settings as a result of better temperature controls, better product knowledge and understanding including caliper control, our cost



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numbers can be current so that they are more accurate. From experience, orders have been both lost and secured based on better, more accurate accounting practices due to more “current information” from manufacturing. In today’s market, “current and accurate” is a great tool for success.

One other very “positive” area to think about is one of communicating with the sales group and ultimately with the customer. If this process that I discussed today is an active one and one that is a culture in the company, it will better enable the sales people to discuss positive manufacturing and design control with customers. I know that there are a number of customers that never think about process control. They just want boxes. There is however, a group

of large vertically integrated companies in North and South America as well as Europe that thrive on “process control”. They demand it from all their various suppliers. We as box manufacturers need to be strong in this area and should position ourselves so that these customers have a high level of confidence in our process systems.

We need to be strong and proud of what we do both internally and in the market place. I would suggest that we keep our customers informed on how knowledgeable we are in the world of manufacturing and process control. Assure them that as their supplier, you are offering the right designed box coming from a controlled, well-managed manufacturing group.

Stay Strong and 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.

He teaches Converting Short Courses for TAPPI and is an active member of TAPPI’s TCC (TAPPI Consulting Council).

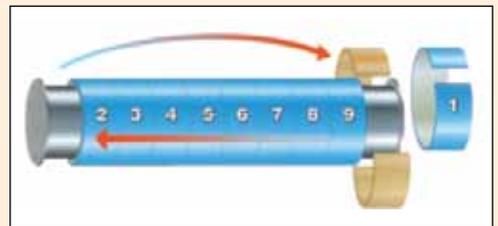
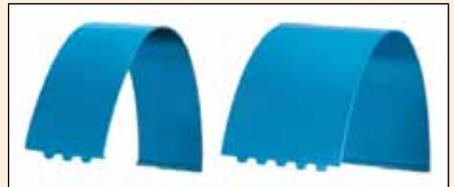
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# Converting Corrugated Materials

Ever since the advent of corrugated paper, converting it has created certain difficulties. In order to intelligently discuss approaches to dealing with these difficulties, we must obviously first define and examine those difficulties. In this article, we will primarily address the rotary conversion of corrugated, but many of the elements discussed here should have some crossover value to flat conversion also.

## Challenges of Corrugated

There are many obvious and some not so obvious reasons for the inherent problems associated with converting corrugated. Those reasons include:

The constant and extreme changing character of corrugated based on its moisture content and temperature. Dry cool corrugated is a totally different animal than wet, warm corrugated and each will ill act very differently in the converting process

Air-the very element that helps to create the unique properties of corrugated also creates major problems in conversion. Cutting, perforating, or creasing a material that significantly consists of trapped air, automatically creates several difficulties, one of the most obvious being corrugated's propensity for crushing, which of course is due to necessity of material compression prior to cutting. Another problem related to the air in corrugated is how the air reacts differently to converting attempts based on whether cutting is being attempted with the flutes or against the flutes. Obviously cutting against the flutes presents a more supported, easier to cut material.

Corrugated should not be cut in such a way that the resultant product edges are so sharp that they might produce paper cuts. This calls for a slight breaking of the product edges, which can be accomplished in a couple of ways we'll examine later.

Rotary diecutting has historically been less accurate than flat diecutting. One of

the primary reasons for this is that most rotary cutting is done by cutting into a blanket. The distance of penetration into the blanket changes the size of the blank being cut. That distance can be affected by the condition of the blanket, the press operator and the amount and type of rule being employed. We will discuss how the right kinds of rule can potentially increase the life of the blanket and the accuracy of the diecutting further on in the presentation. Clint Medlock recently had a very interesting article in The Cutting Edge that deals with the problem of achieving maximum accuracy from rotary dies. I recommend you read it if you haven't already done so. It contains some very helpful and insightful information. Clint and I both seem to share the opinion that rotary dies can be made to achieve significantly greater accuracy than is now commonly being produced.

Weights and thickness of corrugated vary greatly, often requiring different approaches to conversion and presenting different problems to be dealt with.

Operator efficiency also plays a very large part in corrugated diecutting. Proper training and motivation of the operator is extremely important.

Stripping of the scrap is absolutely critical to effective conversion of corrugated. Many variables affect this aspect of diecutting.

There is a vast selection of rotary serrated rules available today, both foreign and domestic. Choosing the right ones for a



**Gregory Zimmer,**  
Zimmer Industries Inc.,  
Hawthorne, NJ, USA

specific application can be very confusing and difficult.

It has been proven that curved rules in rotary diecutting should be somewhere between .020" - .030" lower than the straight rules because they cut with much greater ease than the straight rules, due to the lesser number of teeth penetrating, at any one time

Effective nicking of corrugated has often proved to be problematic. There are new rule products which may aid in that area

Finally, there is the issue of the increased speeds of rotary diecutting and the methods of optimizing and maintaining the achievable speeds.

## Characteristics of Rules

Now let's go over some general characteristics of most rotary rules. As many of you know, there are three primary manufacturers of rotary rule in the U.S.-- National, Simonds, and Zimmer. All three companies buy their cubic steel from the same sources and the steel they buy is virtually identical. The usual choices of tooth patterns and bevels for rotary cutting rules include 8, 10, 12, and 20 teeth per inch, with occasional requests for 3, 4, 4.6, 5, 6, 13 and 16, though many of these are often used for non-corrugated applications.



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The bevels usually employed include: centerface, sideface and off center, centerface.

In general the more teeth per inch, the more cutting pressure is required. Also in general, the more teeth per inch, the lower or shallower the gullets or valleys of the rule are. This fact may require less penetration in order to achieve the cut and in certain cases, may increase blanket life. As a rule, the more teeth per inch, the better the edge appearance and feel usually are.

All three manufacturers supply 4 point as the standard, but 2, 3, 6 & 8 point are also available for certain applications.

In flat diecutting of corrugated, a wave rule is sometimes used to break the sharp edges of the diecut product. This achieves a similar effect as the teeth do from the serrated rules used in rotary diecutting.

With any manufacturer's rule, the proper use of rubber is absolutely critical. Any of the major rubber suppliers will be happy to assist you in this arena, but let it be emphasized that if everything else about the die, the operator and the equipment is the absolute best, if the rubbering is wrong, you will not be successful--period.

## Problems & Answers

Now let's see if we can put together the inherent problems of rotary corrugated diecutting with the general characteristics of rotary rules and find out if we can get some answers as to how to tackle some of those problems rotary diemakers and diecutters face every day.

### Moisture

We spoke of the moisture content and temperature of corrugated being potentially problematic. As the diemaker, there isn't too much you can do to affect the moisture or temperature, other than possibly to caution and or advise the diecutter if you see evidence of this problem. However, if a particular plant very often runs wet board at higher than normal temperatures, there are ways to address the problems these conditions

often present. Reduced cutting pressure would help in these circumstances because hot, wet board tends to almost tear when significant cutting pressure is needed.

As we discussed previously, the fewer teeth per inch, the lower the cutting pressure needed. Therefore, in a plant such as the one described above, a tooth pattern such as 10 or 8 would probably be preferable to a 12 tooth, everything else being equal. Some of the newer, more exotic tooth patterns such as Arrowhead, Ultra 10 and Supercut might also be good solutions here. Remember though that everything else being equal, coarser tooth patterns often require deeper penetration and the attendant possibility of decreased blanket life.

### Air

Air was also mentioned as a potential problem. In general, coarser tooth patterns can also help in this area. Again, coarser teeth with reduced cutting pressure can help decrease the amount of crush that may occur. In the curved direction, cutting with the flutes, it is often important to have a sharp tooth one that sets or holds the material in place as it is being cut. A tooth that is not truly sharp may have a tendency to tear rather than cut, especially in the flute direction, cutting into air.

### Ideas

Regarding the edges of diecut products, and making sure those edges don't promote paper-cuts, serrated rules and or wave rules could attend to that requirement. The fineness of the tooth patterns is directly related to how fine an edge will be produced on the product. For an obvious example in rotary serrated rules, a 12-tooth pattern will provide a less rough or coarse product edge than an 8-tooth rule. An even finer edge then could be achieved by a 20-tooth pattern. Remember though that the 20-tooth pattern would take more cutting pressure than the 12 or the 8.

### Accuracy

As to the possibility of maximizing the dimensional tolerances or accuracy

of rotary diecutting, there are several influencing factors:

The condition of the blanket--the more level and less eaten up--the better.

The skills and attention of the operator. A poor operator can pretty much wreck any chance of dimensional accuracy. Too much pressure, too little pressure, damaged dies. poor machine maintenance can all contribute to inaccuracy

Of course, the dimensional accuracy of the die and the rules used in the die are extremely important. For example, height tolerance of the rule or inconsistencies of tooth depths or tooth forms can adversely affect accuracy. If everything is as it should be, penetration into the blanket can be kept to a minimum. This simple step can help blanket life, improve the product's dimensional accuracy and even enhance machine performance.

In addition to what's been discussed here, there have been several improvements relative to blanket performance by companies such as Dicar who make the Equalizer, which helps to compensate for some of the inaccuracies normally associated with rotary diecutting. These kinds of improvements may often make it possible to use rotary diecutting, for accuracy that previously was achievable only with flat diecutting.

## Varied Weights & Thicknesses

The various weights and thickness of corrugated create differing requirements of the rules employed. Again, it is often a balancing act of trying to achieve a nice edge, minimal cutting pressure and a reasonable amount of penetration. In general, the heavier weight, thicker boards call for the coarser tooth patterns. There are a couple of rules that claim more of a "Universal" usage than conventional rules, and you may want to look into those also.

### Stripping

Stripping, as mentioned, is absolutely critical to effective rotary diecutting and here is an area where the different bevels





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or cutting edges that are available may come into play. For many years it was thought that a sideface bevel created the perfect conditions for effective stripping. This type bevel tends to crush one side of the blank and leaves the other side basically uncrushed, providing an ease of stripping or scrap removal because the scrap is in a sense--directed. There are diemakers who still believe that sideface bevel is the best for rotary diecutting. The industry in general, though seems to be moving more toward off-center center bevels and true center bevels. The standard centerface bevels actually create a product edge that is basically identical on both sides of the cut and both these sides



are better in appearance and crush than the “bad” side of the sideface cuts. Neither side, though, is as good as the “good” side of the sideface cut. It is a compromise of sorts and provides a good solution for common cuts and the assurance that the rule cannot inadvertently be put in the die backward by the diemaker or the diecutter who may replace worn out rule. The off-center, center bevel is a bit of a hybrid, giving some of the benefits of a sideface bevel and some of the benefits of a standard centerface. Being off center, there is a possibility of putting the rule in backward. Returning to the issue of crush again; it is very important that the rule used minimizes crush to provide optimum stripping.

## Nicking

A new product has recently come to the marketplace It is used to provide nicking of corrugated. It is a pre-nicked cutting rule primarily for light corrugated stock and may be used in flat or rotary applications. This is a very promising concept. Simply explained, it takes the obvious idea that many small nicks can provide the same or greater strength than a few large nicks. By making the nicks smaller, they become less offensive both to the eye and to the touch but because there are so many of them, you do not sacrifice the overall strength of the nicked areas and the risk of the material being inadvertently broken apart during processing. This product presents some interesting possibilities and might warrant your further investigation.

## What to Look For

Here are some things to look for in any high quality rotary rule:

- a. Consistency of the following: rule height, degree of bevel, notch placement - at 1/2” centers, tooth form, bendability, curved I.D.s and burr-free teeth
- b. Ability to stand up to the mallet
- c. Clean, rust free product
- d. Safe packaging and ease of dispensing
- e. A fair price
- f. From stock deliveries on standard items.
- g. Reasonable turnarounds on special made items.

The three American rule manufacturers previously mentioned, Simonds, National and Zimmer enjoy international reputations as rotary rule suppliers and I’m sure that any of the three would be more than happy to assist you in the proper selection of the right rotary rule for you and your customers.

Source: The Cutting Edge.

Greg Zimmer graduated from Rochester Institute of Technology with a BS degree in graphics arts. He was CEO of Zimmer Industries for over 20 years and is currently the Sr. VP of National Steel Rule of Linden New Jersey. In his close to 50 years in the converting industry, he has invented several innovative steel rules, some of which were granted US patents. One of those patents included the curving of rotary steel without notches. He has been active in IADD for over 35 years, served as its President from 2011-2013 and was the 2013 recipient of the IADD President’s Award. Throughout his career, he has presented numerous converting programs and written many technical articles.

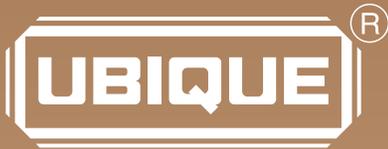
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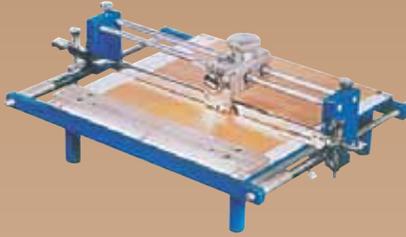
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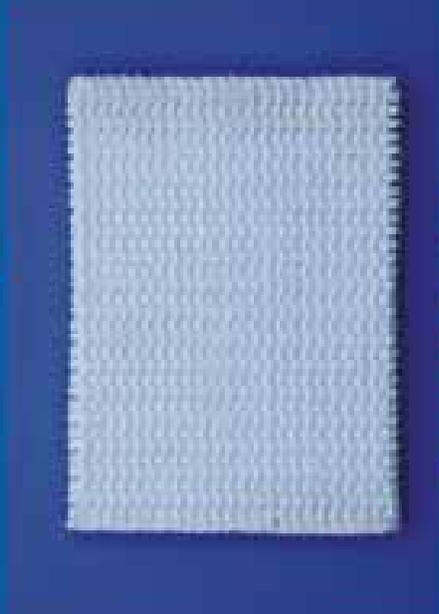
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# The Essence of Genius is Simplicity

## A professional's view of the hickey removal system from JB Machinery

The biggest enemy of the flexo printing process in the corrugated industry is dust, the sources of which are usually linked to the paper (due to fibres getting shorter) and the slitter and cut-off knives on the corrugator. Dust removal at the source of creation is probably the best option, but is not always possible and is not really effective enough to avoid defects in print.



JB Machinery contacted Technology Coaching in 2013 for comparable testing of using and not using their KleenPlate® for cleaning the flexo print plate during the print process. They wanted the tests carried out by an independent observer. My usual comment before accepting such a challenge is that they had to realise that such tests will show what they need to know and that the results often significantly deviate from what the client wants to hear about their product! JB Machinery® accepted the proposed method for objective testing and we started the project.

When doing comparable testing, we measure the difference between certain properties that are important for the print process. What are the key properties that KleenPlate® will have an impact on during printing?

- Dust spots in print;
- 'Filling' between dots;
- Colour consistency;
- Machine down time;
- Product waste.

### The impact on production?

Let's first look at what happens when a production run has to stop for washing flexo plates due to dust spots on the printed substrate. Some machines are equipped with vision/detection systems that will detect the defect, but it is likely that in most cases, a significant number of sheets have been produced with defects before the defect is actually noticed. Mostly, these are high quality sheets, printed on coated liner. There is therefore a significant risk for product waste before detecting the defect.

After detecting the defect, the machine is stopped. What needs to be done and what are the key considerations?

- Remove sheets with defects from the stack of printed sheets.  
Open the machine (you need to look at the safety regulations for entering the machine).



**Wilbert Streefland**  
Technology Coaching

Start washing the plates. This is best done with water and detergent using a soft cloth.

- Plates might need drying after washing.
- Close the machine.
- Check that the machine is still in register and that the pressure settings are still correct.
- Check to see if the ink is still in good condition.
- Re-start the machine.
- Remember that it is likely that the first 10 sheets might not have the correct colour and need to be separated from the stack.

Can all this be done in five minutes? It is not very likely. Even when using automatic plate wash systems, you might be a few minutes faster in getting the machine running again, but the disruption and waste is of the same magnitude. This means that you have the same number of waste sheets that need to be separated from the finished goods you send to the customer and you need to check the colour and colour to colour registration before commencing normal production. The target of using KleenPlate® is to have zero ink or dust build-up disruptions during production, allowing uninterrupted work flow.

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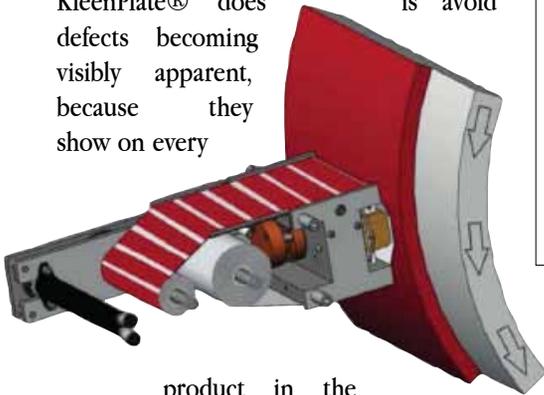
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## What is KleenPlate®?

The KleenPlate® system design is what I refer to in the title of this article — ‘The Essence of Genius is Simplicity’. Below is what the system looks like.

How does it work? At regular intervals, the KleenPlate® unit traverses across the print plate, wiping off the ink and dust using a fresh section of cloth. After traversing over the print plate, the ‘cloth band’ makes one step, so a fresh section of the ‘cloth band’ is ready for the next cleaning interval. KleenPlate® can be set so it continuously cleans the print plate or it can be set to do it at regular intervals. The KleenPlate® system trigger can also be based on defects found in print if the machine has a vision system that can detect errors in print.

It is important to realise that a 100% defect free print is not possible. What KleenPlate® does is avoid defects becoming visibly apparent, because they show on every



product in the same position. What do we mean by this? It is very unlikely that an observer will detect a defect in print when he looks at 100 repeats consecutively where the defect only occurs once. But an observer would notice the defect if that defect occurred, for example, 25 times in a row in the same spot.

## Comparable testing

The comparable testing undertaken was based on running an order where the KleenPlate® system was set to only clean half the print plate. This way, we had equal printing conditions across the machine and could compare the area using the system and not using the system. Let’s look at the colour deviation over the first 200 sheets produced.

The target of using KleenPlate® is to have zero ink or dust build-up disruptions during production, allowing uninterrupted work flow.

When not using KleenPlate the graph shows a clear, larger variation after 20 sheets produced. The area where KleenPlate® was applied is stable in terms of colour.

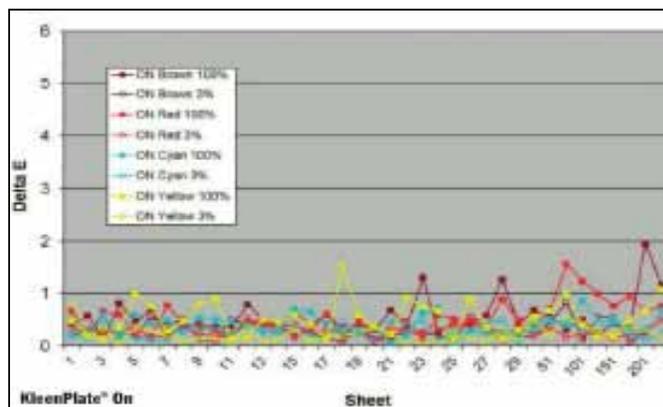
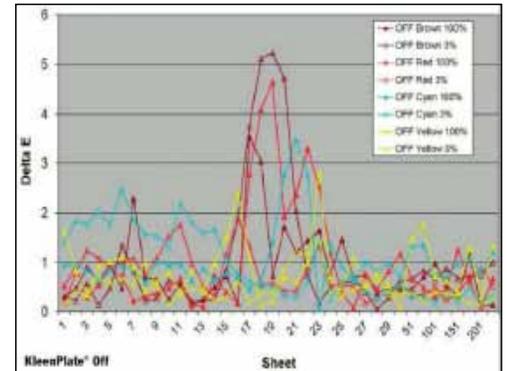
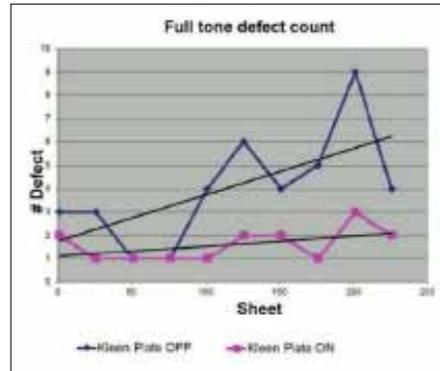
Next, let’s look at the number of defects found in the same ‘full tone’ area when using and not using KleenPlate®.

The count is done visually. The number of defects increases when not using KleenPlate® — noticeable within 200 sheets from starting the test.

Conclusions The KleenPlate® comparable tests show:

- Colour is more consistent when using KleenPlate;
- There are less defects recorded in a full tone area and this number stays low when using KleenPlate; Cleaning stops during production are avoided;
- Product waste is minimal due to print defects.

KleenPlate® effectively stabilises colour variation and the number of defects in print, resulting in no print defects related to production stops. The knock on effect is that with fewer production stops, production can be increased and waste can be reduced significantly.



Wilbert Streefland has worked in the corrugated industry since 1992. During this time, he has been Technology Development Manager for SCA Packaging as well as Technical Manager at Stork Screens. He started Technology Coaching Bvba in February 2005. He can be contacted at wilbert@tcbvba.be

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We thank author as well as the publication.

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# Preventing Fracturing of the Liners

## Preventing Fracturing of the Liners on Corrugated Substrates

Troubleshooting the cracking of scores is a highly technical process which, if not methodically analyzed and systematically examined, can lead to highly expensive reruns.

Fracturing of corrugated corn billed board is a problem that can test the will and patience of many.

Investing time and effort into structural design and graphics, convincing the customer you are the best supplier for the project, only to have the finished product arrive with fractured scores can be both embarrassing and frustrating. Understanding all one can about the entire converting process is crucial in controlling and minimizing the occurrences.

Three variables which contribute to fracture are the combined board, the cutting die, and the cutting surface. Recognizing where to look will simplify your plan to prevent it for future production runs.

### Combined board

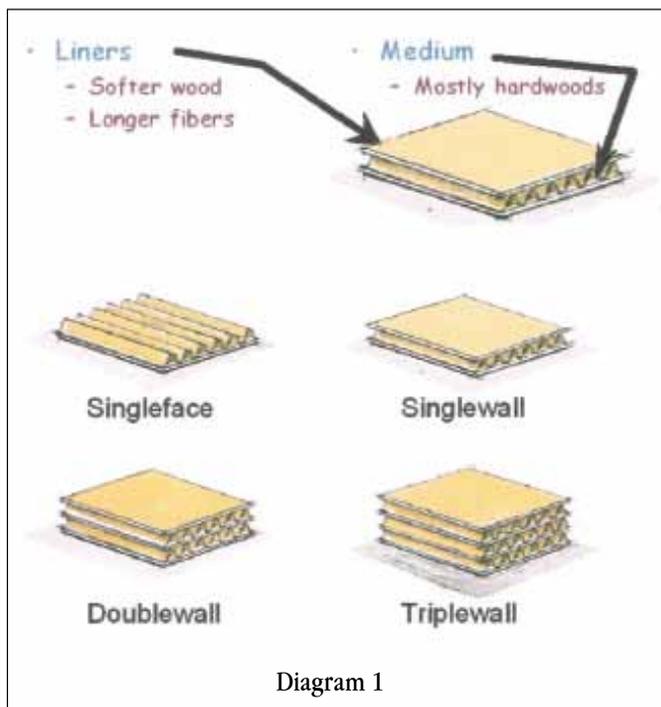
Beginning with a brief explanation of the substrate, combined corrugated board is made by bonding a flat surface (liner) to a fluted surface (medium). One medium and one liner surface is bonded to create "singleface." A liner on each side of one medium creates "singlewall." Multiple mediums with alternating liners are bonded, providing better cushioning, support or stacking properties. These

are often known as "doublewall" or "triplewall." Two mediums can be bonded directly together for similar purposes (dual arch).

See Diagram 1.

In simple terms, the liners are made from softer wood fibers, such as pine, which are longer in fiber length.

The fluted medium is often made from harder woods or shorter fibers. A combination of heat, pressure and adhesive (often starch) is utilized. The bonding process is not the least bit simple and for the many who have seen it, included, it's a wonder how the crews do as well as they do in their effort to provide a consistent product.



**Richard Patch,**

Dicar- Inc, Pine Brook, NJ, USA

Liners and medium are identified by "basis weight," the actual weight of material over a specific area. Quite often 1,000 square feet or 1 square meter is the basis "area" used in this identification. Two very recognizable weights are 42# / MSF (lbs. / thousand sq. ft.) or 205 GSM (grams / sq. mtr.). Combining various weights is the strategic approach to package performance. The combination yields a "bursting strength" (Mullen) or edge crush test (ECT) measured in PSI. For example, 42 liner x 26 medium x 42 liner will give a Mullen Burst result of not less than 200 lbs. and an Edge Crush reading of 32 lbs.

For years more pulp and fiber meant a higher basis weight, therefore a stronger case. However innovations in paper making have allowed the reduction of fiber by compacting and creating a "more dense" liner without sacrificing package performance regarding stacking and such.

See Diagram 2.

The other characteristic playing a key part is the flute profile. Designated by a letter, with no significance to progressive caliper. Each profile has dimensional properties such as flute or "crown" height and "lateral flute spacing" which additionally when strategically employed, give a project its distinct advantages.

*Cont. on - 39*

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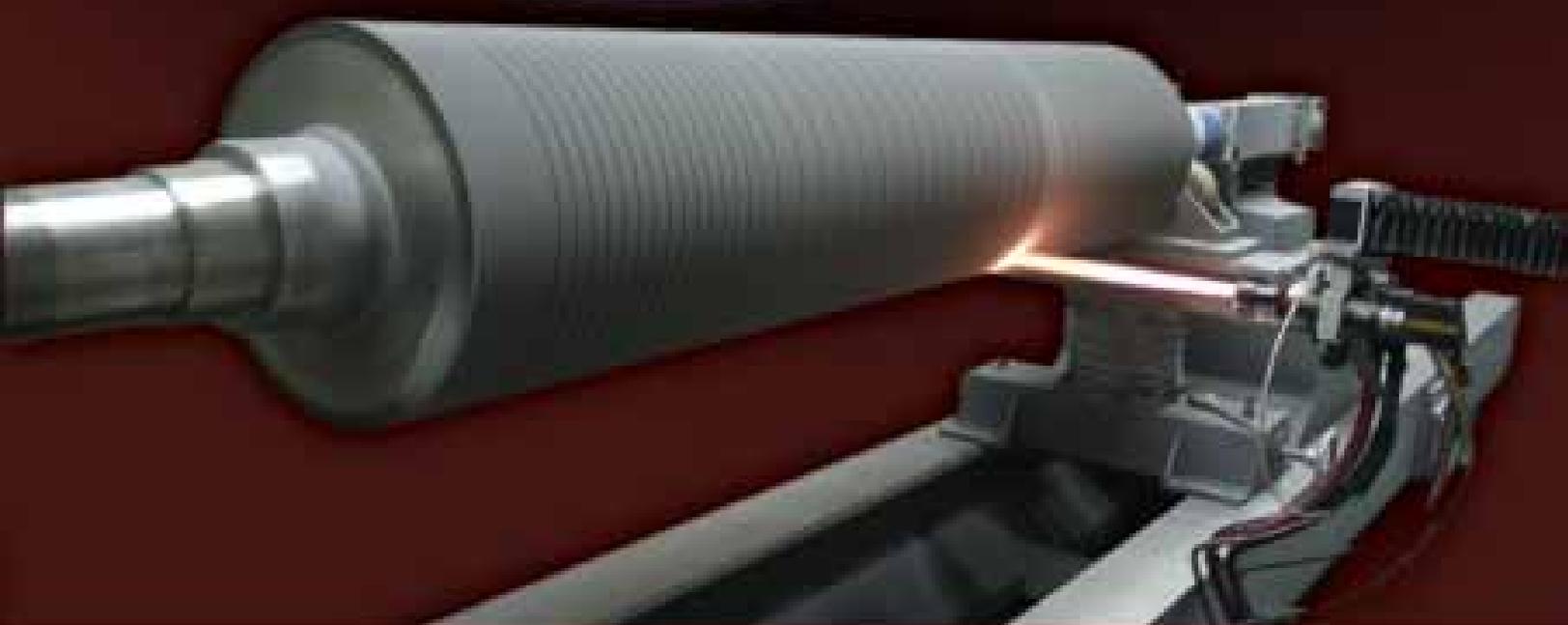
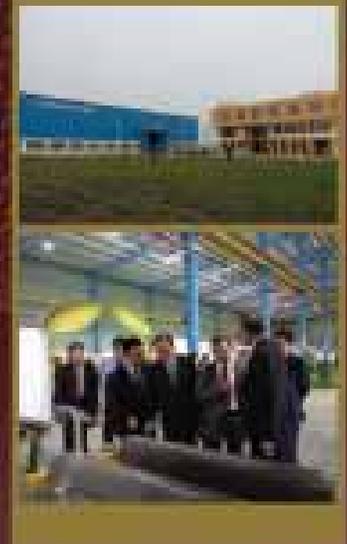
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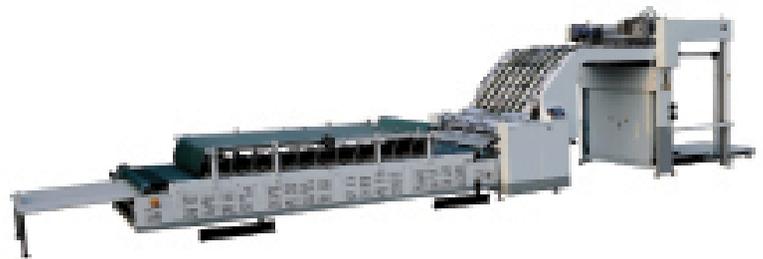
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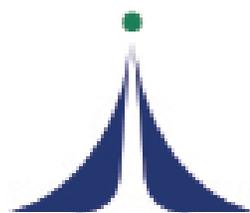
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LBS/MSF	THICKNESS	GM/SQ M	THICKNESS
26	.008	127	.20 mm
33	.010	161	.25 mm
38	.011	186	.28 mm
42	.012	205	.30 mm
69	.020	337	.51 mm
90	.027	439	.69 mm

Diagram 2

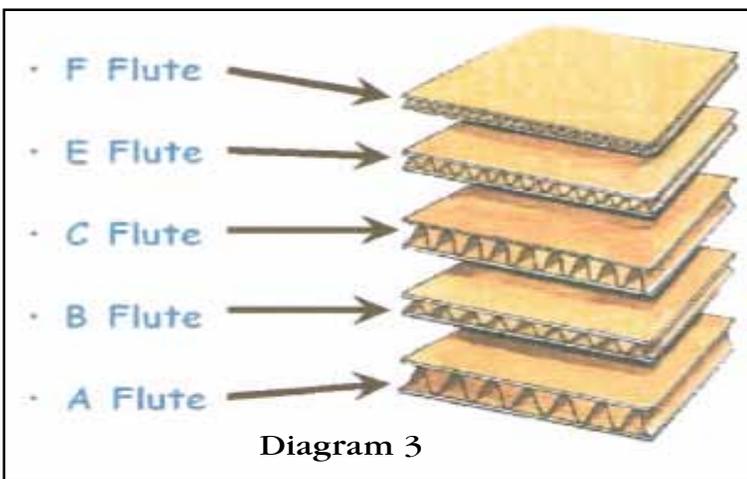


Diagram 3

See Diagram 3.

A detailed technical publication about corrugated substrates is available through the IADD and even further detail can be found at [www.tappi.org](http://www.tappi.org).

Many times after recognizing a job where the scores have fractured, a discussion begins: "It's the die." "No, it's the paper." "I say it's the anvils." Determining the root cause is most efficient by approaching each variable systematically and consider the possibility. Visible defects such as inner liner fracture along the score line are the most frequent. Others are "checking on the out-side or opposite side of score line, flaking near scores or cutting edges and between cuts in perforations such as the "land."

Let's systematically analyze the most common complaint...

Defect: inner liner fracture along the score line, (parallel to flutes on a soft anvil rotary diecut)

Substrate: 200 # C Flute

### Cutting Die

The cutting die is rather simple to inspect and measure for a range of possible causes.

Crease Height: The height will be determined by the board combination and flute profile. No counter crease or matrix can be used. If we were scoring with no counter ONTO a steel to steel platen such as a clamshell or auto platen, the score height for this 200 # C flute is "no higher than 905"(23.0mm) providing the cutting rule is .937" (23.8mm). Simply calculated by adding the calipers of linerboard and medium, this is often referred to as "compressed linerboard thickness."

The 200 # test is comprised of 42 x 26 x 42. From the chart above, 42# = .012" (3mm) 26# = .008 (2mm). Total of all three is .032 (.8mm). Scoring with a differential of less than .032 (.8mm) for this example serves little to no benefit. I only need to deform and compress the paper to define a line as to fold or bend. Doing so in the direction of flute can often be done with far less pressure. Many diemaker's specifications will concur with a "specification" of .937 cutting and .900 or 905 crease for steel to steel cutting applications.

See Diagram 4.

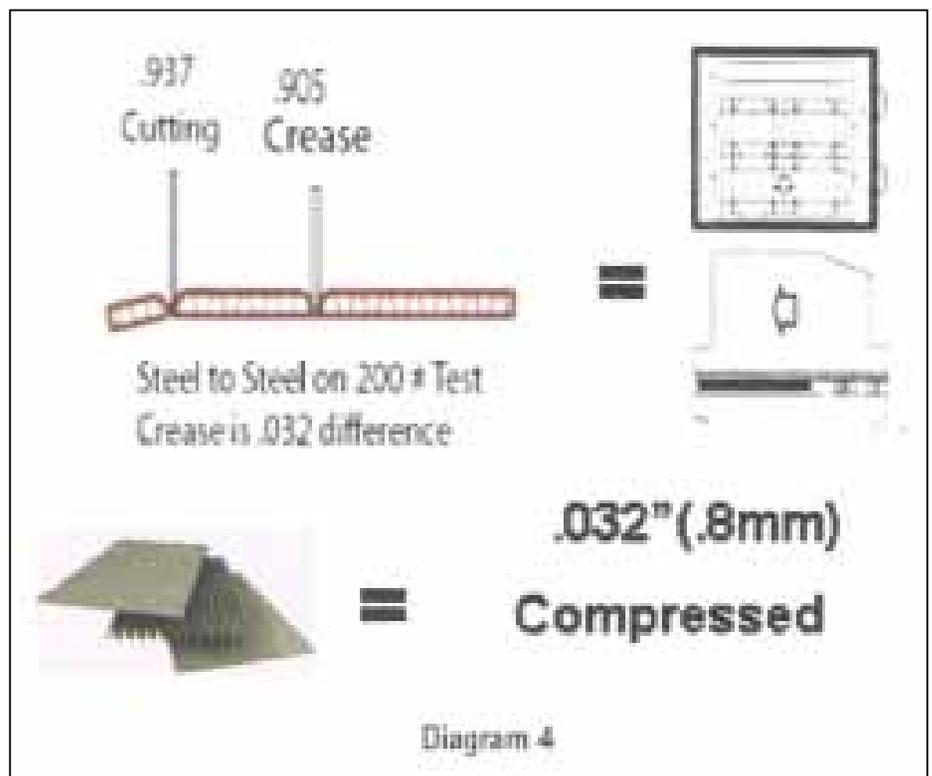


Diagram 4



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Therefore, to determine score height for soft anvil rotary we use the same calculation but must consider rule penetration INTO anvil. (.080) 2 mm.

See Diagram 5.

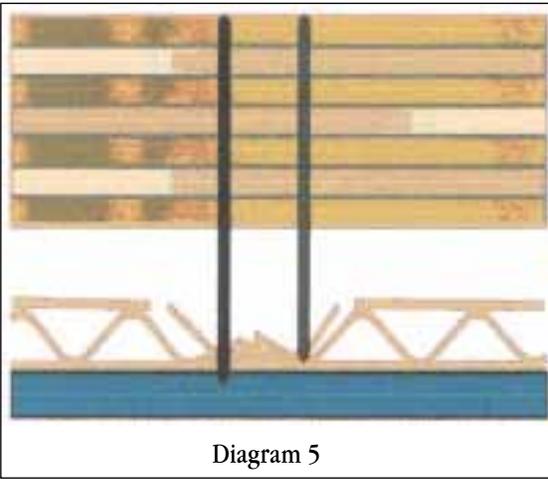


Diagram 5

Cutting rule height .970 (24.6mm), less rule penetration (.078) (2mm), less compressed board (.032) (.8mm) = creasing height (.860) (21.8mm).

The fact we are cutting INTO a soft urethane surface, the resistance is not the same as that of a carbon steel plate. Therefore a wider tolerance is acceptable here (.840-.870") (21.3mm-22.1mm).

Many contributing factors regarding the anvil and penetration will be addressed within this article but to stay with the trouble-shooting; if my score can be lowered while still allowing the stock to bend consistently, then do so. If my cutting rule height and score height are only a .080 (2mm) difference, I will likely have fracturing once the anvil covers become slightly worn.

Crease Width: Typically 4 point (.056 wide) (1.42mm) profile is used. Wider pro-file scores such as 6 point and 8 point are available to distribute pressure point. These wider scores are available in a constant 4 point base permitting changes with existing dies.

See Diagram 6.

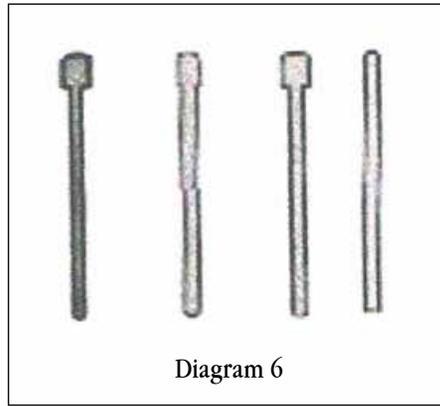


Diagram 6

Mounted Die Board: Is the cutting die mounted securely to the cylinder? Is the cylinder free of tape, paper dust and other matter which can act as makeready to the scores? Are the rows of bolt holes near the rules as to secure it snug to the cylinder?

See Diagrams 7 and 8.

Bridging or Notching: Are the creases notched equal to, or more than, the thickness of the plywood? Scores not fully seated to the cylinder apply pressure as if they were of a greater height.

Kinked Scores at Bridge Position: Are the creases evenly seated to the contour of the cylinder? Sometimes they are installed unevenly by die repair or the diemaker, resulting in a "high spot."

See Diagram 9.

Sharp Corners on Scores: Are the creases rounded to remove the sharp corners which can pierce and begin to fracture the liner? As in the above photo, rounding scores by grinding or processing with punch tooling eliminates a potential piercing effect to the inner liner without influencing score value.



Diagram 7

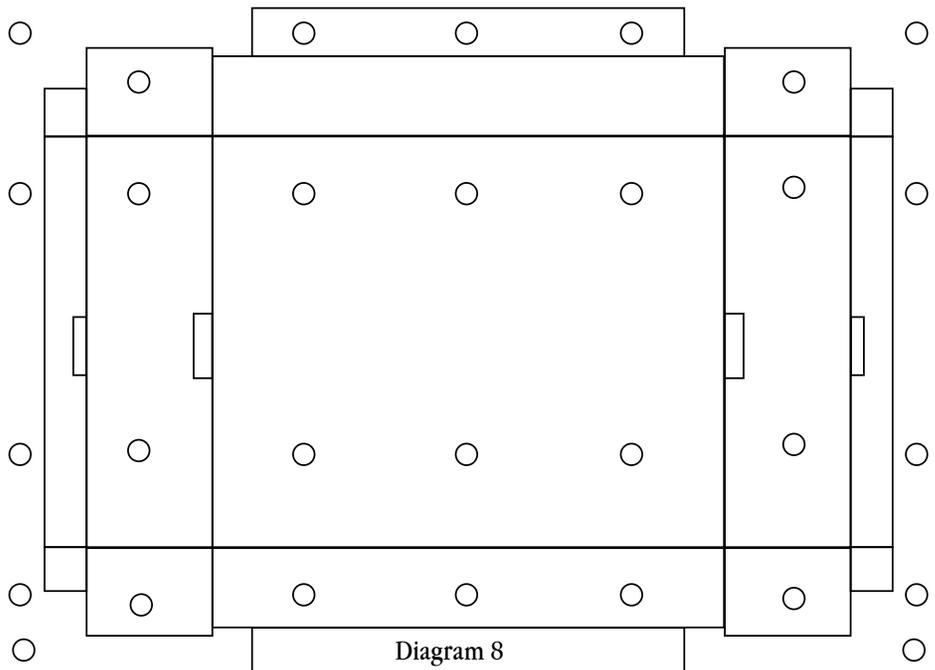


Diagram 8



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Diagram 9

**Use of Rubber on Scores:** The use of soft closed cell rubber along scores does little in the prevention of inner liner fracture. Cush-ion Crease is a much more firm extrusion offering similar profile as surface mount scores; however since the scoring rule is steel rule, abrasion is not an issue, therefore height reduction is not a concern. Apply the Cush-ion Crease .020-.030" (508-.762mm)

## Machine and Cutting Surface

The second variable to troubleshoot is the machine carrying the cutting die. A cutting die may have proper score height flanked by cushion crease and still experience cracking. Four things on the machine to look for are:

**Cylinder Parallelism:** Are the upper and lower cylinders of the diecut section of machine parallel? Check this by removing urethane anvil covers at each end and gapping the distance between with adjustable parallels. Be sure from drive side to operator's side is within .008" (0.2mm) distance of each other. An often recognized scenario of this problem is when diecutting a large format project covering a good portion of the width on the machine; the scores may be more defined from one side to other. If the project is a one-out base to a POP display, you may witness cracking on the "shipping scores" just on one end. More seriously is when running 4 or 6 wide on something like a beverage tray. It's possible a portion of the trays will not erect at the customer's end for being scored too lightly.

**Anvil Concentricity:** Just as checking parallelism, concentricity is equally as important. Overworking flex o folder gluer diecut sections by cutting large complete cutting dies with a great percentage of horizontal cutting rules can be detrimental to the journals and bearings of the diecut cylinder. Not quite built as robust as complete diecutters, I've seen slight deflection and deformation of the journals resulting in the diecut cylinder turning like a cam. Check with the parallels as mentioned above by segmenting the cylinder into four 90° sections, such as a clock: 3,6,9 and 12 o'clock. Check both ends and the middle for variations which, if different, will result in greater pressure at the closest position, when spinning elliptical like that of a planetary orbit.

In addition regarding concentricity, an anvil rotation program following your geometric product mix will reduce unevenness of the cutting surface.

See Diagrams 13 and 14.

**Consider Surface Mount Profiles:** Extrusions made from polyethylene or specially formulated polymers mimic scoring profiles of that used in converting shafts such as on slitters, corrugator dry ends, printer/slotters and flexo folder gluers. The "shouldered" profile limits the penetration of the scoring bead and gently crushes the paper adjacent to the bead, drastically reducing the chance of piercing and fracturing along the score line. Two things to consider when using such products are to measure the plywood for thickness, as it will influence score height being surface mounted, and to realize kraft paper is abrasive and will eventually wear the bead away often to the point of no score bead is present. Also available is Aluminum; it is a little more difficult to work with, but reduces the wear from kraft abrasiveness.

below the tip of the steel score, allowing the bead to function while "cushioning" the adjacent flutes. It is available in a range of heights to compensate for wood thickness variation and score height choice.

See Diagram 11.

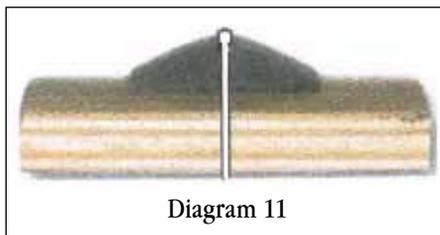


Diagram 11

**Perforation Rules:** Fracture often occurs in perforations on carton. Cushion Crease can be used here as well, or consider using a perforation with a greater distance between "cuts," i.e. use 1/2 x1 (12.7mm x 12.7mm) instead of x 1/4 (6.35 x 6.35mm).

See Diagram 12

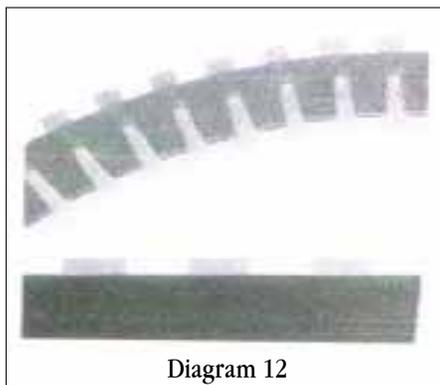


Diagram 12

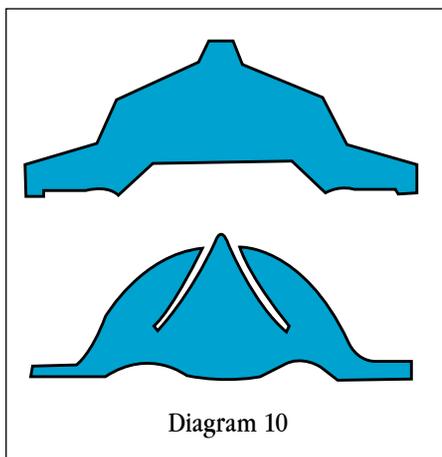


Diagram 10

Cont. on - 47

# Turnkey Engineering Solutions

**Vacuum absorption fingerless type high speed single facer machine group**



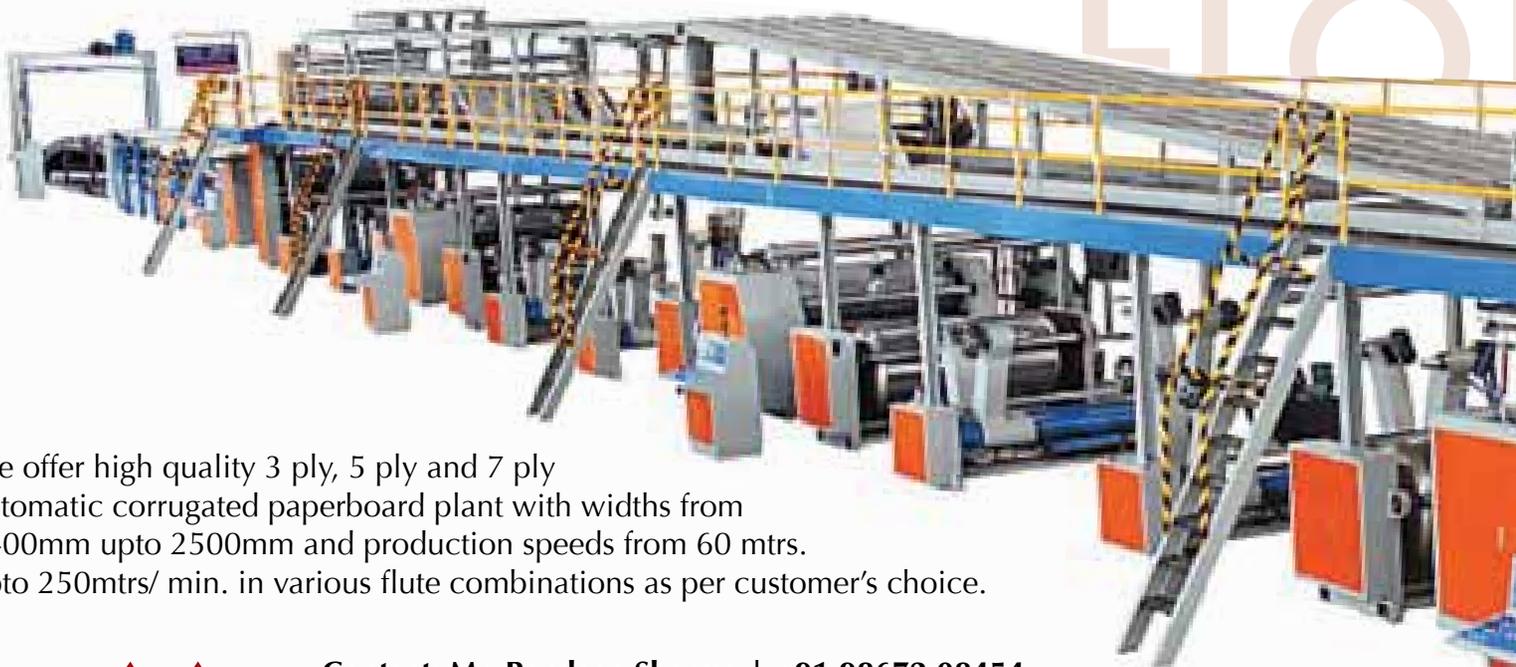
Single facers also available in finger type economic models from 1200 upto 2500mm widths in electric, hot oil and steam heating system.

**High speed PLC based fully auto 4 color printer slotter with rotary die cutting, lead edge feeding system:**



Also available in Lead Edge Feed, Kicker feed and chain feed systems without PLC in various sizes.

## AUTOMATIC CORRUGATED PAPERBOARD PLANT



We offer high quality 3 ply, 5 ply and 7 ply automatic corrugated paperboard plant with widths from 1400mm upto 2500mm and production speeds from 60 mtrs. upto 250mtrs/ min. in various flute combinations as per customer's choice.



**Contact: Mr. Randeep Sharma | +91 98672 08454**

**Flotech Machineries Pvt. Ltd.**

A-275, TTC-MIDC Mahape, P. O. Ghansoli, Navi Mumbai - 400 701 (India)

Telefax: +91 22 2778 0209, 2778 0212

E-mail : cartonmachineries@gmail.com • flotech2002@yahoo.co.in

www.cartonmachineriesindia.com

# to the Corrugated Packaging Industry

Our excellent infrastructure available at the Navi Mumbai facility, an emphasis to offer only good quality machines to our customers backed up by vast experienced technical support team to deliver efficient and prompt after sales service and maintaining adequate essential spares for all machines that we offer, helps us in serving our domestic and international customers in a better way.

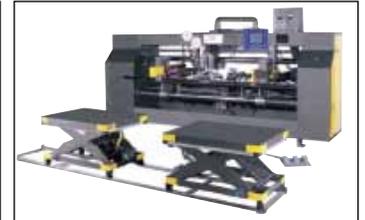
## Other products:

- Auto and semi auto folder gluer machine.
- Auto and semi auto flute laminator machine.
- Semi auto 1- piece and 2-piece box stitching machine.
- Lead edge feed, kicker feed and chain feed rotary slotting, creasing and slitting machine.
- Lead edge feed, kicker feed and chain feed rotary die cutting machine.
- Thin blade slitter, scorer machine.
- Pasting machine.
- Platen punching Machines.
- Sheet pressing machine.
- Manual stitching machine.
- Auto bundling machine.
- Heating systems for automatic paperboard production lines and single facers.

## Semi Auto Flute Laminating Machine



Semi Auto Folder Gluer Machine



Semi auto box stitching machine  
(Single piece & Two piece)



Finger Type Single Facer



# INSUN

# CE

## AUTO FOLDER GLUER + DOUBLE STITCHER + COUNTER EJECTOR + BUNDLER



Counter Ejector

Stitcher

Strapping

Wire Holder

**INSUN**  
Manufactured by  
**InSun Co., Ltd.**  
64, Hwanggeum 2-Ro,  
Yangchon-Eup,  
Gimpo-City, Gyeonggi-Do,  
Korea 415-843  
Tel : +82 32 564 5013  
Fax : +82 31 997 5014  
Email : [insun@insunco.com](mailto:insun@insunco.com)  
[www.insunco.com](http://www.insunco.com)

**India Office**  
Address : PLOT NO. 26, METHA NAGAR,  
M.M.C. POST, CHENNAI - 600 051.  
Mobile : +91 98849 50600

Specifications			
Model No.	ES - 25	ES-28	ES-32
Max. Sheet Size	1,000 x 2,200 mm	1,200 x 2,500 mm	1,200 x 2,900 mm
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	

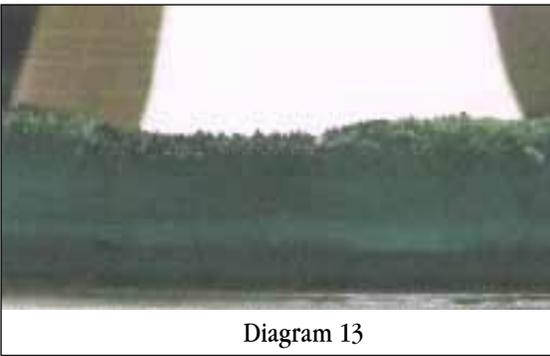


Diagram 13



Diagram 14

Cylinder Oscillation: Rotary soft anvil diecutters have a mechanical method of distributing wear to the cutting surface extending quality converting results over a greater period of time. They index in the radial axis as well as “oscillate” laterally. The distance traveled laterally is about 1.25” (32mm) over a period of 30 seconds as the machine is running. Without this feature running properly, grooves or “wagon tracks” begin to appear in the cutting surface.

See Diagrams 15 and 16.

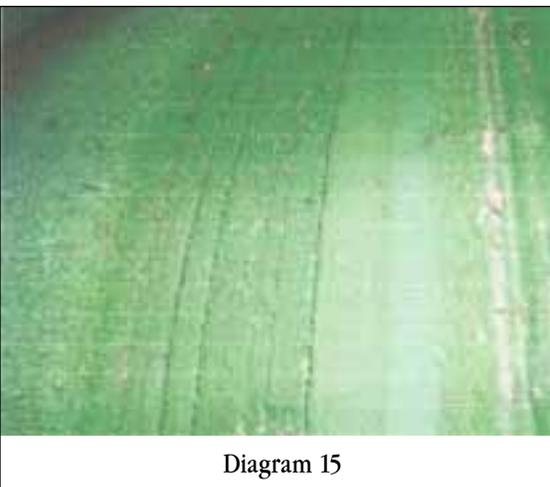


Diagram 15



Diagram 16

Anvil Firmness: To complete the cutting process, anvils must be firm enough to offer proper resistance resulting in the substrate cutting completely through. The pictures above show how the operator in an effort to continue cutting, in-c-reased pressure to drive the cutting rules deeper and deeper into the urethane. Even with rotation and oscillation\_ cutting excessively deep can create a surface much like that of a shag rug. Not firm enough to cut completely but perhaps firm enough to sup-port the linerboard resulting in score fracture.

See Diagrams 17 and 18.



Diagram 17

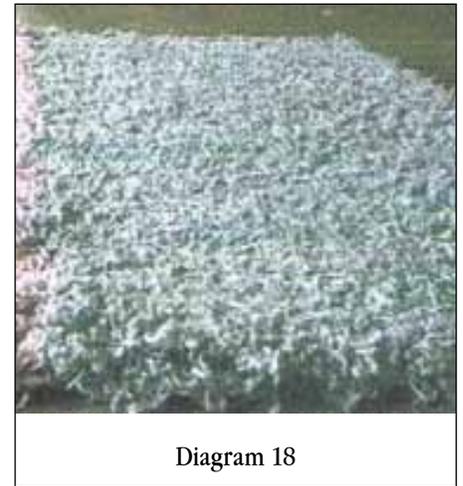


Diagram 18

Analyzing the combined board as a root cause is very difficult as we typically lack the proper instrumentation and knowledge to analyze the most complex variable. In addition it’s unlikely we will scrap a load of board in need of converting. We will strive to over-come the challenges. Nevertheless, as originally mentioned, the more we learn, prevention is the best solution to most any problem.

Moisture Content: Moisture content in combined board is crucial in the ability to successfully score. Generally, 7.2% moisture is the target for exiting the corrugator Many factors contribute in hitting that target. How much moisture is lost before diecutting can be measured with a special moisture meter designed to measure one single sheet and help understand how much moisture loss has occurred. Scrapping the load is unlikely if that has occurred. Laying down moisture by “printing” water has shown some success.

Fiber Length/Density: Virgin fibers are longer than recycled fibers. Fiber length, just as the length of a stick, will flex before snap-ping. Therefore shorter fibers are more susceptible to fracture. Innovations in paper -making have produced thinner caliper , densely packed, high performance linerboards which can yield the same structural values when substituted for heavier virgin liners. In addition to fiber length, the rapid release of moisture in these tightly packed liners create drier combined board, with less time lapsed.



*Dedicated to Flex Printing*



### **TPM-PrintSTAR**

Fully Computerized Flex Printer Slabber Die Cutter with Dryer and Varnisher

- Single point entry for all job data settings, with computerized control and order memory
- Extended wheel type lead edge feeder with vacuum assist for precise board feeding
- With vacuum transfer for stable and precise printing registration
- Duplex ceramic miller roll and double blade system for high graphic printing with flexibility
- Varnishing and multiple drying systems for high-end packaging requirements



### **TPM-JUMBO**

Fully Computerized Flex Printer Slabber Die Cutter

- Jumbo machine specially designed for big size heavy duty board converting
- Extra strong frame and cylinders for robust machine building with high running speed
- Single point entry for all job data settings, with computerized control and order memory
- Extended wheel type lead edge feeder with vacuum assist for precise board feeding
- Stable and reliable transmission system for high running precision in long run

**TECHPACK MACHINERY INDUSTRIAL CO., LTD.**



Address: No. 11, Wuyang Road, Hengyang City, Hunan, P.R. China  
Tel: 86-734-82095888, 82095889 Fax: 86-734-82095888 Email: info@techpackmachinery.com

[www.techpackmachinery.com](http://www.techpackmachinery.com)



A 36# high performance liner made from recycled fiber is often substituted for 42# virgin as similar structural values. The 36# recycled, releases moisture twice as fast as 42# virgin. Mottled white and full bleached white liners, while nice for graphics, can result in exterior checking on the spines of folds.

See Diagrams 19 and 20.



Diagram 19



Diagram 20

Plant Conditions: The Relative Humidity in a plant has a big effect on the rapid moisture loss from time exiting the corrugator. The board leaves the corrugator at some level of moisture content and within several hours reaches a stable moisture content in relation to the plant RH. Warming up

cold air inside a plant during the winter can leave the RH in the plant at 20%. This can result in combined board which has adapted to conditions, yielding as low as 3-4 percent moisture content. When these conditions exist, try to convert as soon as possible retaining the moisture from the corrugator.

Corrugator Settings: This is an area I have no direct experience with. What I can say is temperature settings are crucial, and speed certainly is, to production. Failure to control these as a “team” will result in combined board difficult to score. Hotter and faster corrugator settings must be closely monitored. Trapping moisture toward the glue line by controlling temperatures and the amount of liner wrap at the single facer and double backer pre-heaters are key factors in producing quality combined board. Look to Tappi for TIP Sheet 0304-37.

Lastly I want to mention about full mounted litho labels. Mounting 70 – 80 # text weight stock with full glue coverage to double backer is one scenario. This application is most troublesome, as the entire surface is saturated with adhesive, which often becomes very brittle once fully cured, resulting in cracking. Another is 10 Point or 80# cover to single face. This permits flexibility, as the adhesive is only applied at the flute tip, generally resulting in much better results.

I have been told but have no hard evidence that if the grain direction of label is applied across the corrugation, cracking is more evident.

Ink pigment content and UV coatings are additional factors often stated, yet hard to analyze in a post process evaluation.

Troubleshooting the cracking of scores, as you can see, is a highly technical process which, if not methodically analyzed and systematically examined, can lead to highly expensive re-runs. The more you seek and research the three contributing factors and broaden your knowledge, I’m certain you will see a reduction of occurrences. 1.

Richard Putch is Product Manager for diecutting supplies and services at Dicar Inc, headquartered in Pine Brook, NJ, USA. With over 28 years of experience in converting and diemaking, Rick has worked as a pressman, business owner, and in Executive management. He presently is a course instructor at the Wagner Educational Research Center in Ontario, CA, USA. He has written papers for an assortment of trade journals and has taught several courses at 7APPI, AICC, ACCCSA and IADD, as well as various corporations in several countries. Contact Richard by phone at 1-412-979-3775 or by email at rickp@dicarcom. For more information on Diem; Inc., visit the company’s website at www.dicarcom.

This article is reprinted with permission from the International Association of Diecutting and Diemaking’s monthly magazine, The Cutting Edge.

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IADD also co-presents Odyssey, a bi-annual trade show and innovative concept in technical training featuring a hands-on Techshop where training programs come alive in an actual working diemaking and diecutting facility inside the exhibit area. Visit [www.iadd.org](http://www.iadd.org) or call 1-815-455-7519 for more information about IADD.

## FCBM Delegation visits Sinocorrugated 2015 at Shanghai.

SinoCorrugated 2015 had its grand opening on 14th April at the Shanghai New International Expo Centre.

Sino Corrugated plays an important role in accelerating the growth of the global corrugated industry. This year, the show welcomed a large number of industry executives from markets such as the Middle East, South Africa, Southeast

Asia including India and Latin America. People from the domestic Chinese market, were the maximum among the visitors.

Along with the running machinery on Exhibition, SinoCorrugated had several concurrent events. 'China Corrugated Industry Training Week' offered visitors a selection of interactive on-site and off-site events. The main highlights included:

- TAPPI International Seminar
- ACCA's 4th Management Committee Meeting
- Global Conference of Corrugated Industry Trade Agencies
- Iran Day
- India Day
- America Day
- Japanese/Spanish Pavilion Cocktail Party
- Flexographic Development Summit 2015
- Corrugated Box Packaging and Future Outlook Marketing Development Leader Summit
- Creative Corrugated Fashion Show.

Over 100 experts discussed industry topics on the second day. Attendees learned about testing to TAPPI standards; better process understanding; insight to the functions and capabilities of various



types of equipment; business outlook for the United States and china; steam joints, siphons and systems for high speed corrugators.

Reed Exhibitions also confirmed that the Sino Corrugated South 2016 will be held at the Guangdong Modern International Exhibition Center on 14 – 16th April, 2016 for more information, Please visit [www.sino-corrugated.com](http://www.sino-corrugated.com)





## INDIA DAY

The organisers of SinoCorrugated 2015 extended a warm welcome to the FCBM delegation in a special event at SinoCorrugated 2015.

Reed Exhibitions together with their strategic partners FCBM organised India Day Celebrations, which took place on 15 April.

It was a unique event, specially designed for corrugated professionals across India to meet with each other. Furthermore, associated members had access to customized business match-making sessions with global leading suppliers to enable them to keep up-to-date with the latest industry information and emerging trends.

The FCBM delegation had the opportunity to enjoy finest food served in a stylish dining hall and receive an official welcome gift, as well as other exclusive souvenirs. Mr. P. S. Shah, President, FCBM was a special speaker at the INDIA DAY Event. He spoke about the activities of FCBM and the bond of friendship and cooperation between FCBM and Reed Exhibition.



### Excerpts from the address delivered by Mr. P. S. Shah, President FCBM on the "India Day" at Sino Corrugated 2015

It's a unique event and matter of great joy to celebrate India Day here in Shanghai.

Organizing India Day here demonstrates the profound relationship between our two nations and also between Sino corrugated & F.C.B.M.



It's a matter of great pleasure for me to announce that our Federation F.C.B.M. and Sino Corrugated has joined hands to co-operate and exchange

views, & technique to meet the challenging demands of packaging to pace with the developing World.

We are separate only by language but united by the commitment to the betterment of industry

Specially when highly populated two nations of the world join hands nobody can stop their march for progress.

The policy of our government is to encourage the manufacturing activities. The government is keen to nurture innovation and protect intellectual property.

The rapid automation of modern high speed sophisticated machines aided by new technology is highly sought for and welcome by our fraternity. It will help in increasing the productivity and reducing the cost of production.





### 3-Day Practical Course in Testing

WICMA conducted 3-Day Practical Course in Testing from 21st to 23rd May at WICMA R & D Centre

This course is conducted by WICMA R&D Centre, which is equipped with the latest computerized finger touch equipment. The course objective is familiarise participants with latest technology in testing and analysis. Practical knowledge is imparted by hands on training coupled with theoretical overview during the course.

### One Day Seminar on “Effective Ways to Improve Semi-Automatic Process”



The above course was conducted on 13th June 2015 at Hotel Golden Tulip, Vasai, Near Mumbai.

**Eminent industry specialists presented papers on the following topics:-**

- Mr. Ashu Jhingan Spoke on Zonal Heating;
  - Mr. Rupesh Desai presented a Paper on Materials Handling;
  - Mr. Baldev Mehta talked about Adhesives;
  - Mr. Sanjay Bothra's topic was Shaftless Reel Stand;
  - Mr. Amit Jain dealt with Inventory Control;
  - Mr. Sachin Keni presented a paper on Feeder for Platen Punching;
  - Mr. Anil Loya explained about Auto Stitcher and
  - Mr. Harshad Sheth gave ideas as to Savings in Electricity.
- The Seminar was a grand success with over 135 participants.



## Know Your Industry - A New Initiative by WICMA

Know Your Industry is a unique initiative by WICMA to give its members a platform to enhance their knowledge, share their expertise in key areas of our industry and more importantly give an opportunity to meet and interact with fellow members on a regular basis.

### The first session was on Wastage Control in Manufacture of Corrugated Boxes

The first part of the Session hosted by Shri Pankaj Shah was an eye-opener to the areas where wastages can occur in our manufacturing processes and also touched upon some of the remedies could be undertaken to overcome these wastages.

The second part of the session hosted by Shri Dilip Patel was on the wastages actually identified in a manufacturing facility and an interesting analysis on how they were eliminated using very practical tips.

There were more than 35 attendees who participated actively with queries and sharing of their own experiences.



### The second Know Your Industry session was on "ADHESIVES".

Adhesives is a key component in converting kraft paper into corrugated paper board.

A better understanding of performance characteristics of adhesives will always help the manufacturer to deliver the optimum product to his customer.

The first Speaker, **Mr. Z.M.Bhatari, Managing Director Associated Trading & Mfg. Company** helped in understanding some of the characteristics of adhesives like gel point, viscosity, solid content etc. which will go a long way in helping to select the right adhesive for the type of paper used. Using optimum adhesive reduces operating costs, increases quality, reduces waste and can offer higher performance from lighter weight papers.

The second speaker, **Mr. Sandeep Agrawal of Minoo Containers Pvt. Ltd**, a WICMA member, presented his case studies of practical use of various adhesives in his factory.

He explained the method of calculating coverage and consumption, thus helping to evaluate adhesives. He also highlighted the benefits of using Neutral Adhesives.

WICMA was very hopeful that this session would be very beneficial to all and was confident that each one of the members would have something valuable to take back after attending this session.

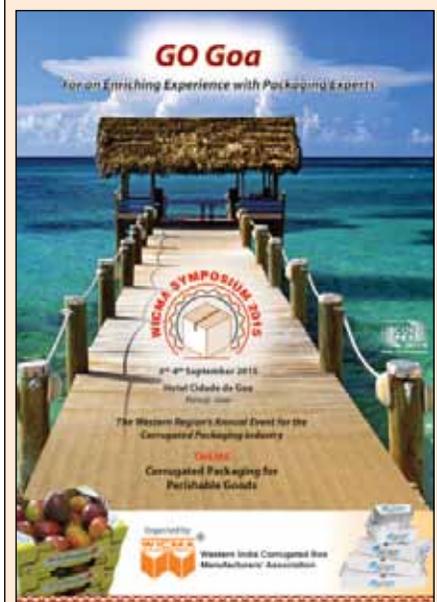
WICMA encourages its members to share their experiences in the industry and discuss case studies that will help other members gain knowledge and help the industry grow collectively.

## UPCOMING EVENT



**3<sup>rd</sup>-4<sup>th</sup> September 2015**

**Hotel Cidade de Goa  
Panaji, Goa**



WICMA's Annual Symposium is a two day event, which attracts corrugated packaging manufacturers, users, as well as others connected with the industry from all over Western India as well as some other parts of the country.

It is the MEETING PLACE for the who's who connected with the corrugated packaging industry in the Western Region.

The Symposium provides a common platform for members and others to exchange views and discuss issues related to the progress and development of the industry.

## 'SICBMA Grow together Conference'.

### Seminars, Group Discussions at Grand Serenna Hotel & Resort, Pondicherry.

SICBMA organised interesting seminars and group discussions on 13 – 14th June 2015 at Pondicherry.

The Seminars, Group Discussions were very useful to the participants.

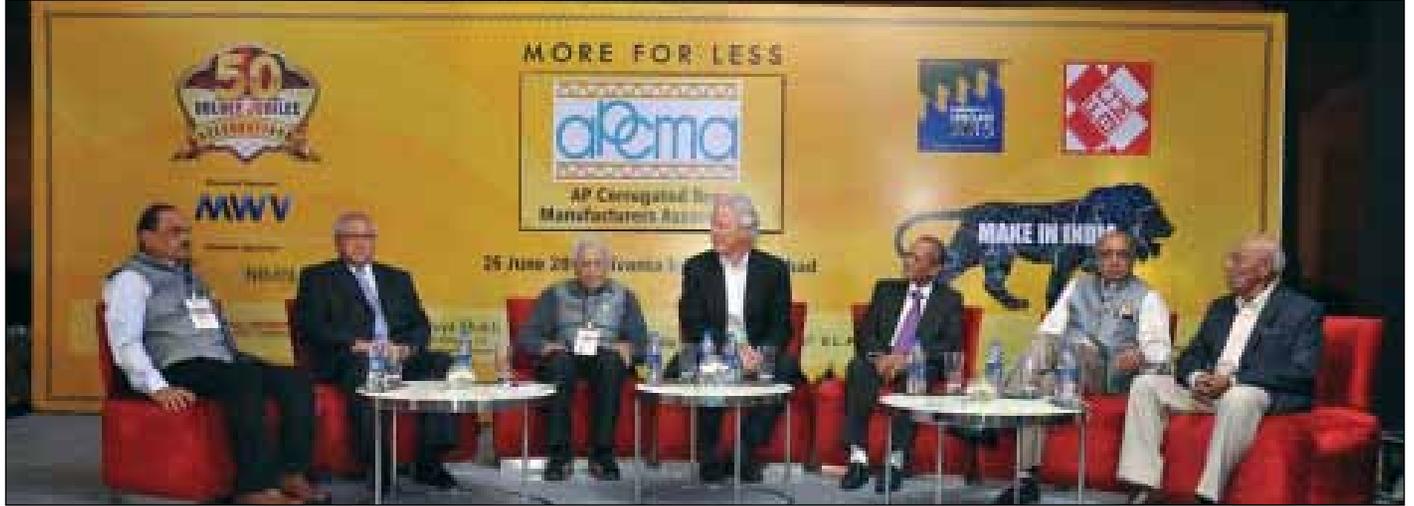
Nowadays box manufacturing has become more scientific.

Acquiring knowledge about various plus, minus characteristics of raw materials is much more important in manufacturing customized boxes.

Mr. Basker Reddy, the speaker who had come all the way from Hyderabad for this Seminar gave relevant information about the usage of Adhesives and it's required quality, quantity to produce best corrugated boards.

Mr. Venketaraman, former Joint Director, IIP, updated the members about various prevailing testing parameters. He also explained the correlation between various inputs of raw materials and finished box in simple language.





## APCMA celebrates their Golden Anniversary

Anadhra Pradesh Corrugated Box Manufacturers Association (APCMA) organized a Bouquet of activities during the 3 day celebration: from 25th to 27th June 2015.

The presence of Mr. Carl Bohm, President International Corrugated Case Association (ICCA) and Mr. Dennis Colley, President Fibre Box Association (FBA) and other eminent personalities in packaging, lent an International Touch to the 3 day event.

It began with Indian Corrugated & Containerboard League (ICCL), a new initiative launched & hosted by APCMA.



*The ICCL Winner!*

In keeping with the International Yoga Day celebrated all over the world, APCMA organized Yoga Program on 25th morning for all the participants. Yoga program was ably conducted by Sunil Purswani. The level of participation was very heartening. Yoga should result in keeping body & mind healthy.

**Indian Corrugated & Containerboard League (ICCL)** – a full day event on 25th June with a number of matches between Box Plants & Containerboard/Paper Mills was thoroughly

enjoyed by all participants. A new relationship has been forged between Paper Mills and Box Plants. Container Board team won the finals. Hopefully this initiative will be carried forward by FCBM by rotating it across India so that it becomes a regular event. A Joint meeting of Containerboard manufacturers & Box plants was held on 26th morning with active participation from all sides and we should be enjoying the fruits of the endeavour soon.

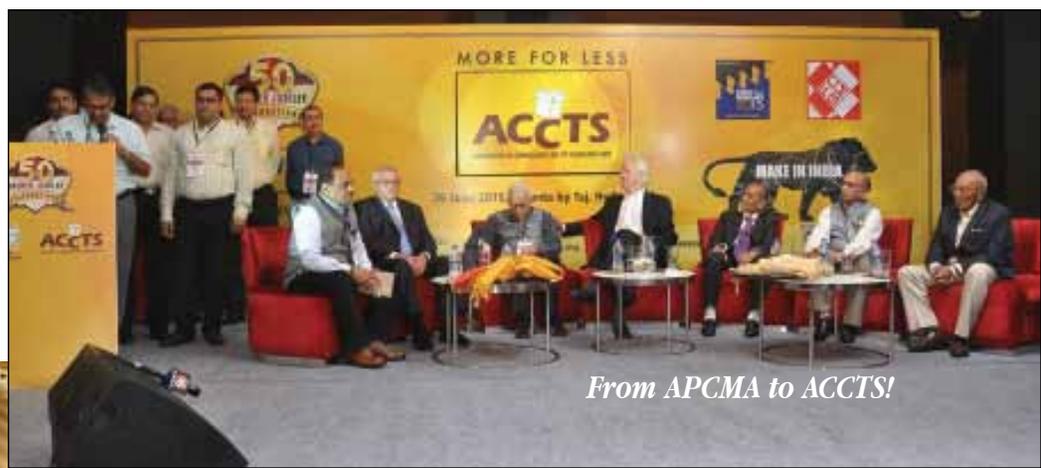
CorruPack Summit 2015 – 4th Edition of Corrupack Summit was held post lunch on 26th June. Panel Discussions were on i) Impact of GST on Economy, Paper & Box businesses. Moderated by



*Cricket Match in Progress*

CorruPack Summit 2015 took off on 26th June followed by Celebrations of Golden Jubilee of APCMA and Rechristening & Formal Launch of APCMA as ACCTS – Association of Corrugated Case of Telangana State.

On 27th June APCMA hosted the 3rd Managing Committee meeting of FCBM.



*From APCMA to ACCTS!*



Mr. Carl Bohm,  
President, ICCA



Mr. Dennis Colley,  
President, FBA



Mr. P. S. Shah, President, FCBM



Mr. M. L. Agarwal, Chairman  
Corrupack Summit



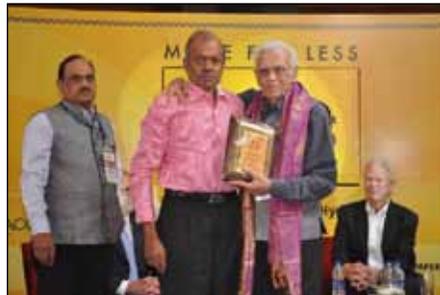
Lighting of Lamp



Presentation of Mementos



M. L. Agarwal and very eminent mentors namely Mr. B. Shankar from Ernst & Young, Mr. V. Bhaskar IAS (Retd) former Special Chief Secretary- Finance of Andhra Pradesh; Mr. C. V. Sarma VP, ITC PSPD and ii) More for Less moderated by Mr. Carl Bohm President ICCA & Mentors Panel consisting of Mr. Rakesh Tripathim MWV Papers on Total Cost of Ownership (TCO) Approach to More For Less. Mr. Dennis Colley talked about Current global scenario & Outlook for Box Industry & implications for India; Mr. Jack Johnson, MarquipWardUnited made a presentation on Technological developments enabling quality improvement & Cost reduction. Mr. Anders Isaksson Paccess / BillerudKorsnäs spoke about New formats of sourcing. Both the topics were well received by participants with very active interaction with Panelists.



Two Veterans Together



Delighting the participant with Classical Dance

**The Golden Jubilee of APCMA** was held with the following on dais: Mr. MVM Bharath; President APCMA; Mr. S.S. Raju Senior most Member of APCMA; Mr. M. L. Agarwal, Chairman Corrupack Summit; Mr. Carl Bohm, President ICCA; Mr. P. S. Shah, President FCBM; Mr. Dennis Colley, President FBA;



Section of Audience





*Subcommittee Meeting in Progress*

and the star guest of honour – the eldest of one of the senior most Past Presidents of FCBM Mr. M. K. Ramasami. All the dignitaries spoke highly of the achievements of APCMA. Appreciation Awards were presented to senior FCBM Past Presidents & office bearers, APCMA Past Presidents etc.

The Formal event was followed by a very engrossing Kuchipudi dance recital by Yamini Reddy Daughter of Famous Kuchipudi exponent Raja Reddy. The Appreciation for the dance was evident from the fact that Even though it was quite late all participants sat glued to their seats right through one hour performance. Wining & Dining accompanied by a very scintillating musical program by Parleen Gill led to large numbers enjoying & dancing till late in the night.

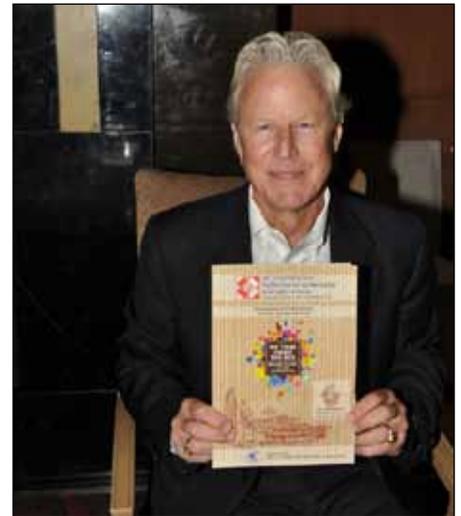
**Rechristening & Formal Launch of APCMA as ACCTS**

– Association of Corrugated Case of Telangana State: Due to bifurcation of the state of AP and the fact that a vast majority of members are from Telangana State and Hyderabad is also in Telangana it was decided to rechristen

APCMA as Association of Corrugated Case of Telangana State – ACCTS. Amid a lot of fanfare the new name & Logo were launched just before the formal program concluded. Metamorphosis of APCMA to ACCTS will result in an organization that has 50 years of history behind it and as the acronym signifies will be full of energy & action.

FCBM Managing Committee Meeting. Report on this will be sent by Secretariat. We only wish to mention that for the first time President of ICCA, on invitation from FCBM President participated in the meeting giving global perspective of Corrugated packaging. Mr. Carl Bohm was a big hit with members.

We at ACCTS are dedicated to continue the high standards & legacy set by APCMA. We will continue to strive to give more for less to all members of ACCTS & FCBM.



*The invitation to Upcoming FCBM Conference*



*FCBM Managing Committee Meeting in Progress*





# 44<sup>th</sup> CONFERENCE OF FEDERATION OF CORRUGATED BOX MFRS OF INDIA

20-22 November, 2015 Hotel LE MERIDIEN KOCHI

PACKAGING FOR TOMORROW,  
FUTURISTIC IDEAS AND SOLUTIONS

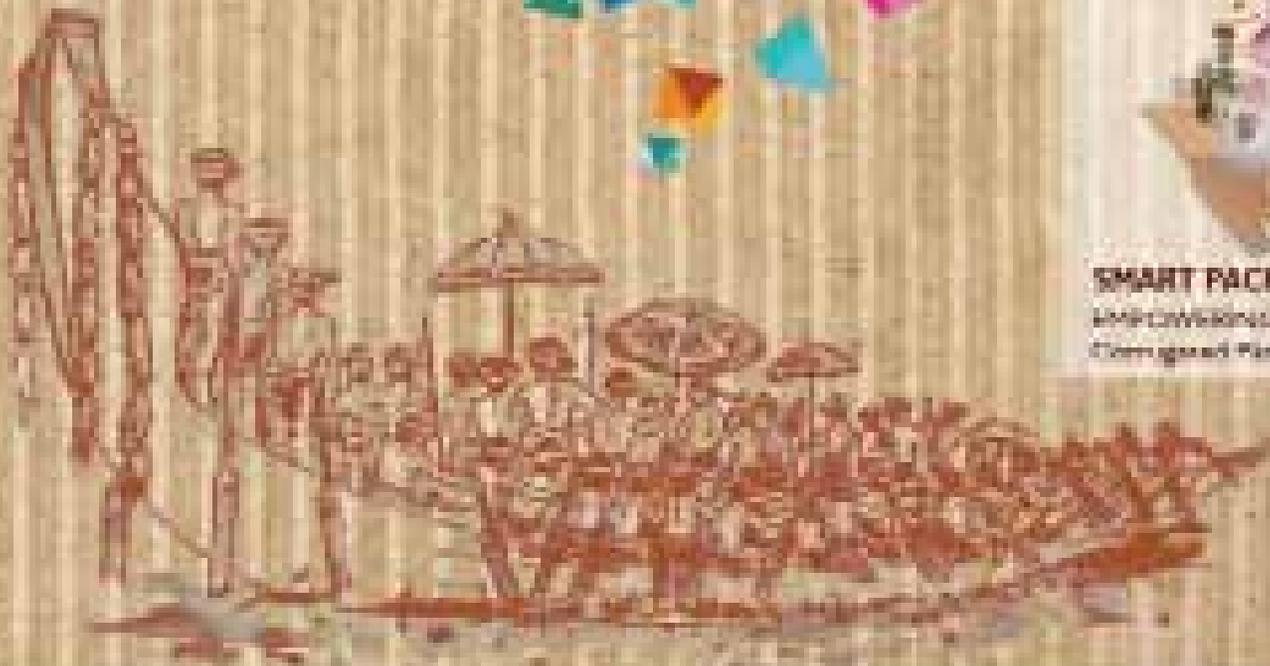
WE THINK  
INSIDE  
THE BOX.

BECAUSE WE CARE.

44<sup>th</sup> FCBMA  
CONFERENCE 2015



SMART PACK EXPO 2015  
EMPOWERING THE FUTURE  
Corrugated Packaging Exhibitions



Organisers & Host  
KERALA CORRUGATED BOX MFRS. ASSOCIATION

## 44<sup>th</sup> CONFERENCE OF FEDERATION OF CORRUGATED BOX MFRS OF INDIA

PACKAGING FOR TOMORROW, FUTURISTIC IDEAS AND SOLUTIONS

### ***Welcome to the "God's Own Country"***

44th Annual Conference of the Federation of Corrugated Box Manufacturers of India will be held at Kochi in Kerala State during the period of 20th to 22nd November 2015.

The mandate to conduct this 44th All India Conference has fallen on the Kerala Corrugated Box Manufacturers Association.

The KECBMA is planning to conduct the Conference along with an Exhibition at the Hotel Le Meridien at Kochi overlooking the backwaters and the lush green scenery merging packaging technology with the beautiful and breathtaking nature.

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The conference is for 3 days, packed with Seminars, Packaging Award Evenings, Buyer Seller meets, Family get together, gala dinners and a host of cultural programs.

Kerala Association has planned a Mega Exhibition of Packaging, Printing and Allied Machineryes where the delegates could interact and negotiate with top suppliers from different parts of the world. The Packaging Industry in Kerala is on the threshold of progress and many existing units are upgrading their production facilities by installing modern machineryes with state of art technology.

This mega Conference and Exhibition is being hosted for the first time in Kerala and this will give valuable exposure and growth opportunities to the packaging fraternity in Kerala and neighboring states and even neighboring countries.

About 1250 delegates from all over India and abroad are expected to participate in the Conference. This is an ideal platform to get enlightenment modern trends in the packaging industry.

We do expect you to participate in the 44th Conference with the theme **"PACKAGING FOR TOMORROW, FUTURISTIC IDEAS AND SOLUTIONS"**.

We also have the **"SMART PACK EXPO 2015"** the unique Corrugated Packaging and Printing Exhibition with the theme **"EMPOWERING THE FUTURE"**.

**"SMART PACK BOOK"** highlighting the latest developments in packaging industry will also be published.

Your valuable participation is very very important and we depend on your views and interaction to make this venture a grand success.

**THIS CONFERENCE AND EXHIBITION WILL BE A MEMORABLE EXPERIENCE ONE CAN NEVER FORGET.**



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# Registration



## 44<sup>th</sup> CONFERENCE OF FEDERATION OF CORRUGATED BOX MANUFACTURERS OF INDIA 30-31 November, 2015, Hotel LE MERIDIEN COCHI



"Packaging tomorrow, futuristic ideas and solutions"

Committee Chairman

Mr. J. Pratheesh, Ph: 9447033624

Date: \_\_\_\_\_

Committee Co-Chairperson

Ms. Annie George, Ph: 9440232791, Mrs. Prasanna Peter, Ph: 9744851888

Category	Fee	Service tax 14%	Total amount	Early bird registration dates
For FCBM member	Rs. 7000/-	980	7980	Up to 30th July, 2015
do	Rs. 7500/-	1050	8550	Up to 30th August, 2015
do	Rs. 8000/-	1120	9120	Up to 15th October, 2015
do	Rs. 9000/-	1260	10260	Spot registration
<b>For Spouse</b>				
10% discount	Rs. 4900	686	5586	Upto 10th July, 2015
do	Rs. 5250	735	5985	Upto 30th August, 2015
do	Rs. 5600	784	6384	Upto 15th October, 2015
do	Rs. 6200	868	7068	Spot
<b>Non member</b>				
- spouse	Rs. 7000	980	7980	
Children between 5 to 12 years will be charged as per spouse rate. Registration of child above 5 years will be compulsory.				
Foreign delegate	US \$ 200	US \$ 28	US \$ 228	

City site seeing and backwater boat cruise are arranged for spouses and children free of cost. Please inform the names of participants in this form at least 20 days before the conference.

### Delegate's details

Sl.No.	Name of delegate	Age	Mobile no.	Food preference	Amount
1					
2					
3					
4					

Name of Regional Association (FCBM member) \_\_\_\_\_

(Photo)

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D.D./Cheque should be drawn in favour of "Kerala CBMA Conference" and send to Kerala CBMA office. Kerala CBMA Conference Current Account No. is 0609073000000075 at South Indian Bank, Vypre Branch, Kochi, IFSC code number SBIL0000009, swift code: SOININ55. Please send copy of bank slip of NEFT/RTGS remittance to Kerala CBMA office address with transaction details by e mail/courier.

Note: (1) For non member registration, the decision of the Kerala CBMA conference committee shall be final. (2) Kindly send the registration to Kerala CBMA office address, later by 30th October, 2015. (3) Registrations received after this date the issue of conference kit will be subject to availability. (4) Registration for child above 4 years is compulsory. (5) No refund of delegate fee will be made unless we get cancellation request by writing before 30th October, 2015. The service charges will be deducted.



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# The little brown box

The retail boom is paving way for automation in the largely old-world Indian corrugation industry. The growth of 12-15% per annum in the next five years is an expert estimation. Are we ready to handle this? Tanvi Parekh takes a closer look at what is transpiring on the ground

Today 225-250 (this is an industry estimate; with the number of automatic lines in operation in the country varying between 225 and 350) automatic lines are churning high-volume high-quality corrugated boxes and trays for both the domestic and the international markets.

## Consider the past two years.

The Indian corrugation box manufacturers have brought home top-line corrugation lines and added capacities.

Earlier this year in January 2015, Ahmedabad-based CanPac Trends inaugurated a brand new corrugation box plant in Tirupur, Tamil Nadu. The investment includes a semi-auto die-cutting model 1450MPD with stripping and stacker, an automatic die-cutting model 1060MPB-II with stripping and an automatic flute lamination model BZJ-1450S from a Taiwanese manufacturer (represented by SLKCG), four-colour flexo press, Bobst gluer and other finishing machineries.

Delhi's Meghdoot added capacity to its existing production capability of 5000 metric tonnes per month, with investment in India's first HP Scitex FB10000 industrial printing press, in addition to the HP Latex 3000 and Kongsberg XP cutting table. The corrugator forayed into the point-of-purchase (POP) business with this.

The most recent in the list is Ahmedabad's Astron Packaging, which has invested in a highly configured six-colour flexo folder-gluer line from Bobst; the FFG 1228 NT RS.

According to P. V. Narayanan, chief executive, Indian Flexible Packaging and Carton Manufacturers Association (IFCA), the number of fully automatic lines; which are able to take in corrugated sheets and perform cutting, slotting printing, and stitching operation inline, are only about 15-20.



Pankaj Shah, chairman (R&D Centre) at Western India Corrugated Box Manufacturers Association (WICMA), rates the corrugation lines basis its make.

In the quality grading, the European machines tops the chart and the Indian



Tanvi Parekh

Online editor, PrintWeek India.

machines appear at the last spot, with the Chinese, Taiwanese and Japanese manufacturers in the between.

## The corrugation county

As per a study by Ram Kumar Sunkara, the chairman of R&D Committee (FCBM), "The annual production of corrugated boxes in India is 4.60 million tons. Interestingly enough, five plants with a captive consumption of more than 15,000 TPA are producing 10% of the boxes in India."



These 225-250 automatic converting plants, according to Shah, caters to one third of the market which is dominated by big players like HUL, Pepsico, LG, Samsung etc. In addition, there are 2750 semi-automatic lines. To put it in plain terms these would be lines with a single facer and no automatic splicer.

Today, 35% of the entire corrugation box production in the country is produced in North India, followed by 30% from West, 25% from South, 6% from the East and 4% from Central India.

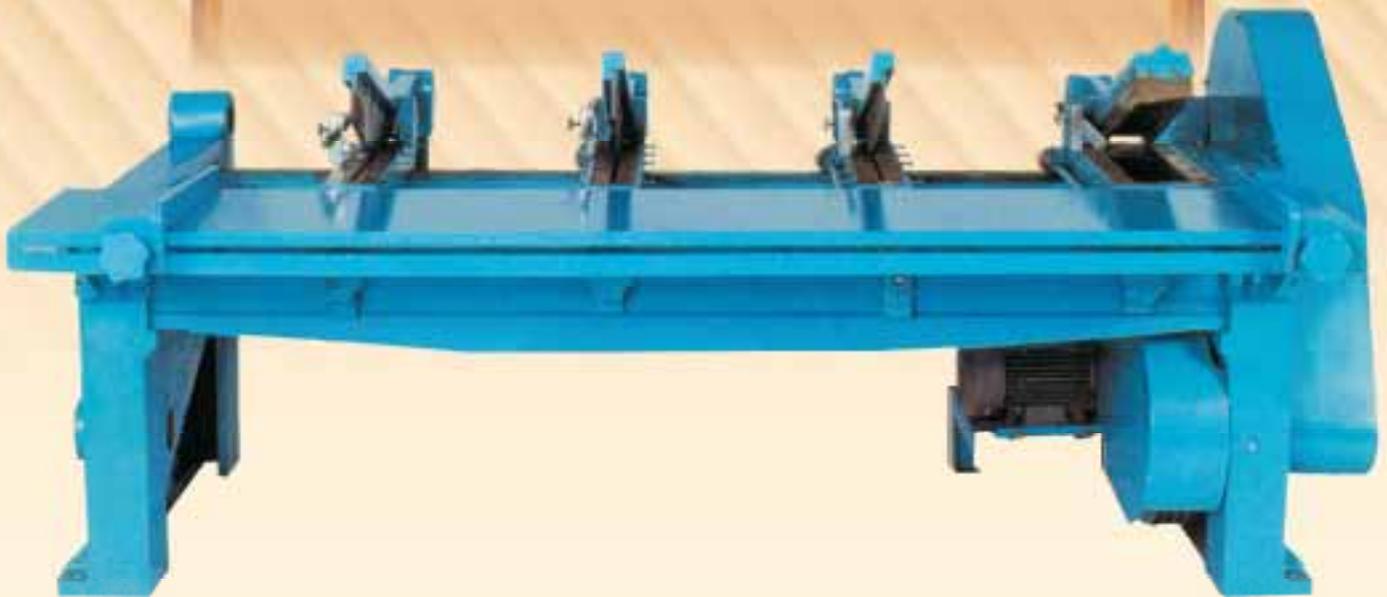
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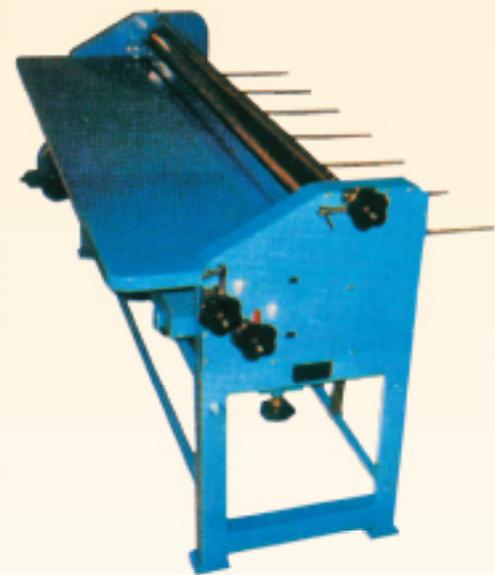
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The corrugated packaging industry in India is steadily growing at 10% per annum. The e-commerce, automotive sector, export-oriented units, fresh farm produce etc are the major user industries which would contribute maximum growth impetus.”

### All it takes to...

With GST being approved in the Lok Sabha and its comprehensive implementation to begin from April 2016, the sentiments of the industry are optimistic. Multi-brand retail FDI inflow is next on the cards. This means the Indian companies will have to adhere to standard practices and regulatory reforms. Plus better quality, better printing, better practices. This will be demanded from all those in the supply chain; the paper mills, the box makers and the brand owners.



“The trend is towards automation. A decade ago, one could count the number of automated lines in the country on the fingers. But today, the number has reached anywhere between 200 and 250. Automated lines mean faster production, better quality and better printing,” says Shah.

Astron's senior vice president, Niraj Darji says the shift towards automation and technology adoption is largely driven by the end-customer. “We have been exporting high quality corrugated trays and boxes to various developed as well developing countries. We observed that their needs include accurate die-cutting and graphic boxes with high-quality printing.”

So is the case with CanPac. Nilesh Todi, managing director at CanPac, says his company wished to be in tune with its customers. “We saw a need for high quality shipper cartons. And though the market is not very large in that area, we expect a boost in the coming future.”

Shah hastens to add there is room for both the automatic and the semi-automatic lines. “The larger players (brands) demand automatic lines to ensure high quality products to the end-users but the small-sized players, say the fresh food producers, will settle with the semi-automatic line converters.”

As the capacity of production upsurges with an automatic plant, the closing down of the smaller players seems inevitable. But with the 8-10% growth in the Indian industry, we are able to absorb some of the slack. The industry survives with the crossover of business between the automatic and the semi-automatic box makers

About manufacturing attractive corrugation boxes, Shah says most of the four-colour printed boxes are facilitated by offset printing. The automatic box makers have now started investing in three to four-colour machines.

And now with six-colour printing topping the trend chart, Astron has invested at an opportune time. “There is a big market for fruits industry in India. Apart from this, there is a big gap in the consumer packaging market, where litho-laminated cartons govern the market. We hope to capture this segment with six-colour printing on a single line operation, where the intermediate operation of offset printing will be eliminated, thereby providing the same or better result than offset and products produced inline in one shot,” says Darji.

The retail boom is paving way for automation in the largely old-world Indian corrugation industry. The growth of 12-15% per annum in the next five years is an expert estimation. Are we ready to handle

this? Tanvi Parekh takes a closer look at what is transpiring on the ground

### Future Trends | FCBM

1. Increasing demand and high volumes will trigger consolidation and setting up of large automatic plants.
2. Inline automatic board and box making plants will ease out the present semi automatic production processes.
3. Deployment of folder gluers, rotary die-cutters will be on the increase.
4. Use of corrugated promotional packs, POPs and dispensers.
5. Advances in multi-colour, flexo printing will facilitate in-house flexo printing and do away with screen printing, and contract printing on offset presses.
6. The emergence of e-commerce, reverse bidding, and the concept of First Pak will give large scale units the advantage of competitiveness. The concept of locating corrugated box units nearer to user will become obsolete.
7. Growing interest in machines made in China, Taiwan and other Asian countries.
8. Machinery manufacturers entering into alliances with Chinese, and Taiwanese manufacturers for manufacturing and marketing.

### Resistance to change

Shah says, “The new growth and expansion has slowed down. The demand is there. The volumes are there. It is the margins that have reduced. In a way, the entire country has slowed down and price wars are reigning in each segment. The question one needs to ask is, while in the business, are you reaping profits?”

That said, most of the top players seek a long-term sustainable packaging strategy. The plan includes increasing sustainable content in cushioning and corrugated packaging by 40% and ensuring that 75% of packaging is recyclable.





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While the need for reforms, in terms of box buying on performance-based parameters, is to be initiated by the brand owners, it is the kraft mills that have to up their ante to fine tune the process for manufacturing paper with consistent RCT values.

“There is resistance to change. Consider the case of the manufacturer’s joint. Today, around 30-40% box makers continue to use stitch or staple the joint. The alternative - glue - is equally strong, if not stronger.”

The resistance in this case, according to Shah is on two fronts – investment and the mindset of the corrugators. “Initially, the cost of investment for the switch will be higher compared to conversion capacity but in the long run it will turn out to be more cost-effective.”

## The Import Story

Shah says, “The Chinese manufacturers, as is their policy, have penetrated the Indian market with a competitive price. The corrugation machine manufacturing industry in India was dominated by the Amritsar and Faridabad-based manufacturers from North India. They succeeded for over a decade and then with the proliferation of the Chinese brands, the decline began.”

According to a leading corrugator, if you are doing run-of-the-mill jobs than any Indian or Chinese machine can suffice the purpose. However, if you are looking at precision and high speed, then you have to be very careful in terms of understanding of the technology and hence what is more suitable. Today, the Chinese, Indian, European and Taiwanese manufacturers have come up with sophisticated machines. The European and Taiwanese machines are very close to each other. And the Chinese are a shade lower. It depends on what you need.

Additionally India also imports the kraft paper and at times the entire paperboard stock. Shah shares, “Accounting the total volume of the industry, about 5-8% of the paper is imported. This again is, at most times, only the top liner (high-strength

paper). One of the main reasons for this is the unavailability of wood in India.”

“We either import the primary fibre or the recycled secondary fibre. We use our resources too, but that does not suffice, leaving us import-dependent. Unlike in the Western countries, the Indian government has not been able to solve this problem. However, there are some paper mills in India who are taking the onus to bring in change and produce export-quality paper,” says Shah.

Today, the supply chain from paper to corrugated boxes, is highly fragmented. But with new monies being pumped into automatic plants at newer solutions are being found to the humble box. This will mean much-more customisation; and sharing ECT / RCT value to guarantee standards.

## INDIAN PAPER MILLS

### Sarada Paper Mills

Established in 2005, Sarada Paper Mills, the Coimbatore-based company established a new plant to cater to all the segments of printing and packaging with product varieties from various grades of coated art boards for commercial printing to duplex boards and kraft papers for the packaging segment.

According to Sarada’s representative, “In India the paper for packaging is mainly being imported on a wide scale.

“We wanted to setup a paper board plant for packaging offering duplex cartons and kraft papers as a ‘made in India’ product and subside these imports. Also, there is no paper mill located in South India which can service the industries in South, with logistics being a major issue in India where customers have to procure paper from mills located in North India, Vapi, Ahmedabad etc.

For the packaging industries, Sarada produces five grades of paper and paperboards, for the corrugation industry they supply brown grade papers, and for the carton industry they manufacture high grade paper boards.

“We are manufacturing grades of paper from 180gsm to 350 gsm and with Burst Factor (BF) of 18-20. So if a customer wants a higher BF, we tend to use virgin recycled waste. On an average, it would be 60% Indian recycled waste and 40% imported waste and for some grades of paper we use 80% locally recycled waste and 20% virgin.”

The company has a manufacturing setup at Satyamangalam in Erode district where it has six units with production capacities upto 50 tonnes per day for only paper and paper boards.

### Dev Priya

Incorporated in 1988 Dev Priya started operations in 1989 with a single machine and used to produce 20 tonnes a day. Today it has grown to a level that it can produce 1000 tonnes a day with seven machines at its facility in Meerut.

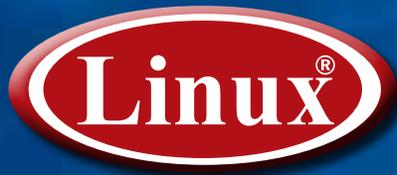
The company manufactures kraft paper for corrugation while duplex boards for the mono carton industry and kraft papers from 16 bf till 32 bf and duplex boards for mono-cartons. Duplex boards is 30% of the total production whereas 70% for kraft.

According to a Dev Priya representative, the consumption of packaging has gone up by 20%. “Earlier we used to see seven ply packaging being used in corrugation but now converters prefer using 3-ply but with high quality and high strength kraft paper,” said the representative.

*Source: This Feature appeared in the 10 May 2015, Vol VIII Issue 1 of PrintWeek India Magazine*

Courtesy : As reported in Print Week 10 May 2015 issue. The Corrugator thanks the publishers for collecting valuable information on corrugating industry in India.

We also thank the publishers for their gracious permission to reproduce their reports for the benefit of FCBM members and others connected with the Industry.



New

# Bursting Strength Tester

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The Bursting Strength Test of paper, paperboard, including liner board and corrugated board, is a composite measure of certain properties of the sheet structure, principally tensile strength and elongation. In general, bursting strength is dependent on the type, proportion, preparation and amount of the fibre present in the sheet and their formation, internal sizing, and to some degree, the surface treatment. While bursting strength is an empirical property, this test, in combination with basis weight, serves to define "standard grades" in commerce.

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# Corrugated Recycling Process

Corrugated is a highly useful, cost-efficient, versatile packaging material that is used to ship just about every product under the sun, all around the world. But it doesn't stop there: corrugated is also the most-recycled packaging material on earth, with a recovery rate of about 73 percent. Businesses, retailers and consumers at home collect and return their used corrugated containers to be recycled into new ones, doing their part in a continuous loop of renewal for this natural, sustainable packaging.



While almost everyone contributes to corrugated's recycling success by returning their old corrugated containers (also known as OCC), fewer people may know where those boxes go from the collection point, or how they are processed to create new corrugated material. This diagram shows corrugated's return journey behind the scenes and how it is recycled for re-use.



## Recycling Process

1. Corrugated boxes are used for their intended purpose of product protection and transportation.
2. Clean, old corrugated containers (OCC) are collected, in many instances as part of a mixed recyclables stream. To optimize recyclability, containers should be free of contaminants such as food, metal foil, wax, etc.



3. The collected OCC is sorted, compacted and baled for space efficient storage and handling, either at the point of end-use (store or business) or at the recycling center.



4. Bales are transported to the paper mill.
5. Bales are broken open, and the OCC is put into a repulper (a huge tub that looks something like a blender) with water. It is agitated to form a slushy pulp (slurry) of fiber and water.

## Contaminants are removed:

- 6a. A big "ragger" chain or rope hangs down into the swirling tub of material. Some contaminants such as long pieces of rope, string or tape, plastic and metal bands will wrap around the ragger and can then be pulled out of the repulper.
- 6b. The remaining pulp slurry goes through different types of equipment such as towers where the metal falls to the bottom for removal, screens, cyclones, and even big tanks where the contaminants float to the top and can be scraped off. The cleaned pulp is then sent to the paper machine.
7. The highly diluted fiber solution is poured out onto a moving screen which allows water to drain away, forming a continuous fiber mat, which is pressed between rollers to remove more water.

*Cont. on - 75*

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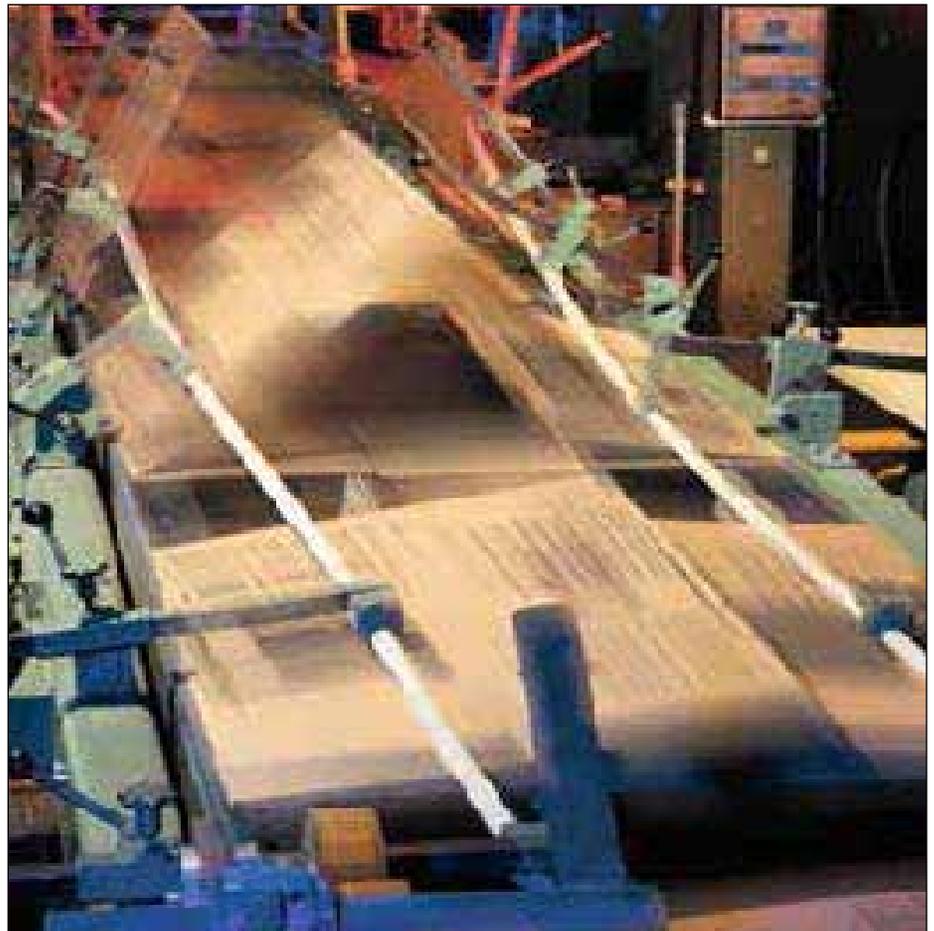
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- 8. The wet, continuous fiber web is then wound through the dryer section where the top and bottom of the alternately contact the heated surfaces of the drying cylinders, removing the remaining moisture from the paper.
- 9. At the end of the paper machine, paper is rolled up on a large reel spool which can weigh 10–60 tons.
- 10. The reel is then slit and rewound into individual rolls that weigh approximately 3 tons each. The recycling process is complete; the new paper rolls are shipped to box manufacturers to begin the next stage in life to become new corrugated boxes.



- 11. A sheet of paper which will become the corrugated “medium” is softened with steam, then fed through a machine called a “single-facer.” The medium passes between two huge metal rolls with teeth which give it wavy ridges, or “flutes.”



### New Life

Corrugated boxes are formed using three or more pieces of paper (containerboard).

The outer surfaces are linerboard and the inner, fluted paper is called medium

- 12. Starch adhesive is applied to the fluted medium, which is then sandwiched between two flat sheets of paper (linerboard).
- 13. The combined, 3+-layer board passes through curing sections in a continuous web, and then is scored, cut into proper size blanks (sheets), and stacked.
- 14. To manufacture a new box, the corrugated sheets are passed through machines that print, score, die cut and fold them. The side seam of the box (manufacturer’s joint) is fastened by gluing, taping or stitching. The finished, flat boxes are gathered into bundles and stacked, then shipped to the box customer’s plant

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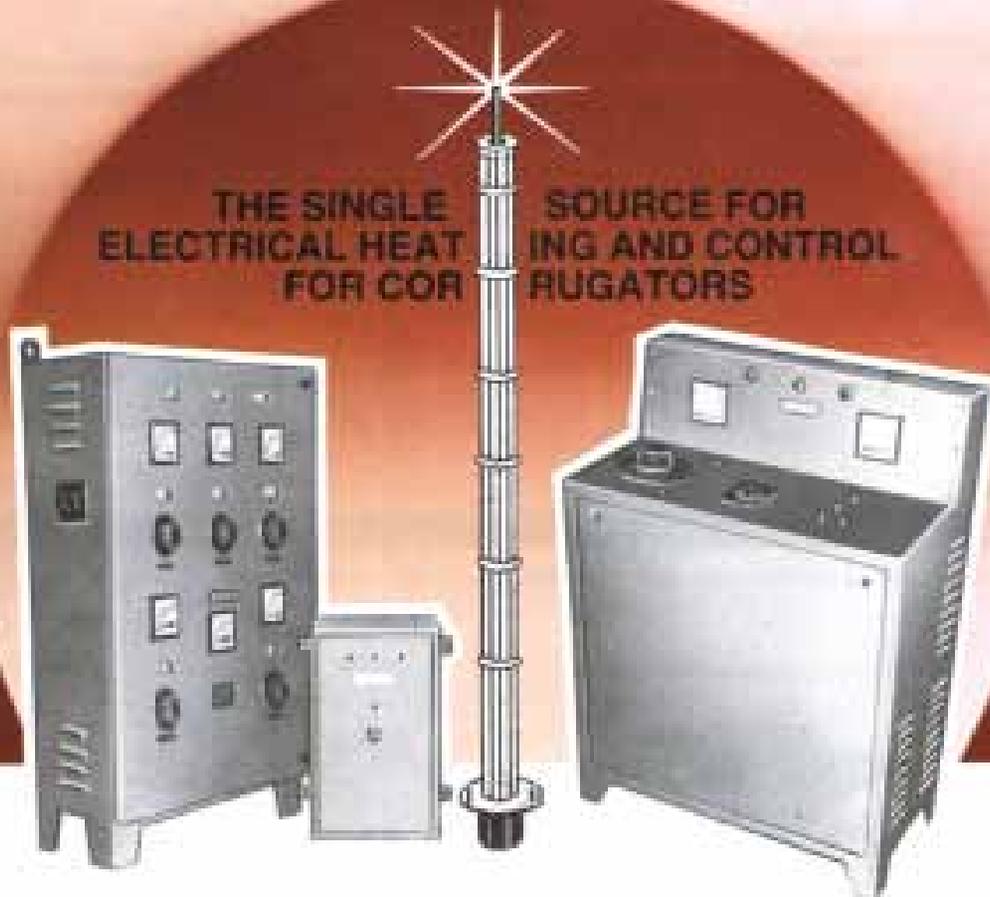
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# EFIA 2015 Print Awards

## Award winning entries at EFIA 2015 Print Awards

The EFIA awards cover all aspects of flexo printing on a variety of substrates. Here are the award winners from the corrugated industry:

### Flexo Print on Paper

INTERNATIONAL – Sponsored by Interflex Group

**GOLD**  
DS Smith Deutschland  
Henkell Blanc de Blancs

**SILVER**  
DS Smith Deutschland  
Rotkappchen Regent



### Corrugated Post Print

COATED LINE & SCREEN – Sponsored by Kodak

**GOLD**  
TRM Packaging  
Border Biscuits Luxury Mini Pack

**SILVER**  
Inspirepac Ltd  
Swizzels Monster Treats

**BRONZE**  
Smurfit Kappa Yate  
Accolade Wines Bamrock Station

**HIGHLY COMMENDED**  
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Swizzels Love Hearts Squashies



Cont. on - 83



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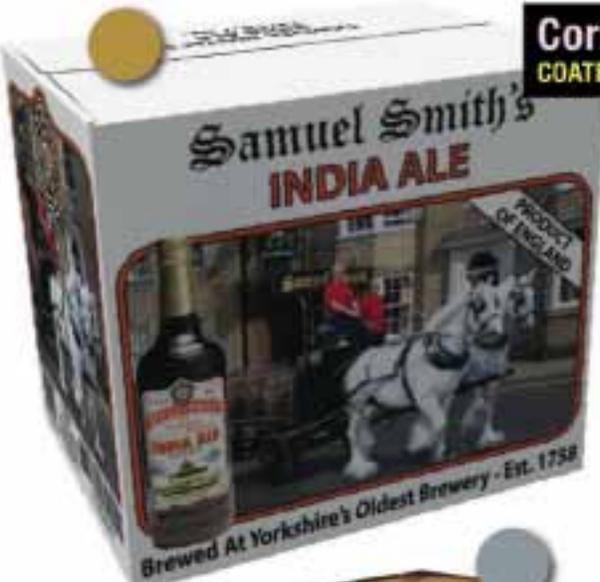
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### Corrugated Post Print

**COATED PROCESS** – Sponsored by Kodak

**GOLD**  
**Rigid Containers Ltd**  
Samuel Smith's India Ale

**SILVER**  
**Smurfit Kappa Chelmsford**  
Thatchers 20 Litre Box

**BRONZE**  
**Smurfit Kappa Chelmsford**  
Surrey Down Duck Feather Down

**HIGHLY COMMENDED**  
**Inspirepac Ltd**  
Walkers Try All Six



**GOLD**  
**Inspirepac Ltd**  
Oloves Counter Display

**SILVER**  
**Smurfit Kappa Tannochside**  
Irish Distillers – Jameson

**BRONZE**  
**Smurfit Kappa Tannochside**  
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## Post Print on Flexo Casemakers

**COATED** – Sponsored by Bobst

### GOLD

Smurfit Kappa Lurgan  
Baileys 12x500ml

### SILVER

Smurfit Kappa Lurgan  
Finn McCool

### BRONZE

Saicapack  
Cù Bòcan Single Highland Malt Whisky



## Post Print on Flexo Casemakers

**UNCOATED** – Sponsored by Bobst



### GOLD

Saicapack  
Tanqueray Old Tom Gin

### SILVER

Smurfit Kappa Lurgan  
Zip Lighters

### BRONZE

Saicapack  
Magnum Cream Liqueur



## Repro Supplier of the Year

Sponsored by Esko

### GOLD

Chemence Graphics

## Supplier of the Year

Sponsored by DS Smith

### GOLD

Sandon Global

### SILVER

Chemence Graphics

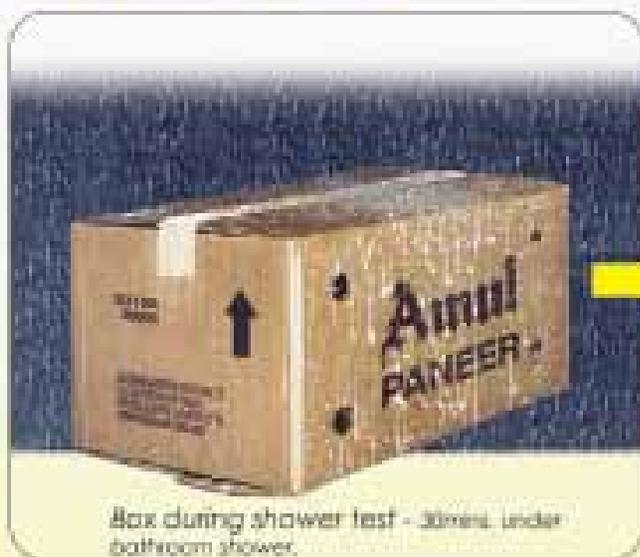
### BRONZE

Contact

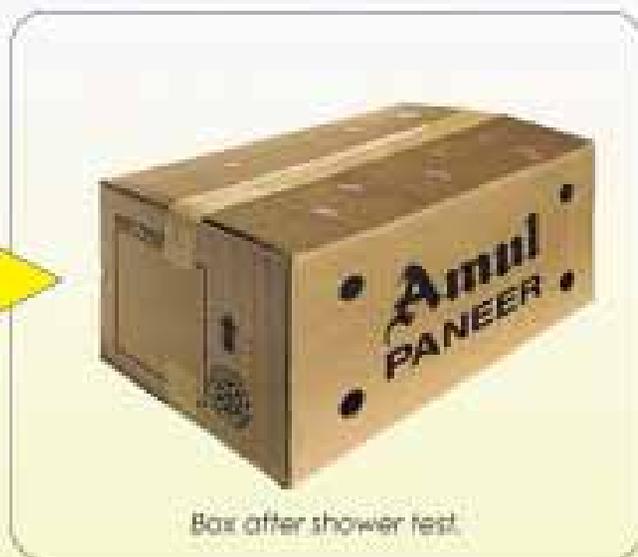
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**META-CHEM** brings you the import substitute paper water-proof chemical, for the first time in the country. It performs even better than the imported chemical, resulting in far higher water resistance and increase in burst strength of the coated paper. **AT ONLY A FRACTION OF THE COST.**



Box during shower test - 30mins. under bathroom shower.



Box after shower test.

## Special features:

- The chemical can be supplied transparent or lightly coloured in various shades as per requirement.
- Application is simple
- High coverage
- Superior water-proofing properties
- Non toxic, food grade
- No change of properties between (-)45 deg. C to 150 deg. C.
- Environment friendly - The coating is bio-degradable and coated paper can be recycled directly
- Coating is flexible - does not crack on folding

## Comparative Properties:

	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	16.17	18.2	18.26
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
  - Electronic and electrical goods
  - Any other moisture sensitive product
- Multi-wall paper bags for packing of moisture sensitive products
- Electrical insulation paper coating
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## Coatings for the Corrugated

### Michelman Celebrates Grand Opening of Michelman India

On April 28, 2015, Michelman India celebrated the grand opening of its new Business and Technology Centre in Mumbai, India.

As a result of its recent acquisition of long-time sales and service partner, Supack International P/L, Michelman India now offers a business centre, laboratory, and an experienced team of sales, technical service and business operations personnel. The facility's laboratory has been equipped with several industry accepted product testing capabilities for packaging, printing, and coating applications.



*Unveiling of the Inauguration plaque. From L to R Mr. Pankaj Shah, Mr. Steven Wong and Rick Michelman*

When asked about packaging for fruits like – mangoes, apples etc. in corrugated boxes, Mr. Rick said that Michelman has the technology to protect and preserve by covering the fruits and also coatings for the corrugated boxes and corrugated trays used for display in retail.

Regarding returnable plastic trays which is supposedly a competition for corrugated trays, Mr. Rick said that the returnable plastic trays are subjected to bio chemical contamination, so corrugated which is bio degradable is always a better option.

Regarding printed corrugated boxes which has become necessary to attract the customer attention, Mr. Rick said Michelman has solutions to coat printed boxes so that the contamination from printing inks is prevented. Besides, the coatings will make the boxes resistant to abrasion when stacked one above the other and also from other forces during transportation.

When mentioned about coatings for take away pizza boxes Mr. Pankaj Shah said that a few leaders like Pizza Hut understand the value of coatings while others do not.

Mr. Rick said that what is important is what the end user needs – like maintaining the integrity and safety of box and product.

When asked whether Michelman coatings are mainly for the paper or the corrugated, he said that it is easy and practical to coat paper rather than the board.

Mr. Pankaj Shah said the coating also can be done on line by installing a coating machine in corrugating line. This system is already implemented in many corrugated units in India. Coatings on line has already become a norm especially for food packaging boxes.

Michelman also provide coatings that can be sprayed onto finished boxes to reduce coefficient of friction between the box surfaces.

He also said that Michelman is happy to help people regarding what coatings are best suited for individual requirements / applications.

*Cont. on - 91*

Michelman India is dedicated to the development of the Indian market, with an immediate focus on the growing printing and packaging sectors. The company also has expansion plans. to service other coatings and manufacturing industries that Michelman supports worldwide.

**In an interview with The Corrugator,** Mr. Rick Michelman said that Michelman India will endeavor to give some new development in the coatings every three months.



# Shear LINE



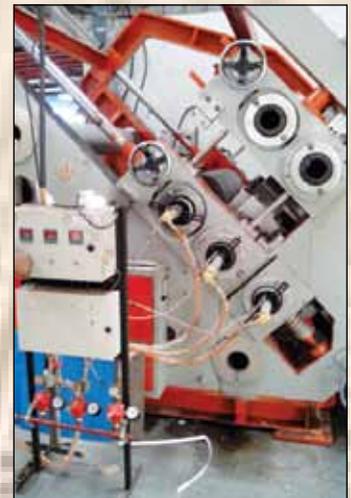
**New**

## Fingerless Double Profile Single Facer



### Superior Technical Features

- **Design Speed:** 70Mt/Min.
- **Available Sizes:** 12" [300 mm ] AND 14" [350mm]
- Vacuum Suction Fingerless Design driven by heavy duty blower provides perfect flute formation
- **Pressure Roll Dia:** 305mm.
- **Twin Flute Structure:** One Flute Unit working and another ready for immediate order change.
- Heavy Duty Quick Roll Change Cassette System controlled by Hydraulic System for change of flute rolls.
- Corrugated Rolls Made of Special Alloy Steel.
- Built in Pre heating & Pre-conditioning Rollers ensures absolutely secure bonding.
- Heavy duty Hydraulic Power pack.
- Gum Circulating System.
- A. C. Drive for speed control.
- **Available Width:** 1200-2200mm.
- **Flute Profiles:** A,B,C,E, or as per requirement.



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In keeping with the trend of the industry which is swiftly switching to Automatic Process – we have developed complete In-line Corrugators, ranging from- 32” 3ply Eflute Plant to 80” 5ply Plant with Numerical Control System



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Our talented people, the most expert in the industry.

The longest continuous history and tradition of Innovation Leadership,

Experience, Research, Passion, Technological Excellence

and True Partnership with customer.



Single Phase Paper  
Corrugating Machine with  
Twin Flute



Sheet Pasting  
(4 Roller) Machine



Rotary Sheet Cutter



Circular Type Single Phase  
Paper Corrugating Machine



4 Bar Rotary Cutting  
& Creasing Machine



3 Col Auto Feeder Floor  
Printer Slitter Crossover with Stocker



Two Colour Board Pressing Machine



Regular Sorting Machine



Single Colour Craft  
Paper Pressing Machine



Economic Slitter



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E-mail : [natraj@airtelmail.in](mailto:natraj@airtelmail.in)

Website : <http://www.natrajindustries.com>

To a question whether Michelman will be interested to be part of 'Make In India' of our Prime Minister, Mr. Rick said that there are very good companies operating and manufacturing excellent products in India. Michelman will be interested in exploring the possibilities.

Regarding E-commerce boxes, Mr. Rick said – Ecommerce boxes can be coated to eliminate over packaging which is often the case with Ecommerce. We will be able to move from the manufacturing plants to fulfillment centres for coating.

Regarding the safety of the chemicals used in coatings for food products, they have got a very well trained regulatory team which ensures whatever they are making is safe for human beings.

The other principle Michelman follows is the Science behind Chemistry.

Michelman will play a friendly role to boost the economy and said, "That is the perception we want to create."

We are a family owned business and have a 65 year old record of producing products that are good for environment, good for human beings good for family.

Regarding branding Michelman can colour coat Kraft paper to enhance the brand image. Michelman's objective is to make the product reach the market faster, better and with less damage especially in the variable weather conditions in India. **Michelman Coated Boxes - Small cost High rewards.**

### Confederation of European Paper Industry Partners With Pöyry

The Confederation of European Paper Industries (CEPI) Is pleased to announce a new partnership with Pöyry. The partnership will allow CEPI and Pöyry to work more closely together, particularly in the areas of innovation and bioeconomy. In addition, it will reinforce Pöyry's presence both at the European Paper Week as well as other events organised by CEPI.



helping to solve the challenges faced by the world's toughest industries. By becoming a CEPI partner, Pöyry joins Buckman, Omya and Voith. "We are very excited to have Pöyry on board and we very much look forward to a fruitful collaboration", says CEPI Director General Marco Mensink.

CEPI's partnership programme is currently open to machine and chemical suppliers active in the pulp, paper or board industry with a direct link to paper manufacturing. It was first launched in 2011 and aims at exchanging technical information and expertise as well as promoting common interests.

Source: <http://www.cepi.org>

### New study shows that using corrugated saves money

A new study quantifies sizeable added costs for shipping onions from grower to retailer in reusable plastic containers (RPCs) vs. corrugated containers. Actual data provided by a large number onion growers confirmed that using RPCs instead of corrugated containers increased their annual shipping costs by 10.4 percent system-wide.

"Corrugated, the proven and preferred single-use transport packaging material,

Pöyry is an international consulting and engineering company providing services across the full project lifecycle and

remains the most economical and best choice for shipping onions, as well as other products," said Dennis Colley, executive director of the Corrugated Packaging Alliance. "That advantage is realized by every stakeholder in the supply chain."

Grower-shippers shoulder a hefty cost increase, shelling out 15.4 percent (\$0.17/case) more to ship the same amount of onions in RPCs vs. corrugated. Retailers are not exempt, they spend 9.9 percent (\$0.61/case) more to receive those onions in RPCs than in corrugated containers. These costs are often passed on to the consumer.

Choosing corrugated containers enables both retailers and grower-shippers to save money due to optimized freight loads, reduced damage from collapsed pallets and loads, and the avoided cost of washing, sanitizing and drying containers.

The full case study is available at [www.corrugated.org](http://www.corrugated.org)

### Astron Packaging books Bobst FFG 1228; eyes Rs. 300-crore turnover

Ahmedabad-based corrugation and label specialist, Astron Packaging, will become the first in South Asia to install the highly configured six-colour FFG 1228 NT RS flexo folder-gluer line.

With this heavy-duty investment, which is estimated to be close to Rs 26-crore, Astron's senior vice president, Niraj Darji is ready for what it's worth and hopes to better it.

The machine will be commissioned in December 2015 and Team Astron is confident to close the financial year 2015-16 with a jump of Rs 50-crore, by clocking a turnover of Rs 150-crore.

"The target is to achieve Rs 300-crore turnover in the next two and a half year," said Niraj in conversation with PrintWeek India.



Cont. on - 95





**agnati**  
impianti per sistemi industriali  
corrugating machinery

# INNOVATION IN CORRUGATED FOR TOTAL QUALITY & SAVING

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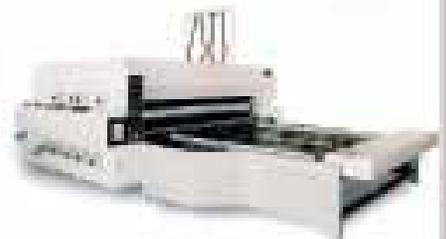


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At present, Astron has two four-colour Nantai flexo cutter slotter and rotary die-cutter machines. The company will deploy the new kit to produce premium corrugated boxes with heavy graphics and shiny paper for the export market.

Niraj said, “We have been exporting high quality corrugated trays and boxes to various developed as well developing countries. We observed that their needs include accurate die-cutting and graphic boxes with high-quality printing. We use virgin kraft white liner while they need printing on shiny paper (coated kraft liner). This is a limitation on our existing presses, because, with the four-colour flexo machine we have, we cannot print on coated paper.”

After having approached several top Chinese equipment manufacturers with the requirements, Niraj, not being satisfied with the print quality, consistency and accuracy of die cutting and high speed gluing line in one machine, decided to go for the world best technology.

“Along with experts from Bobst Lyon, I visited several European installations of similar Bobst kit to assess the print quality, before making the decision. We are now checking with vendors for ink, anilox and other consumables for the compatibility so that we are fully ready to go into production once the machine is installed by this December,” said Niraj.

The Bobst FFG 1228 NT RS is a six-colour flexo machine, which is also capable of slitting, scoring, folding, gluing and rotary die-cutting inline. It is a 2.8m wide machine. It is equipped with Bobst Rapidset system for fast printing makereadies while the machine is running. The rotary die-cutting facility enables it to produce custom designed boxes apart from regular slotted container (RSC) boxes.

The 60-metre FFG 1228 is one of the fastest in the Bobst’s FFG series with a speed of 15,000 sheets per hour. Not only will Astron cater to the top-end export market for packaging of pharma and fresh produce, but also it plans to create new avenues in India.

“There is a big market for fruits industry in India. Apart from this, there is a big gap in the consumer packaging market, where litho-laminated cartons govern the market. We hope to capture this segment with six-colour printing on a single line operation, where the intermediate operation of offset printing will be eliminated, thereby providing same or better result than offset and all product produced inline and in one shot,” said Niraj.

“The new installation will ensure that our customers find the right product on right time,” concluded Niraj.

*Source: This News article appeared in the 10 May 2015, Vol. VIII Issue 1 of PrintWeek India Magazine*

## TNPL's Mega Packaging board unit to go on stream by year end

One of the largest greenfield projects in packaging board will go on stream in Tamil Nadu when Tamil Nadu Newsprint and Papers Ltd commissions its two-lakh-tonne a year factory by the year end.

Construction of the 1,500-crore plant, located in an industrially backward area in Tiruchi district, started last April and company officials are confident that by December the equipment will be fully set up and trial production started.

Installing of equipment started in January, a full month ahead of schedule. The first boiler of the factory’s 30 MW coal-based power plant will start generating power in July and the second by August — well on time to power the board machine when it starts churning out the finished product by the year-end.

The four-layer board machine and stock preparation machine are one of the latest of its kind supplied by Voith, Germany; Pesimal of Finland has supplied the automatic storage and retrieval system with a 30,000 tonnes storage capacity for reels and 10,000 tonnes of final product, sheets. TNPL is a 2,300-crore company making about 4 lakh tonnes of printing and writing paper annually. With the new factory, it will enter a fast growing segment within the paper sector.

### High-end packaging

The unit will make high-end packaging board used in a wide range of industries including pharmaceuticals, food and consumer electronics.

The growth in organised retail and e-commerce is spurring the demand for packaging about 12-14 per cent a year.

According to company officials, in the first full year of operations when the factory is likely to reach 60-70 per cent capacity utilisation, the unit will add over 750 crore to the topline. It will reach



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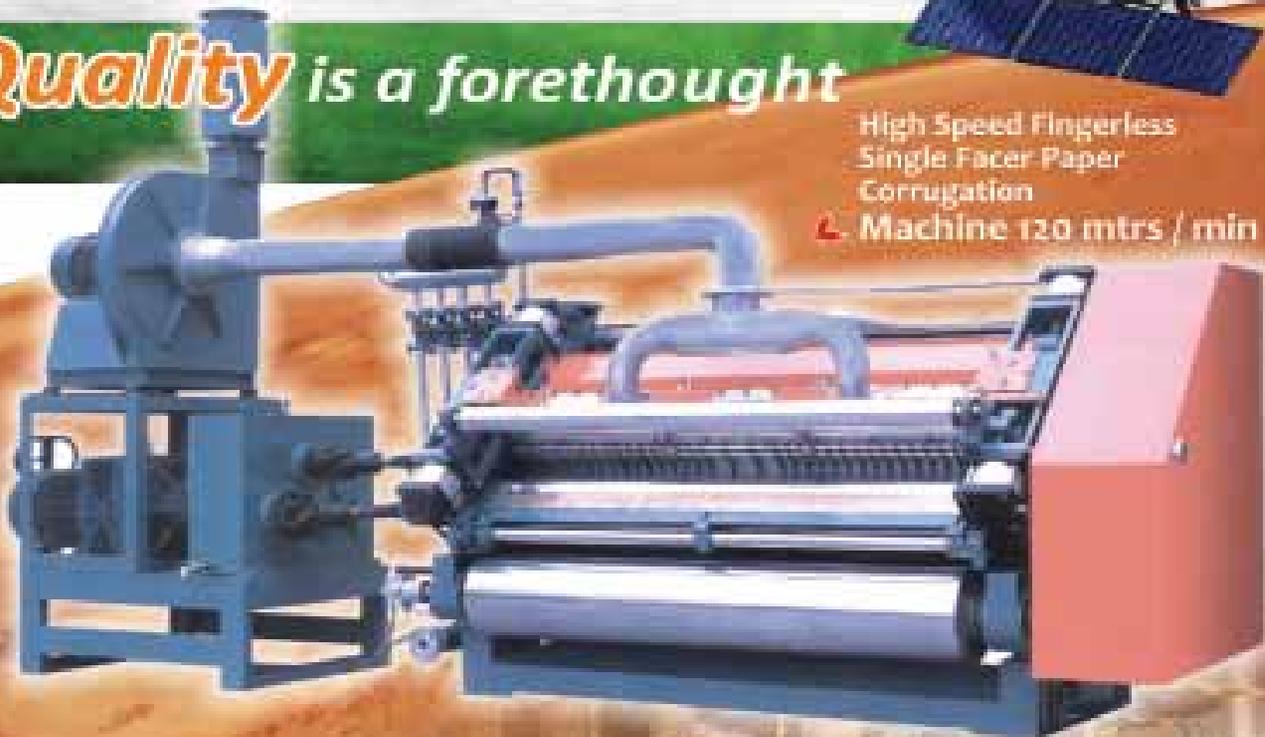
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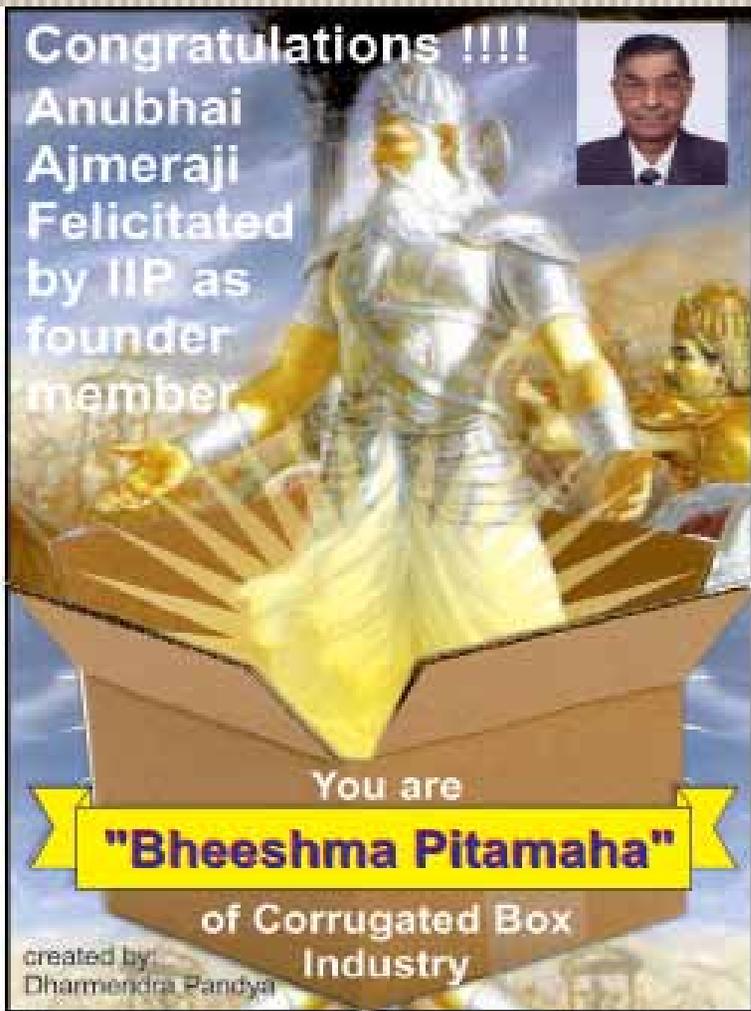
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full capacity in the third year. TNPL's total annual production capacity will grow by 50 per cent to 6 lakh tonnes a year including printing and writing paper production in the first unit.

The machine is capable of making a wide range of multi-layered packaging boards such as basic boards like whiteline chipboard, used for making shoe boxes; folding box boards, used in high end packaging; and solid bleached sulphate board, cup stock used to make disposable cups.

As of now the major players in this segment are ITC, Century Paper and JK, according to industry sources.

As reported by *The Hindu Business Line*



**Mr. A. B. Ajmera is the veteran of the industry and highly respected personality.**

**He has contributed immensely to the growth and development of the industry.**

**We are glad to inform the readers that Indian Institute of Packaging (IIP) has Felicitated him.**

**On this occasion Mr. Dharmendra Pandya has created this image as a tribute to the doyen of our Industry.**

***Congratulations to Shri. A. B. Ajmera***

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# Product Profile

## Coqua Coconut Water Packaging – a Student Project design gives complete experience.

Coconut water is a healthy and hygienic drink. Even knowing that fact, youngsters and sophisticated people don't enjoy to drink from the natural coconut since it has lot of problem in ergonomics as well as in form too. So to promote this drink to the youngsters and people who are fascinated about style and design, a student project has come up with an idea of lifestyle package design of coconut water that will attract these target users. Coconut water packaging offers hygienically processed range of packed coconut water that will be safe in consumption and free from added impurities. It will offer the entire product range with customised packaging thereby retaining its quality and values. The objective is to promote packaged Coconut water which is equally Hygienic and Refreshing like natural coconut water and to pack in such a way that will retain the aesthetics of coconut.

Taking the direct inspiration from the nature for form, this structure was developed to maintain the complete experience of having coconut water which will attract the consumers. By dividing



the packaging in 4 equal pieces, adding the cutting/slicing property of fruits which is quite unfamiliar to coconut family. The stacking of the four packaging together gives an entire feel of a coconut and increase its design value.

### Innovative thinking outside of the box



The technical experts in the design department of Smurfit Kappa in Herzberg, Germany, were recently presented with an interesting challenge: to optimise the existing transport packaging for premium hair care products – but with the proviso that no part of the construction could be changed.

In coming up with the optimum solution, the product design team went against convention and rotated the direction of the corrugations on the E-corrugated board. The twisted arrangement of the cuts on the punching sheet resulted in a considerable improvement in the layout, as well as

leading to an estimated saving of 20% to the customer.

In addition, the improved technical characteristics meant that the diagonal corrugation achieved a roughly 13% higher BCT value (stacking compressing resistance, measured by a Box Compression Test) by moving the fluting by a 45 degree angle to be more in line with where the fluting would ideally need to be to attain its greatest strength.. This also meant that the machine operation could be improved, since with the improved flatness and uniform bending resistance of the grooves, the blanks are cut more smoothly and processed faster.



This packaging was recognized at the Smurfit Kappa Innovation Awards, winning in the industrial category.

Source: <http://www.smurfitkappa.com>

## LEMANIC® DELTA - Gravure & converting line From Bobst

### A very flexible value-added platform

Providing up to 12 colours perfectly in register with in-line converting applications, the LEMANIC® DELTA production lines are making gravure a viable alternative to processes such as sheet-fed offset printing. Adapted for short to medium run production, the LEMANIC® DELTA lines make gravure



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affordable even for short run jobs, featuring fast change-over with the light printing carriage concept and user-friendly quick settings with the electronic line shaft.

### Adapt the converting process to your market needs

From paper and board reels to finished blanks or gravure printed sheets, LEMANIC® DELTA production lines provide printing perfectly registered with a range of in-line converting solutions:

- Rotary die-cutting is the converting method ensuring utmost consistency and productivity for standard shapes
- In-line sheeting provides flexibility and the possibility to combine gravure printing with other sheet-fed value adding processes
- A rewinder can be added for paper and board

### Smurfit Kappa launches unmanned cardboard plane

The plane was made entirely from paper, cardboard and glue

Smurfit Kappa has sent a corrugated aeroplane in to the sky. Working from the Development Centre (DC), Smurfit Kappa's hub for research and development, the company drew on its extensive knowledge and expertise to design, build and finally fly a plane which was not only made out of cardboard, but was also sturdy enough to carry a real person.

The plane was initially designed by DC engineer Arnoud Dekker, who has a degree in aeronautical engineering. This was then translated in to a corrugated 3D model, and the physical plane was then built using the skills and experience of

the wider team at the DC. The entire process was carried out from start to finish in-house.

The finished product was approximately 9 metres long by 8 metres wide, at a height of over 2 metres and weight of around 160kg. The plane was made entirely from paper, cardboard and glue – comprising of 70m<sup>2</sup> of paper, 240m<sup>2</sup> of cardboard, and 25kg of glue. Once constructed, it was put to the test and successfully sent in to the air with a dummy on board weighing the same as a real person, 60kg, and achieved a height of over 25 metres and a distance of over 300 metres.

“When we were initially approached to take on this challenge we were a bit sceptical, but this quickly turned in to excitement,” said Dekker. “It was a great way for us to show the strength, versatility and durability of corrugated board, as well as the expertise and insight that goes in to creating any product, whether it’s a plane or a challenging packaging solution for one of our customers.”

Source: <http://www.pulpapernews.com/>



Cont. on - 106

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- Rub Proofness
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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/cm<sup>2</sup>.



### 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 absorptiveness 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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## Range of Blades

TRESU Group has launched a range of lightweight carbon fibre chamber doctor blades, claiming it offers improved chemical resistance, optimised flow and safe, easy handling in all flexo printing situations. The carbon fibre composition gives the chamber high-strength qualities, enabling a relatively low weight of between 2.4kg and 4.1kg per linear metre, thus easing chamber exchange. The inside of the chamber features a top-coated ink-repellent surface. This offers extra protection against ink and detergents with high and low pH-values and ensures efficient, thorough cleaning after job completion. Furthermore, curved inner surfaces maximise volume and facilitate controlled discharge. The chamber's design also enables ink and coating circulation in relatively low volumes.

The units offer pressure-controlled ink and coating circulation with manual or closed-loop control systems, like the TRESU FIU iCon Ink Control System. They feature the company's patented seal system, preventing leakage and stainless steel blades within two minutes.

The enclosed environment, resulting from the seal and precise blade positioning, ensures pressure and flow rate are maintained at desired levels without manual intervention.

This stops air contaminating the chamber and results in foam-free transfer of ink/coating directly to the anilox cells, also at fast speeds. This in turn ensures a clean, blister-free printed image with fast drying characteristics, better reflection and higher gloss values. The enclosed chamber also prevents solvents from escaping and protects the ink from degradation due to exposure to the atmosphere. Henrik Kristensen, Vice President of TRESU Ancillary, comments, "Thanks to its time-saving advantages, optimised fluid control and resilience, the TRESU carbon fibre chamber offers a long-term solution for high productivity, low ownership costs and uniform quality."

Visit: [www.tresu.com](http://www.tresu.com)

## Strapper for Large Formats

Mosca has launched a strapping machine specially developed to strap large-format products for secure transportation. The new EVOLUTION SoniXs TRC-6 combines the company's proven SoniXs ultrasonic sealing technology with a compact design and easy access for cleaning and maintenance, made possible by a new Standard-6 strap path system which can be easily disassembled and reassembled without tools.

As a result, this cost-effective strapper delivers extremely reliable, high-quality

cycle to ensure maximum performance regardless of package height.

Safe to operate without separate protection, and easy for operators to use with minimal training, the machine comes labelled with a CE marking.

Mosca's patented SoniXs ultrasonic sealing units require no warm-up time and are extremely energy-efficient as energy is only consumed at the moment the strap ends are sealed. The welded seam offers more than 80 percent of the tensile strength of the strap, making it exceptionally strong and stable.



strapping of up to 28 strapped packages per minute on a standard-size frame with a passage width of 1650mm, and up to 25 packages per minute on the largest passage width of 2600mm. The machine's simple tool-free disassembly capability simplifies maintenance, cleaning and repairs. The removable roller-table makes it easy to access the inner workings of the machine - if required the table can be unlocked and completely detached for direct access to all core components from above.

In operation, the EVOLUTION SoniXs TRC-6 straps packages on the conveyor transversely to the direction of transport. The pneumatic hold down device is integrated into the frame, enhancing the machines compact uncluttered design. It can be manually fixed at a specific height before the start of the strapping

An optional double strap dispenser reduces downtime. As soon as one coil is empty, a second feeding unit in the machine automatically takes up the second coil. The empty coil can be changed while the machine remains in operation, avoiding costly down time.

Additionally, customers can opt to have a package stop integrated to align the package on the conveyor.

This ensures that the strapping is perfectly positioned on the corrugated blank and simplifies downstream processing for accurate, fully automated palletising. MSCB-1 controls make machine operation easy via buttons and digital display.

Source: Internet



## Smurfit Kappa launches new innovation in corrugated board

Irish paper-based packaging producer Smurfit Kappa has launched Board Referee, its latest innovation in corrugated board, to advance its production capabilities to manufacture packaging products.

Designed by Smurfit Kappa's Development Centre in the Netherlands, Board Referee has been exclusively developed across all of the company's production sites in Europe.

Smurfit Kappa claims that Board Referee is the first to apply the three-point bending theory (TPB) to packaging, which provides data to the company on the bending strength of the corrugated board used in packaging, so that it can be developed and improved accordingly.



This ensures that the board used in the stacking and storage of boxes is optimised for its purpose, by providing customers with packaging that is strong enough to carry the load of the product and stack, the company said.

“This is part of our commitment to ensuring customers receive high-performance packaging, informed by smart insight and measurement.”

Smurfit Kappa research and development (R&D) vice-president Arco Berkenbosch said: “This industry-first technology is perfectly suited to our customers’ needs, allowing us to develop packaging that uses the full potential of paper in the most efficient and sustainable way possible.

“The Board Referee means that we will be able to measure the performance of 50,000 products each month, giving us a unique ability to make rapid improvements to packaging board where necessary.”

*Source: Internet*

## Smurfit Kappa launches KartonFlute

Smurfit Kappa has launched KartonFlute, its latest corrugated board for the carton board market sector, which the company claims, will reduce logistics costs.

KartonFlute from its Norboard Graphical Board range is said to come with superior strength which gives slimmer and more sustainable corrugated boards. It is also FSC-certified for maximum sustainability.

The company will sell these boards in three standard grades: KartonFlute Lite (750 microns), KartonFlute Standard (800 microns) and KartonFlute Lux (850 microns) which is coated on both sides. All the boards will have a white fluting to make them suitable for the cosmetic and premium markets.

These new boards which combine the benefits of a super-slim board with superior compression strength, excellent printing performance for long and short runs and a unique ‘curve-ability’ will replace the existing ranges of G-Flute and T-Flute boards.

Commenting on the product, Kappa Cor-Trade technical sales manager Richard Revell said: “Micro-flute technology has moved on in leaps and bounds in recent years and Smurfit Kappa’s use of high-quality liners, suitable for today’s predominate printing techniques, offset Litho, Flexo, Digital and Screen, has enabled us to develop a new board that



is slimmer than previous micro-flutes yet allowing us to retain the strength of traditional, thicker corrugated boards and provide a much stronger alternative to solid carton boards.

“The reduction in calliper equates to significant savings in the cost of transporting flat or converted sheet, an important consideration wherever you are in the supply chain. The new KF range will significantly simplify the selection process for brand owners, printers, converters and packaging designers”.

He further says that lot of interest has been generated in the product owing to its ability to incorporate fluid curves along with or instead of hard folds, die cuts, offering windows and apertures.

Smurfit Kappa Cor-Trade sales director Mark Richards said: “We are truly excited about the launch of KartonFlute. This product has been developed through listening to the needs of our customers. Another major advantage of KartonFlute is product availability, lead times are game changing compared to traditional carton board choices, as are the minimum order quantities for bespoke work.”

KartonFlute is machine erectable and can accept foil blocking, embossing and debossing, and is also 100% recyclable.

*Source: Internet*

# Forthcoming Events

30th July - 2nd August 2015



Pragati Maidan, New Delhi, India

THE TOTAL PACKAGING, PROCESSING AND SUPPLY CHAIN EVENT.

The show brings together the worldwide manufacturers and providers of machinery, materials and services for food, pharma and packaging industry from India and neighboring countries.

14-16 September 2015



Pragati Maidan, New Delhi, India

INTERNATIONAL EXHIBITION ON PACKAGING MATERIAL & TECHNOLOGY

20 - 22 November, 2015



44TH FCBM CONFERENCE  
Le Meridian Hotel, Kochi.

44TH; Conference of the Federation of Corrugated Box Mfrs. of India is being held from 20th to 22nd November, 2015 at Le Meridian Hotel, Kochi. It is an established and proven fact that this annual event of the Federation is an excellent platform for meeting major corrugated packaging manufacturers from India and neighboring countries. The three day programme will comprise of Annual meeting, technical seminars, Exhibition, cultural programme etc. The event will be organised by Kerala Corrugated Box Manufacturers Association. Kerala CBMA is an affiliated Association of the Federation. The details of the conference will be available in our web site [www.keralacbma.org](http://www.keralacbma.org).

26-29 August 2015

Pack Print International



Bangkok International Trade & Exhibition Centre, Bangkok, Thailand.

A LEADING TRADE FAIR FOR THE INDUSTRY, BY THE INDUSTRY.

Here at Messe Düsseldorf Asia, we believe that our synergistic partnership with The Thai Packaging Association and The Thai Printing Association, offers a winning platform with PACK PRINT INTERNATIONAL. Since its premiere in Bangkok, in 2007, the trade fair has gained momentum over the years and enjoys a thriving reputation as a leading showcase for the packaging and printing industries in the region.

8 - 11 October 2015



Bombay Exhibition Centre, Goregaon (E), Mumbai, INDIA

NDIAPACK has grown as a brand to be reckoned with Indian Packaging Industry and world over after the successes of previous editions. Recognizing that the new trends and developments are essential for the industry's better future, the Indian Institute of Packaging, through INDIAPACK seeks to provide a perfect platform to bring the packaging industry under one roof. With the support expected from Ministry of Commerce & Industry, Ministry of Food Processing Industry and Ministry of Textiles, Govt. of India and many trade associations from India and abroad including World Packaging Organisation and Asian Packaging Federation, INDIAPACK is all set to continue the success story.

17 - 20 November 2015



Messe Düsseldorf Introduces  
New 'SWOP - Shanghai World of Packaging' 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)





## For Automatic Corrugator

### ELCORR



TENSION COMPENSATING DANCING ROLLERS  
AT PRE-HEATERS

### ELTRAC



WEB ALIGNER FOR LINER & MEDIUM  
AT SINGLE FACER MAKING

## BRIDGE SOLUTION

### CORR ALIGNER



WEB ALIGNER FOR SINGLE FACERS & OUTER LINER  
AT THE BRIDGE

### TENSION MASTER



LOAD CELL BASED AUTOMATIC TENSION CONTROLLER  
FOR SINGLE FACERS AT THE BRIDGE

### E+L WEB ALIGNER & TENSION CONTROLLER HELPS IN...

#### Wastage Reduction by

- Reduction in start up waste
- Reduction in trim wastage

#### Quality Improvement by

- Uniform Heat Transfer at pre heaters
- Uniform Tension Distribution

#### Capacity increase by

- Reduction in operator dependency
- Consistency in product output

## Erhardt + Leimer (India) Private Limited

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FOR MORE DETAILS, PLEASE VISIT OUR WEBSITE : [www.el-corrugated.de](http://www.el-corrugated.de)

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## Benefits

- Recycled wash water for glue mixing
- Viscosity detect & control technology
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