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# MASTER CARTON

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KERALA CORRUGATED BOX MANUFACTURES ASSOCIATION

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## From the Editor's Desk

It is a known fact that in the industrialized world a sizeable quantity of food at retail and consumer level is thrown away due to improper packaging, while a similar figure is wasted during post-harvest handling and processing. "The amount of food wasted and lost globally is shameful. Millions of people around the world go to bed hungry and yet millions of tons of food end up in trash cans or spoiled on the way to market. We have to tackle this problem in every country in order to improve food security and to end poverty, said by President of the World Bank Group.

I feel, timely preserving through appropriate food packaging can help tackle this very serious problem to some extent and can reduce the huge impact on both environmental and financial losses. Corrugated packaging can be tailored to fit each product precisely and hold it securely during transport. It can be designed to ensure easy opening and handling without product damage. A vital role is being played by corrugated packaging industry throughout the supply chain. Food packaging ensures food security and safety, enhances both logistics management and product identification. Corrugated carton's versatility, 100% recyclability and protective qualities make it an integral part of the range of measures needed to solve the problem of food waste, to some extent.

According to recent surveys, it has been proved that one of the basic motivation factors in the product purchase of today is the transmission of real image of the product on the packing boxes itself. In this respect, packaging is the key factor to transfer the image of product to the consumer. There are tremendous scopes for the corrugated industry in the area of food packaging. We have got to make more concentration on this vast area and bestow more attention to produce vivid type of packaging boxes to meet the huge requirements of food packing.

I hope the regional associations can hold technical seminars on food packaging in their areas for the benefit of the corrugators.

Regards,  
R Suresh  
Chief Editor



The views expressed in the columns of 'Master Carton' are not necessarily those of the KECBMA or the editor or the publisher and they accept no responsibility for them.

## *Publisher's Message*

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Dear Friends,

Our Association is growing stronger with the support of all our members. The main focus of the Association during the period was related to the increase in paper prices and the consequent need to increase the carton prices. Most of the corrugators have not realised proportionate increase in carton prices, in line with the increase in paper prices. During the last few months, corrugators are finding their profit margin continuously shrinking.

The main problem continues to be the readiness with which corrugators agree to the low prices for their cartons. We are dancing to the tune of most our customers and the customers are happy. It is time corrugators stand firm and say "NO" to supply cartons without better prices. If business do not generate sufficient profit, let that customer go. Corrugators can concentrate on business with profits even if it is only smaller volume.

We have just conducted our Annual General Body Meeting. This was a very successful event and we had high participation and attendance. All members actively took part in the function.

We are also in the preparation stage of the Annual Conference 2015 of FCBM. Our conference Chairman Mr. Suresh and our president Mr. Xavier are laying the strong foundation network for the event. Let us all co-operate with them to make this a grand event.

With Regards,

N.X. George.



## From the President's Desk

Dear friends,

I have great pleasure to state that our Association's 34th annual general body meeting and family get-together was well organized with good attendance at Hotel Presidency, Ernakulam on 29th March, 2014. I am glad that during this year we were able to make some attempts for the betterment of our Association and the industry at large. The detailed report was presented by our Secretary which is included in this issue.

The Packaging industry, as you know, is passing through a difficult period due to the general slackness, frequent price increase of all commodities and of course the economic recession. We have to find ways and means to overcome the present predicament. More attention has to be bestowed on indigenous market with new patterns and designs of packaging materials. The conventional method of packing system is slowly changing to new methods. There are several new avenues where we have to make attempts. The mushroom growth of Malls and Super markets demands varied types of packing materials for their consumer products. I think most of these packaging materials are coming from outside our State. We have to make efforts to capture the retail ready pack market in our state and if we succeed in our attempt there will be enormous orders from these sectors. Modernisation is the key factor for producing such quality packing materials in different sizes and patterns. We have very efficient and experienced senior members in our Association who can give advice on such matters.

During April 2013 we had faced a very severe problem of frequent price increase in paper and other inputs. As you all know we have taken several actions directly by approaching paper mills to be reasonable with their prices and also requesting the carton buyers to extend their co-operation. I am glad that both these parties had extended their co-operation, to some extent. At Federation level also they had initiated several remedial measures and I must appreciate our parent organization for taking initiative in this regard.

Now we are facing a similar situation of paper price increase and we shall be discussing this subject in this meeting and shall take appropriate remedial actions in this respect.

As you all know during the last FCBMI annual conference held at Chennai a team of more than 20 persons attended the conference. We have been approaching the Federation to give us a chance to organize the annual conference of the Federation for the last several years. Now the Federation has considered our request and entrusted the conference of 2015 with us. Another two achievements in the same conference was the election of our Past President and Technical Committee Chairman, Shri N.X.George as the Vice President II and the nomination of our Past President and Publications committee Chairman, Mr.R.Suresh as the Editor of the Corrugator magazine of the Federation. We are sure that under the dynamic leadership of our Conference Chairman, Sri Suresh and the then Vice President I, Shri N.X.George and with full support and co-operation from all our office bearers and members we will organize the seminar and Exhibition in a thumping manner which would definitely boost up the image of our Association.

I am very happy to inform that this year we have 13 new members from different districts of our State whose names are given in the annual report.

I am glad that a team of members had come from Malabar area under the guidance of Shri Velayudhan, Vice President of our Association and I thank each one of them for finding time to attend this meeting. I have also great pleasure to thank our members who have come far and near to attend the meeting. I also thank the non members who are supposed to join us as members soon. Further, I also thank our sponsors of the AGB meeting

Let us all work together in once voice for the betterment of the industry and our Association.

THANK YOU.

Xavier Jos





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# WHICH FLUTE PROFILE IS BETTER- B FLUTE OR C FLUTE?



**Ramkumar Sunkara**

SS Consultants

Traditionally corrugated boxes have been manufactured by semi automatic process for a very long time. Off late we have seen these boxes being manufactured by automatic plants. There are many differences between boxes made in semi automatic process and automatic process. One of the significant differences is flute profile. Traditionally in semi automatic process B flute has been the most domination profile. We have 3 ply, 5ply and 7 ply boxes made from B flute profile. We have also seen textile industry using 9 ply and 11ply boxes being made from all B flute.

With advent of automatic plants mushrooming all over India, combination flutes have become the norm. In 5ply we have BC, BA, and CA flute profile and now EC flute profile is also being manufactured on auto lines. There are couple of 7 ply automatic plant with BCA,ACA, BAA and CAA flute profiles.

The specifications of corrugated boxes of many users have been drawn up long back when the only flute profile which

was dominating was B flute. As a result most 5 ply specification is BB flute profile. Now with automatic plants producing 5 ply boxes with combination flutes, it has become necessary to revise BB flute profile to combination flute profiles like BC profile or BA profile.

In such a scenario, the question being asked by box consumers is which flute profile is better.

In order to understand which flute is better, we need to study various properties of the corrugated board and boxes.

There are 8 important properties to be studied, which are as follows:

- 1 Top to Bottom compression strength,
- 2 End to End compression strength,
- 3 Drop test,
- 4 Bursting strength,
- 5 Flat crush strength,
- 6 Edge crush strength in CD (CD-cross direction)
- 7 Flexural stiffness,
- 8 Calliper.

- 3 Drop test,
- 4 Bursting strength,
- 5 Flat crush strength,
- 6 Edge crush strength in CD (CD-cross direction)
- 7 Flexural stiffness,
- 8 Calliper.

In some "C" flute properties are better or same as "B" flute properties. In some "B" flute is better than "C" flute.

For 3 ply boxes, we have two options in flutes. we can have both flutes as "B" flute boxes.

For 5 ply boxes, we have two options in flutes. We can have both flutes as "B" flutes (Traditional) or we can have combination flutes. That is one flute is "B" and other is "C". By doing this we incorporate into the box the good performance of both flutes.

Sl. No.	Parameter	unit	B flute	C flute	Remark
1	Top to Bottom compression strength	Kgs	284	348	C flute better
2	End to end compression strength	Kgs	135	105	B flute better
3	Drop test (Average no of drops)	No. of drops	5	5.8	C flute better
4	Bursting strength	PSI	323	320	Similar for B and C flute
5	Flat crush	PSI	46.5	40.7	B flute better
6	Edge crush test (CD)	Lbs/ inch	51.4	51.3	Similar for B and C flute
7	Flexural stiffness	Lbs/ inch	50.6	97	C flute better
8	Calliper of corrugated board	mm	3.0	.1	C flute better

Out of the above 8 performance parameters, we observe that "C" flute has better or same properties in 6 of them. This is shown in table below. In other words for "C" flute boxes, the performance parameters are same or better in 75% or parameters as against 25% for "B" flute.

For the purpose or discussion we have considered the boxes made in B flute and C flute using 200 GSM paper for liners and 140 GSM paper for fluting.

**Observation from the above table:**

The most important parameter for the corrugated box is top to bottom compression strength also referred to as the stacking strength of the box. The compression strength

formula for the corrugated box is :  $C.S = 0.599 \times ECT \times \text{square root (Perimeter} \times \text{Calliper)}$ . From the formula it is very clear that CS of the box depends on ECT (Edge crush strength of the corrugated board. The ECT of B and C flute boards is similar while calliper of the C flute board is much more than that of B flute board. As a result the top to bottom compression strength of C flute box is better than that of B flute box when same paper grade is used in both.

The second most important performance parameter is Flexural stiffness of the corrugated box. It is very clear that C flute is better than B flute.

Third most important performance parameter is drop test.

When the filled boxes are dropped from certain height (say for example 12" height), we evaluate how many drops the box can take before it fails. In this case also C flute performance is better than B flute.

Based on the above observation we can conclude that box with BC flute will perform better than box with BB flute. Although box with CA flute performs better than BB and BC flute boxes, it is not advisable to use CA flutes due to other reasons.

One reason to use B flute on the top is to ensure smooth surface for better printing. Also maintaining dimensional tolerances is better with B flute. Hence BC flute box is better than CA flute box in general.

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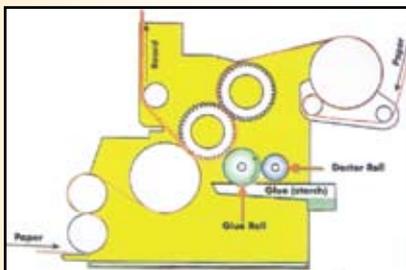
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# GLU APPLICATION IN CORRUGATORS

*Optimisation potential from the viewpoint of a metering roll manufacturer*

*Mr. Georg Selders, Apex Group of Companies*

Good printability of corrugated board has increasingly gained in importance during the last few years. The mechanical limits of conventional glue application systems in particular often result in excessive and uneven glue application, which can negatively influence the printability of corrugated board. The glue and doctor rolls acquire special importance here. As metering roll manufacturers, we see the glue and doctor rolls not simply as an application system, but also as a very precise metering system. Viewed from this angle, the glue and doctor rolls in themselves have a high potential for optimising glue application.



## Doctor roll

The importance of the doctor roll is often considerably under-estimated. Whether in documentation or in discussions with the customer - the glue roll is actually always to the fore. However, the doctor roll is also a determining factor for precise glue application. Previously, conventional glue plates were equipped with chrome rollers as standard. Generally, the doctor

roll is wiped with doctor blades that can comprise very diverse materials. This automatically leads to boarding (formation of stripes) and related height differences, which are generally not detectable when the rolls are fitted. However, these height differences ultimately result in different film layer thicknesses in the glue gap. As a result, the metering characteristics of the roll change during the overall period of use. With backlighting, these height differences become clearly visible. (see illustration above)

In practice, however, the rolls are often only replaced in the case of clearly visible and deep-seated damage.



Against this background, we introduced ceramic doctor rolls to the corrugated board industry for the first time in 1996; these rolls have a highly wear-resistant chrome oxide coating that prevents boarding.

Due to the increasing quality requirements of recent years, we now almost exclusively manufacture ceramic doctor rolls. The advantages in comparison with conventional chrome rolls are:

## Advantages of ceramic doctor rolls:- Surface hardness HV 1450-1550

- Surface roughness max. HA 0.8/ RZ 6.3 with more favourable surface characteristics (surface tension)
- Concentricity tolerances T.I.T. max. 10µm
- Form variation over the entire roll max. 10µm
- Diameter tolerance according to machine manufacturer's specifications

Both new rolls and existing chrome rolls can be designed with ceramic surfaces. In addition to the even glue film, this design guarantees a longer and above all, more consistent lifetime.

## Glue roll

On closer examination, various problems emerge in connection with the glue roll. These include, in particular:

diameter, corrosion, mechanical stress, concentricity tolerances in conjunction with the doctor roll, excessive or uneven glue application, cleaning problems and many other issues depending on the specific situation, such as for example, increased machine speed, builds up of hydraulic pressure in the gap, aquaplaning, air problems, squirting, packing, etc.

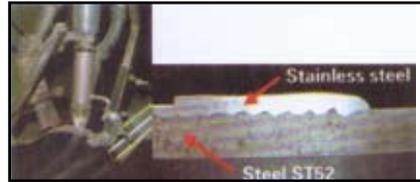
### Roll diameter

In principle there are two ways of renovating glue rolls. For example, the glue roll can be desurfaced to the point of the deepest damage, restructured or line-patterned and then chrome plated. However, this results in considerable under-dimensioning of the roll with repeated treatment. This is considered very critical, as rolls with varying diameters automatically influence the metering situation. Practice has shown that this can lead to unforeseeable problems with regard to gap setting, and that even with an identical gap setting the glue application quantity changes due to the change in the differential speed of the rolls in relation to each other. In addition, this type of roll renovation is effectively a "one-way street", which means that a new roll body will have to be manufactured at some point in time.

The second method of renovating glue rolls comprises desurfacing the glue roll to the point of the deepest damage, building up the diameter with copper, steel or structuring or line patterning and, if necessary, chrome-plating the roll. This has the advantage that the setting and metering situation in the machine is not changed by replacement of the roll.

Our company rejects the concept of building up glue rolls with copper in principle, as this soft composition results in a reduced lifetime. Instead, we use the specially developed AST steel fusion method, in which the original diameter of the rolls is restored with steel or stainless steel. (see Illustration

below). The surface quality and lifetime of a roll renovated using this method is equivalent to that of a new roll. In addition, this method can be used as often as desired, if the body structure is good.

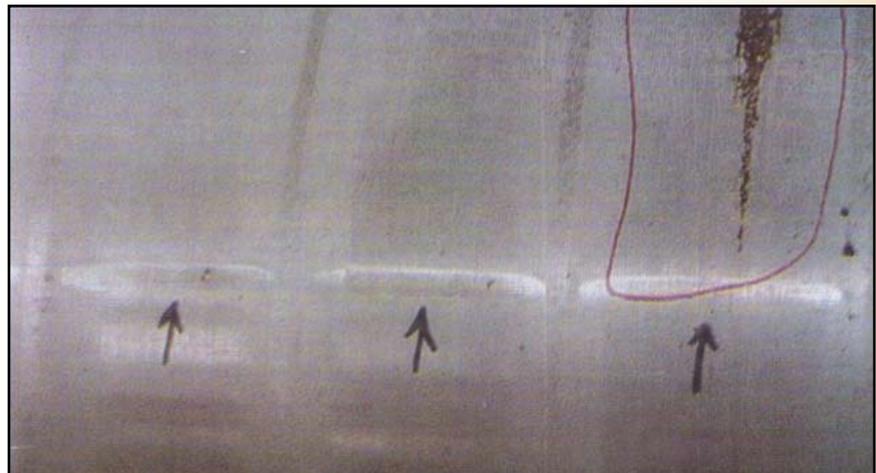


### Stainless steel glue rolls

On account of increased quality requirements and the further development of surface structures (line patterns), glue rolls are now predominantly manufactured in stainless steel. The reason for this can be clearly seen with the help of the following case study: a chrome-

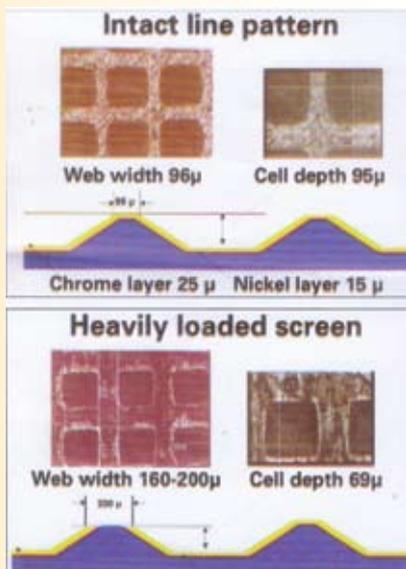
plated glue roll is removed after 9 months and sent back by the customer for inspection, with the comment that the chrome-plating on the roll is poor. The covering note indicates that the line pattern is not mechanically damaged and the cell structure is visible well preserved, but the chrome-plating appears to be poorly executed, as the roll is already showing signs of corrosion.

At first glance, one might share this opinion, but closer examination of the roll surface results in other findings: optical tracks in the running direction and marks in the form of parallel lines can be detected on the surface with the bare eye. There are signs of corrosion in the different areas.



More precise measurements of the line pattern using a microscope produces web widths as in the original line pattern (96µm) on the one hand, and web widths of 160 to 200 µm in the areas where the first signs of corrosion were evident. What does this mean? The following illustration shows the composition of the roll.

After application of the line pattern, the roll was nickelplated with a layer of approx. 15µm and chromeplated with a layer of 25µm. This gives a web width of 96µm and a cell depth of 95µm on the new roll. At the heavily stressed points, a cell depth of just 69µm and a web width of 200µm were measured.



This means that the surface has already been subjected to such heavy mechanical stress at these points that there is no longer adequate corrosion protection. The photographs also show that an open structure is already visible in the remaining chrome/nickel layer. Against this background, it is completely normal for corrosion phenomena to occur. In this case,

the normal mechanical stress on the surface has very quickly resulted in the roll no longer being serviceable due to initial corrosion phenomena. In the areas where the roll has corroded, the changed surface characteristics also influence the application behaviour of the roll. Due to differences in diameter of corrugated rolls with increasing wear and soiling problems due to hardened glue, the often little-used edge area is usually subjected to particular stress.

With a stainless steel design the roll is just as stressed, but no corrosion occurs. The metering behaviour remains constant for longer, and stainless steel rolls therefore have a considerably longer lifetime.



### Ceramic glue rolls

Due to the high mechanical stress to which glue rolls are constantly exposed, one might ask: why are highly wear-resistant ceramic coatings as used for doctor rolls, for example, not also recommended for glue rolls instead of stainless steel? Surface materials such as chrome or a ceramic coat of tungsten carbide are

used for most corrugator rolls. The same or a harder surface material than that used for corrugator rolls is not suitable for glue rolls, in our opinion, because the issue here is which roll surface is damaged first in the event of contact between corrugator and glue roll. The cost of a corrugator roll set in comparison to repairing a glue roll speaks for itself here.

### Con centrity tolerances

In order to obtain even meterin, a higher T.I.R (Total Indicated Runout) accuracy must be achieved as the gap decreases. There is a large potential for optimisation here, particularly with existing machines, but to some extent also with new installations. In the incoming inspection of more than 270 glue sets during the past year, we have determined an average concentricity tolerance of 0.03mm in relation to the bearing seat.

If 2 rolls are used with a T.I.R (Total indicated Runout) accuracy of 3 hundredths of a millimetre and maximum deflection of the rolls to the gap, a gap varying up to 1.6 tenths of a millimetre. This gap increase of up to 60% will also automatically be found in the glue film. In order to keep the fluctuations in the glue application as small as possible, it is essential to have a larger glue gap in this situation, irrespective of the glue quantity actually required for bonding.

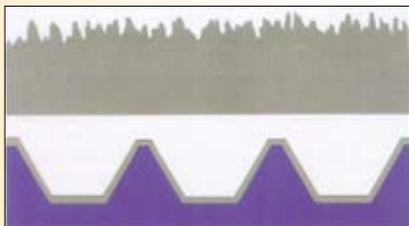
The concentricity tolerance of ceramic doctor roll is within 10µm. Stainless steel rolls are manufactured as standard with a concentricity tolerance below 20 µm. A concentricity tolerance of the glue roll within 10µm is technically

possible, but is associated with a considerably higher cost. One is doubtless also entering a border area here, as the roll bearings and their tolerances must also not be neglected.

This section deals with the various surface finishes and with new developments that offer further potential for the optimisation of glue application.

**Existing glue roll types**

In principle, we distinguish between two different surface finishes on glue rolls in the corrugated board industry. At first, one or the most frequent used, the line patterned type, and secondly the structured type (also called "sand-blasted" or "matt-finished")



Structured (sand-blasted) surface and line-patterned surface

Structured or sand blasted chrome rolls have a shorter lifetime and are cheaper to manufacture. Structured rolls have a considerable smaller, but largely undefined volume, while by comparison line-patterned blue rolls with standard line patterns between 7 and 10 lines/cm have an extremely high, but precisely defined volume. They are more expensive to buy, but have a considerably longer lifetime.

**Development of finer line patterns**

Because with conventional standard line patterns considerably more glue is often applied than is

required for satisfactory bonding- despite the smallest mechanically possible gap setting- the question of using structured rolls constantly arises, despite the well-known disadvantages, as these transfer a much smaller quantity of glue to the surface.

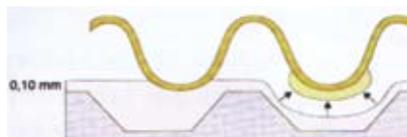
In order to utilise the advantages of a constant line pattern over a structured surface without applying more glue, finer line patterns are increasingly being used today. Continuing developments result in new line patterns, which are universally usable and bring further advantages.

Most standard line patterns today are between 7 and 10 lines/cm. With a conventional standard line pattern of 8 lines/cm, the surface therefore has more than 8 cells, evenly arranged next to each other, per running centimetre. This gives a cell aperture of 1.2mm with a cell depth of 0.35mm and a volume of around 120cm<sup>3</sup>/m<sup>2</sup>. This volume corresponds to a glue layer thickness of 0.12mm.



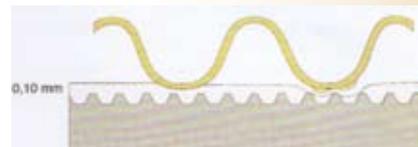
Line pattern 8 lines per centimetre

The proportion of an F-flute profile to the cell size is shown below. For simplification, a glue film of 0.1mm has been assumed in the drawing. At least 30% of the cell volume must be added to the actual glue film on the roll surface. With a line pattern of 8 lines/cm and a volume of 120cm<sup>3</sup>/m<sup>2</sup>, this means an increase in the glue film of 0.036mm.



Line pattern 9 lines/cm in proportion to the F-flute

A line pattern with 50 lines/cm and a volume of 35cm<sup>3</sup>/cm<sup>2</sup> gives a cell aperture of 0.18mm with a depth of just 0.05mm. The following illustration shows the changed proportion between the same F-flute profile and a finer line pattern.



Line pattern 50 lines/cm in proportion to the flute

Assuming that once again at least 30% of the cell volume must be added to the actual glue film, an increase of just 0.012mm results in the new situation.

If we similarly compute an 8 lines/cm standard line pattern with a 50 lines/cm line pattern, a reduction in the useful total glue film of approx. 18% results, with a glue film of 0.1mm in the gap.

**Conclusion:**

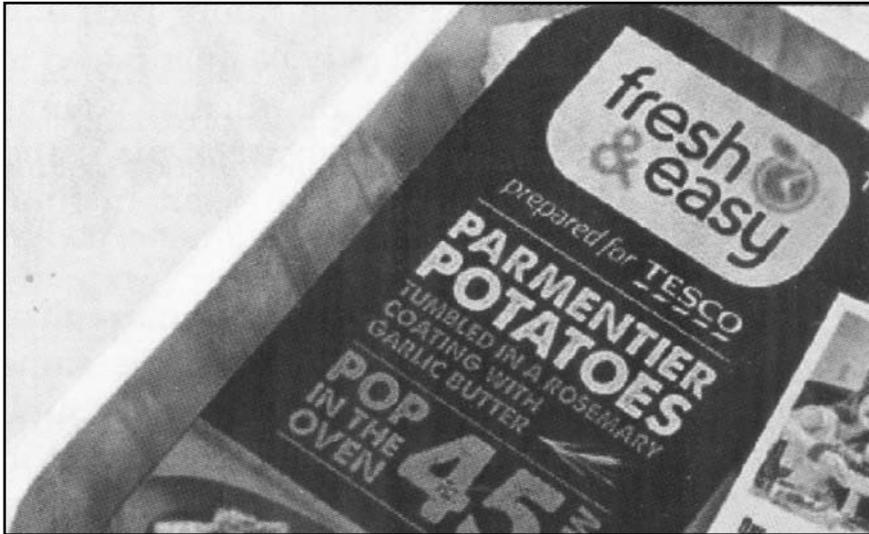
A finer line pattern offers the potential to reduce the glue application by 10-20% with the same glue gap setting! In addition, finer line patterns enable quality improvements and cost savings, for example drying times (energy saving). higher machine speeds without extra drying, and better printability of the corrugated board.

**Single facer/glue applicator (laminator)**

The metering situation in the single facer and the glue applicator is very different. With the single facer, the interval between the time of glue application and actual bonding is very short. In addition, a higher bonding pressure can generally be

*contd... to page 27*

## PERSONALISE FLEXIBLE PACKAGING BECOMES A REALITY



Leading potato producer Branston recently launched its new nationwide 'pic on a pack' initiative, an opportunity for consumers of prepared potatoes to have their photos printed on to packs of parmentier potatoes in Tesco's fresh & easy range of ready meals.

This first of a kind competition has been made possible due to the introduction of cutting edge, digital print technology used by Shere print to produce flexible packaging. The complete digital workflow used by the company offers a fast turnaround design to print process. The advantages of digital printing have made the personalisation of flexible packaging possible as various designs can be printed consecutively without any need for changeovers or plates.

Mark Wilcox, Branston technical manager, said, 'The Pic on a pack' initiative is a way of getting people talking about our great

products in a category that is hard to generate any noise. Tesco was very keen to embrace the project and saw the benefits in linking directly with its customers. We have worked closely with the Shere Print team at Ultimate Packaging to deliver the first digitally printed, personalised lidding film in produce. Using digital print has made the project possible as each impression can be different, there are no plates involved at all! Digitally printed personalised labels have been around for some time but personalised flexible packaging is a new and exciting opportunity.

Part of Ultimate Packaging, Shere print has recently been accredited with ISO9001, ISO 14001 and BRC Safety Standard, which means the company can now digitally print food packaging for all food brands and retailers; a major accolade for the company and a first for the UK marketplace.

Chris Tonge, Shere Print sales

and marketing director, said, The past year has seen the business commit a great deal of skill, hard work and investment to develop digital print technology to produce flexible packaging for the food sector. I am proud and excited to say that following detailed audits and independent testing, we now have the capability to produce digitally printed food contact packaging for brands and retailers, which confirms our status as a market leader. The use of our Smart Digital Work flow ensures we can deliver files to the digital press quickly and accurately, streamlining the process from design to finished pack.

The 'pic on a pack' project is a key example of what can be achieved when using digital print to produce flexible packaging.

The smart Digital workflow used by Shere print and its sister company Sharp Iris, a design, photography and 3D visualisation company, has been enhanced with the installation of the HP Indigo WS6600 press and the use of Esko software packages. The Shere Print and Sharp Iris teams will also support HP and Esko with 3D visuals and digitally printed samples at LabelExpo Europe this month.

The companies agreed that the show provides the perfect platform to demonstrate how the Grimsby based group has used skill, Experience and smart investment to lead the industry utilising 3D visualisation and digitally printed, flexible food packaging.



# THE TIMES OF INDIA

22.03.2014 | PAGE 18

## Lack of regulation, input costs hit cardboard box makers hard

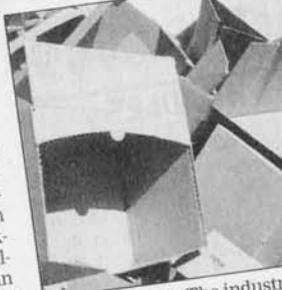
### One-Fourth Of Manufacturers In Country Already Shut Shop

Sushma UN | TNN

**Chennai:** About a fourth of the corrugated box makers in the country are in danger of shutting down over the next few months as they are unable to pass on cost pressures to their clients. Several of the 12,000 companies in the country who make corrugated boxes (the cardboard boxes in which most goods are packaged and delivered) have already shut shop, as increase in raw material prices and lack of regulation in the industry is making business unviable.

With prices of raw material like paper, glue and stitching wire and petroleum products going up by about 30%, makers of corrugated boxes are living hand-to-mouth.

Lack of regulation, which leads to excess capacity and intense competition, labour issues and the muscle power of large customers over the smaller players are holding box makers from hiking prices



#### SECTOR IN A BOX

► Prices of raw material like paper, glue and stitching wire and petroleum products have gone up by about 30%.

► At current rates, at least a hike of 20% is needed for the industry to survive

► As more players are setting up shop, there is a constant problem of oversupply and customers refuse to pay the hike in rates

to manage costs. The industry has been fighting for price hike for months now in vain. And what is worse is that this problem of plenty has no solution in sight.

"There is no regulation with regard to companies entering the industry, and since there are no barriers to entry since it is a low-capital business, a lot of new players set up small units. This leads to heavy competition, which makes it difficult to hike prices," says Anil Kumar Reddy of the Federation of Corrugated Box Manufacturers of India.

Till 2007, the industry had regulations on new players entering the market, but it has since been lifted and the industry has seen a barrage of new players.

This oversupply of boxes in the market, coupled with the sheer muscle power that the customers exercise on the small scale units, is making price hikes extremely diffi-

cult, Reddy says. The customers, who are usually large multinational companies across industries like automobile, textile, food products, and FMCG, are in a position to tell every supplier that there is another person willing to give better prices, and with such oversupply, it is hard to effect a price hike, he says. The Rs 12,000 crore industry constitutes primarily of tiny and small scale units.

The industry works on margins of about 5% and at current rates, a minimum hike of 20% is required so companies will survive, Ramchand Arora, president of the federation said.

In addition, shortage of labour is plaguing the industry, and efforts are on to set up a training institute. "We have secured land for this near Chennai and are planning one along the lines of the printing training institute in the city," said Santosh Lath, a member of the federation.

# KERALA CORRUGATED BOX MANUFACTURERS' ASSOCIATION

## ANNUAL REPORT 2013

With much pleasure, I am presenting the Annual Report about the activities of Kerala Corrugated Box Manufacturers Association during the year 2013.

First of all let me thank all of you, for the good support and co-operation extended to our Association for the smooth functioning of our activities.

As you all know, there have been many activities in the Association during the year 2013. I am proud to say that we were able to improve the fame and image of our Association in the records of the Federation and proved that we are not lagging behind any regional associations affiliated to the Federation in handling important matters and projects for the betterment of the corrugated industry.

The last annual general body meeting was held on 23-2-2013 at Grand Hotel, Ernakulam and most of the members with their families attended the general body meeting. Along with the AGB we organized a technical seminar on 'solar energy for corrugated industry'. We also celebrated 'family get together' which was really a grand show. I thank the members and their families who attended the last AGB meeting.

I am happy to mention that under the able and dynamic leadership of our President, Shri.Xavier Jos we had carried out several promotional activities of our Association successfully. This would not have been possible but for the support, co-operation and timely advice extended by our Past Presidents, Shri

N.X.George, Shri R. Suresh, K.R.Raju and also the Vice Presidents, Mrs. Annie George and Mrs.Prasanna Peter and other office bearers, Managing Committee members and our fellow members. I thank each one of them for their full support and co-operation.

You may be aware that our Association is entering to 34th year of service to the corrugated packaging industry in Kerala. We can be proud that our Association is the apex board of corrugators in Kerala with a strong membership and affiliation with the Federation of Corrugated Box Manufacturers of India and also in a much-noticed position in the corrugated industry in the State.

### Committee meetings:-

During this year, our Executive Committee and Managing Committee met several times to discuss about various matters for future course of actions to be initiated for the betterment of the industry and the improvement of the Association's activities.

### Communications

Association had been keeping regular contacts with the members through communications both by e-mails and by post. Whenever new notifications announced in relation to the budget and excise matters and information about other important matters connected with the industry, the copies of those notices/details were regularly being sent to members through direct mailing system from Federation office and also to non members from our Association.

### Technical Seminar

Along with the AGB meeting a

Technical Seminar on the subject of 'Solar Energy and corrugated industry' was also arranged. The seminar was inaugurated by Sri R.R.Ankola, President of Federation of Corrugated Box Mfrs. of India. The Faculties for the seminar were Mr.Georgekutty of Lifeway Solar Devices and Mr.Sankar of Team Sustain. The Faculties had explained the process of setting the solar panels, functions and storage of energy received through solar panels. Mr.Ajay Gupta of Asian Pulp and Papers, Bangalore also presented a paper on 'quality parameters of imported Kraft paper'. The main aim for selecting the subject of 'Solar Energy' was to find out whether this energy could be utilized profitably in substitute of Electricity Board's supply for domestic uses other than running of machinery and equipments.

Mr.R.R.Ankola, President of Federation appreciated the President and members of the Kerala CBMA for making such an innovative thought. The technical Seminar was attended by about 75 corrugators from different districts of Kerala. All the participants appreciated the idea of selecting such a novel subject especially when the State is facing acute shortage of power and high cost of energy charges.

Another technical presentation was arranged on "carton drier unit" by M/s. Thermen Technologies, Bangalore along with a video presentation for the benefit of the corrugators, in view of the problems being faced by the corrugators for drying the carton.

### Price increase problem

During end of April, 2013

when the prices of Kraft paper and other raw materials had gone up abnormally, Association took initiative in convening immediate committee meetings and discussed the matter in detail and took remedial measures in the form of approaching the box consumers through an appeal from the Association requesting for 20% increase on existing carton rates.

Also, Association made news coverage in Malayala Manorama and other leading dailies highlighting the problems being faced by the corrugated packaging industry for the information of the carton buyers. The members and non members were advised to stick on to the increased rates for the survival of the industry. All these actions had created a good impact among the consumers about the genuineness of the situation and all the corrugators got the benefit out of it.

#### **FCBM activities**

We have been keeping good relationship with our parent organization, Federation of Corrugated Box Mfrs. of India through out the year. The Managing Committee members from our Association had been attending the MC meetings of the Federation regularly and they also attended the special meeting arranged in abroad at Tashkent in Uzbekistan.

The annual conference of Federation of Corrugated Box manufacturers of India was celebrated from 13th to 15th December, 2013 at Leela Palace Hotel, Chennai. The conference was comprised with many programmes like managing committee meetings, annual general body meeting, election of new office bearers, exhibition, series of technical seminars, interactions, site seeing,

cultural programme, mega dinner etc. etc. SICBMA deserves special appreciation for making the conference a grand success. From our Association, we had deputed 22 delegates for participating in the conference.

#### **FCBM Vice President II**

It is a matter of pride for our Association that during the conference, our technical committee chairman and past president, Sri N.X.George has been elected as the Vice President-II of the Federation. It was really a recognition of his dedicated service to the Federation and corrugated industry for the last several years. It was also the result of the constant efforts made by our President, Mr.Xavier Jose, Past President, Mr.R Suresh and the senior members of our Association.

#### **FCBM Conference 2015**

After the repeated efforts made from the Association for the last few years, our Association got the opportunity to host the conference of the Federation during the year 2015. An ad hoc committee was formed by our Managing Committee for the conference 2015 and Mr.R.Suresh, Past President was nominated as the Chairman of the Conference Committee.

#### **Co-Editor, Corrugator magazine**

During the Annual General Body meeting of the Federation, Mr.R.Suresh, Past President and Chief Editor of Master Carton, has been nominated as the Co-Editor of the Corrugator, official magazine of the Federation. This was the second time Mr.Suresh was selected for the Editorship.

**New members:** We were able to enroll 13 new members from different districts to our Association during this year.

1. Classic Associates, Cochin

2. Evershine Cartons, Cochin
3. Pack N Pack, Cochin
4. Sun Packers, Kozhikode
5. Yukamer Paper Products, Calicut
6. Evershine Cartons, Puthencruz
7. Thaliyath Cartons, Narakkal
8. Xopack P.Ltd., Kakkanadu,
9. Kurian Packaging, Parur
10. Udaya Packing Co., Malappuram
11. Udaya Carton P.Ltd., Kottakkal
12. S.M.Enterprises, Kumbalangi – Mr.Sajan
13. Sree Rag Cartons, Punalur

#### **Master Carton**

The prestigious magazine of KeCBMA, 'Master Carton' had been publishing regularly for the last 17 years and it was gathering momentum from all quarters. The Chief Editor, ShriR.Suresh and the Publisher, Mr.N.X.George deserves special appreciation for the sincere efforts they are making for the regular release of the magazine.

I hope I have made a brief report on the activities of our Association during the year 2013. I take this opportunity to thank our President, Shri Xavier Jos, other office bearers, Chairmen of various Committees, members of Managing Committee and all our members for the full co-operation and support extended to me for the smooth functioning of our Association. I also thank our sponsors for the meetings and seminar and advertisers to our magazine, Master Carton. I request for the continued support and co-operation in future also.

Thank you,

**K.J.Pratheesh**

Hon. Gen.Secretary









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# “CORRUPACK CONCLAVE 2014 – MANAGING FUTURE – TARGET 2025”



to get together as many box buyers as possible. That was indeed a challenge firstly due to short time & the timing very close to year end keeping many engrossed in Budgets for next year etc. Still a decent number of box users were present & panel had many international high profile participants, Mr. Gary Gavin, VP & GM Industrial Packaging Asia, International Paper, Lon Rollinson from Mead West Vaco, & a large team from Billerudkorsnas coming to India for first time. We are happy that “Hyderabad Kraft Paper Mills Association” has been engaging with APCMA members of late & they mobilized many mills to be part of the conclave.

Starting with the FCBM Conference APCMA started its journey with CorruPack Summit 2010, with theme “Evolving Business Paradigm”. That was a mega event along with a big exhibition with operating machines for the first time in Indian Corrugated scene.

Enthused by that, Team APCMA has decided to carry forward the momentum of differentiated Conferences. The next one was “Corrupack Conclave 2013” with theme “Retail Ready Packaging” with many high profile speakers from user industry. One major departure was made in the format of event. It was made into a panel discussion model & also the timing was tweaked to make best use of time. Also to have meaningful dialogue the total was decided at max 200. Conclave started with Lunch & ended with Dinner with only one Coffee break. The speeches were short with emphasis on discussion among panellists &

Participants. The Model was a hit liked by all.

Based on that success Team APCMA decided to host the next Conclave along with the FCBM MC meeting. Time was short, less than 3 months & at the same time there was reputation to live by. We are happy as in past we came up with a relevant topic “Corrupack Conclave 2014 – Managing Future – Target 2025”.

One of the major issues concerning corrugated industry has been the disdain with which corrugated box manufacturers are treated by our valued customers. Also at the other end of the spectrum paper constitutes 80% of the cost of box & for some strange reason paper mills had not got involved with their customers the box plants. APCMA felt that to achieve Target 2025 that involvement with customers & suppliers was the first concern that needs to be addressed to establish a seamless value chain for benefit of all. Focusing on that APCMA tried its best

Mr KI Vishwanathan kick-started what was to be a very engrossing discussion with his lucid keynote address! Panelists had a balance of Box users, Paper mills, other business partners & Box plants. The discussions were very engrossing and all participants actively participated in the discussions. The reactions bear testimony to the success of this model. The first session was designed to understand what a box user needs and the second tried to address those to the extent possible.

Highlight of the event was a very explicit Valedictory address by Mr. Gary Gavin, who came all the way from Shanghai to show the way ahead for achieving the target 2025. His message was clear, 2025 is not in distant future but just around the corner & one cannot be complacent. The other was that whatever we do find a sweet-spot. Don't aim too high or too conservative.

# SINOCORRUGATED SOUTH 2014 ACHIEVED RESOUNDING SUCCESS

SinoCorrugated South 2014, featuring the latest industry information and state-of-art equipment from 600 exhibitors, welcomed a total of 29,114 visitors from across the globe. A wide range of new products were displayed and competition among suppliers was intense during this large-scale Asia-Pacific corrugated industry show. SinoCorrugated South and SinoFoldingCarton 2014 ran concurrently at Guangdong International Exhibition Center in Houjie, Dongguan from April 10 to 12.

SinoCorrugated South and SinoFoldingCarton 2014 were combined, ensuring that they would reach a record high exhibition scale, range of exhibits and number of visitors. Following all stands in Hall 3 selling out, the organizers had added Halls 4 and 5 to the event. The exhibition area spanned nearly 60,000 sqm and host 600+ exhibitors, 200 of them for the first time. The event showcased over 1,300 sets of corrugated carton and color box equipment, as well as 1,000+ kinds of consumables.

The complementary showcases, targeted at Chinese and Asia-Pacific carton makers, featured higher cost performance equipment and consumables,

helping carton and color box factories to design their purchasing policies through a powerful channel via which to acquire new products and information on tech developments and market status. They created platforms for suppliers to communicate and conduct exchange.

Over 50 international and local associations from in and around the packaging industry showed at the exhibitions. An increasing number of high profile local and international packaging trade associations worked with Reed to introduce new brands and inform more of the international market about the event. The exhibition was a vital link between China and the international market, effectively promoting the sustained and healthy development of the whole packaging industry.

SinoCorrugated South 2014 has attracted a multitude of well-known suppliers of corrugated board and carton processing equipment, consumables and parts. New technology and products were debuted here, including a number of comprehensive higher cost performance products.

The exhibitors demonstrated competitive products at the exhibitions, including the high-

speed full-automatic PUR film roll paper laminating machine from Hebei Higher Shengli Printing Machinery Group; the Brausse fully-automatic pasting machine TA1100-C6 (II) by Shanghai Eternal Machinery; the latest vertical and horizontal cutting equipment for corrugated cardboard production lines of Qingdao Kaituo-NC Equipment; the Techmach flyover tension control system and flyover deviation-correcting control system of Techmach (Beijing) Industrial Technology, the high-definition printing equipment of Zhuzhou Sinovan Packaging Technology; the fully automatic in-line printing assembly line of Guangzhou Keshenglong Carton Packing Machine, the MY-1500QP full-automatic corrugated paper die-cutting, stripping and creasing machine of Tianjin Cheng Yuan Printing Machinery Company, and Guangzhou Giant Packaging Machinery's printing, pasting and nailing production line.

In addition to exhibits, SinoCorrugated South 2014 featured activities covering a range of hot industry topics. These helped visitors learn about new products, technologies and industry trends. These include the packaging printing forum, quality color box demos, technology

seminars, production solutions and enterprise management training.

SinoFoldingCarton and SinoCorrugated South 2014 had newer, more diverse content than ever before, complemented by the traditional activities that will allow participants to thoroughly explore what's new in corrugated packaging. Side events consisted of a five-part summit forum, networking. Fun competitions, live demos, "Indian Day" and factory visits. The Summit Forum covered a range of topics, including Changing Patterns in the Packaging Industry, Innovation and Development of Paper Packaging Technologies, the China Packaging and Printing Alliance Annual

Summit 2014, Paper Honeycomb Industry Development Summit, China Flexographic Development Summit, the Reed-Yuanhe Public Lecture, Green and Creative Packaging Designs Summit and remarkable New Product Launches. Interactive games include Paper Experts' Show, the "Seals for Gifts" Activity and Grisly Manor, hosted in Mediaprint Carton World. In the Display Area, there were Carton Innovation Showcase, "Images of the Corrugated Era" and "Images of the Folding Cartons Era" Exhibitions, Boxman's Shop and Chinese Packaging Techniques & Culture Museum. A full variety of on-site activities impressed and entertained participants.

Global competition in packaging continues to intensify, SinoCorrugated South 2014 guided industry development. The exhibition attracted suppliers of corrugated carton equipment and consumables from across the world, giving them an excellent platform to demonstrate products and promote brands. Visitors also enjoyed technical exchange, product evaluation and learning opportunities. Welcome to see you at SinoCorrugated 2015 next year in Shanghai!

For more information, please visit the official SinoCorrugated South 2014 website: [www.sino-corrugated.com](http://www.sino-corrugated.com).

## *Welcome*

### ***New Members to Kerala CBMA***

- |                                    |                                    |
|------------------------------------|------------------------------------|
| 1. Classic Associates, Cochin      | 8. Xopack P.Ltd., Kakkanadu,       |
| 2. Evershine Cartons, Cochin       | 9. Kurian Packaging, Parur         |
| 3. Pack N Pack, Cochin             | 10. Udaya Packing Co., Malappuram  |
| 4. Sun Packers, Kozhikode          | 11. Udaya Carton P.Ltd., Kottakkal |
| 5. Yukamer Paper Products, Calicut | 12. S.M.Enterprises, Kumbalangi    |
| 6. Evershine Cartons, Puthencruz   | 13. Sree Rag Cartons, Punalur      |
| 7. Thaliyath Cartons, Narakkal     |                                    |

# INNOVATION

**Innovation** is the application of better solutions that meet new requirements, in-articulated needs, or existing market needs. This is accomplished through more effective products, processes, services, technologies, or ideas that are readily available to markets, governments and society. The term innovation can be defined as something original and, as a consequence, new, that "breaks into" the market or society.

Innovation has always been the success symbol of most flourishing global brands. The term innovation can be defined as something new or a novel idea or a new method which would bring something different and also providing better solutions for the requirements.

Innovation increases the likelihood of a business succeeding, however most people don't know where to start. People often think of innovating as just invention.

Innovation does not necessarily require a large budget or investment in Research and Development (R&D). It's also about new ideas and responding to new trends and market conditions, or making improvements to products and services that already exist.

As a starting point for innovation, new ideas are needed. These ideas will form the basis for new products,

services or processes which will satisfy a need, be the result of an opportunity or to solve a problem. Ideas can be sourced from any number of areas including customers or a problem you may have encountered.

## **Developing an internal culture of innovation**

Innovation requires strong leadership and a tangible vision across business. The internal culture of a business and the external culture in which it operates will influence the ability of a business to innovate.

Innovation thrives in a culture that is not afraid of risk-taking, promotes the value of experimenting, is adaptable and rewards enterprise. Innovation usually needs to be led from the top management of the business.

## **Be flexible and open to new ideas**

Managers need to adopt a positive attitude and focus on the potential for enhancing competitiveness through innovation. Listen to new ideas and ways of doing business, even if this means you have to change your current business model.

## **Allocate resources for innovation**

The allocation of resources for innovation including finance and personnel is dependent on management understanding the benefits of new ideas. Unfortunately, business expenditure on innovation is

often characterised as expenditure rather than investment, and improvements to operational processes may not be seen as innovation at all. Resources need to be allocated to innovation, even if it's only giving employees time to come up with new ideas.

A free flow of information and ideas up, down and across the business encourages the development of new ways of performing tasks and can also lead to the development of new products. Processes which allow employees to suggest improvements and ideas, circulate these ideas and be rewarded for their entrepreneurial behaviour can be implemented.

## **Invest in research and development**

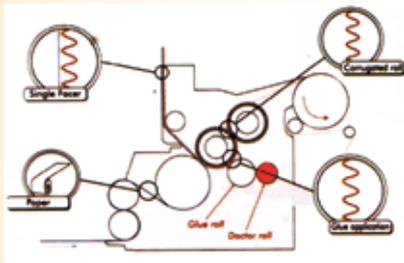
Research and development can be used to enhance the productivity of your business. Grants, tax concessions and other funding programs are available to assist investment in R&D so you can develop your ideas.

## **Attend events, training and networking opportunities**

Attend events, seminars and workshops to build your knowledge of innovation. A culture of continuous learning can be encouraged by supporting training programs and on the job training to enhance innovation skills.

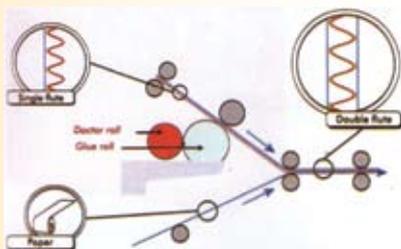
contd.. from page 14 / **GLU APPLICATION IN CORRUGATORS**

set, so that good bonding can be achieved with correspondingly less glue. Whereas coarse rollers with 7-10 1/cm were used in the past, the combinations [30 1/cm vol. 60 cm<sup>3</sup>/cm<sup>2</sup> (A,B,C flute) or (50 1/cm, vol.35cm<sup>3</sup>/cm<sup>2</sup> (E,F micro flute)] are now often successfully used.



**Single lacer**

In the glue applicator there is a relatively long interval between glue application and actual bonding. In this case the glue has more time to dry and to penetrate the paper. The pressure that can be used for bonding is also considerably less than with the single facer. Therefore, a higher volume is generally required in the glue applicator. Once again, changing from the coarse line pattern of 7-10 1/cm, predominantly used at present, with a volume of 120-130 cm<sup>3</sup>/cm<sup>2</sup>, to a 15 1/cm line pattern with a volume of 85-90 cm<sup>3</sup>/cm<sup>2</sup> (in combination with a 30 or 50 line pattern on the single facer), represents a first step.

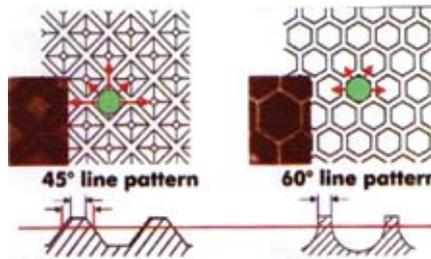


**Double lacer**

Initially, the finer line patterns were produced in exactly the same

way as the coarse line patterns, with a 45 degree angle. However, at present we mainly execute these with a 60 degree angle, as this angle brings clear advantages in cell arrangement and cell geometry. With the same line pattern, approx. 17% more cells are available in comparison with the 45degree line pattern. As all cells are exactly the same distance apart, a more even glue distribution can be achieved.

The dome shape of the cells with the 60 degree line pattern also brings a considerable advantage in respect of mechanical stress and wear, in comparison with the obtuse pyramid with the 45degree angle. As the above illustration shows, with the 60degree line pattern the cell apertures remain constant for much longer.



Cell shape with 45degree and 600angle

due to the steeper edges in the upper area, and the transfer ratios are unchanged. With the obtuse pyramid, on the other hand, the web geometry expands very quickly with increasing mechanical stress, as a result of which the surface characteristics of the roll also change more quickly in reference to the glue application.

The finer line patterns with 60degree angle are currently successfully used to improve individual glue application. In addition, our company also had the idea of further optimising the surface structure

(line pattern) to develop an all-purpose glue roll that combines the previously mentioned advantages of finer line pattern (smaller volume) with additional solutions for other problems.

**New development**

From this idea, Apex developed the positive- reverse line pattern for glue application in corrugators. In comparison with the closed cell structure of a conventional line pattern, the positive line pattern has an open cell structure. The designation reverse line pattern refers to the quasi inversion (positive) of a conventional line pattern: what previously constituted the base of a cup is now an upright nodal point in this line pattern. The webs become a network of channels.



**Positive-reverse 45 degree line pattern**

The decisive advantage of the reverse line pattern is that, in addition to the glue film in the gap, a quasi sealed glue film is present and transported in a type of grid in the roll surface.

While closed cells constantly convey air to the glue, which can lead to problems due to air accumulation in the system, this phenomenon is excluded with the positive line pattern as the air moves freely in the channels and can escape.

Increasing machine speed is also

# Quality is never an accident

As our economy integrates with the global one, more stringent standards are set apart for the corrugated box making industry by the most vigilant domestic manufacturing and exporting community. They demand innovative box/packaging designs with higher dimensional accuracy, greater structural strength and exceptional print quality to complete with the multinational invasion, which has altogether stirred our packaging concepts.

At SIPM we are very well aware of the significant role of paper and board quality in achieving the modern day standards of packaging. Accordingly SIPM innovated the right technology and modernised our mill to offer the finest quality raw material to the corrugated box manufacturing industry at the best affordable price.

SIPM's new paper/board machines are designed and configured to manufacture corrugating material that delivers higher box strength at lower basis weight (gsm), in even thickness and moisture content both on cross and machine directions.

Materials are now available in wide basis weight ranging from 110 to 400 gsm in a variety of shades and special treatments for liners and burst factor (strength capability) reading 18 to 40 BF! It is sure that Quality is not an accident.



For your specific applications, special packaging grades can also be developed.

A panoramic view of the new paper plant

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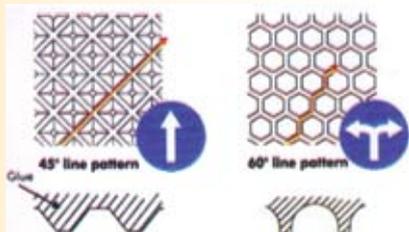
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generally associated with additional glue application in the gap, due to the build-up of hydraulic pressure in the gap and the problem of aquaplaning. Another phenomenon often occurring here is that more glue is applied in the centre than in the edge area. The positive line pattern can considerably reduce or equalise the build-up of hydraulic pressure. The result is a more consistent application quantity, irrespective of the speed range. Cleaning this surface structure is also considerably easier than with a closed cell shape. Experience with similar line patterns in the coating sector shows that, due to the straight channels with the 45 degree reverse line pattern, the dosing characteristics in the gap change, depending on viscosity. Against this background, Apex ultimately decided on the more difficult to produce 60 degree positive -reverse line pattern, as this combines all advantages of the open cell structure with the advantages of the 60 degree angle.



### Comparison of 450 and 600 positive-reverse line pattern

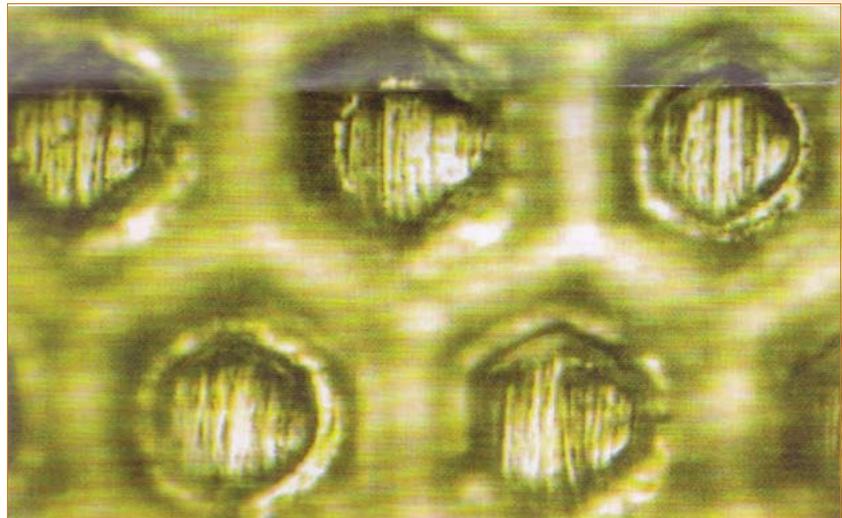
In addition, the 600 positive-reverse line pattern has considerably more grip in the glue film than conventional fine line patterns, so that good glue conduction can be ensured even with a larger gap. This new type of line pattern is currently at the trial stage and is being tested in projects on a wide range of units

used in the industry, with different glue constellations. The results are very promising.

The expected advantages are: No build-up of pressure in the gap and thus consistent application across the entire speed range and working width, no air entrainment, less or no squirting, better glue separation from the roll surface, easier cleaning and reduced soiling, less influence on good metering by mechanical stress, reduced glue application, as well as universal use in both single facers and in glue applicators for all flute types.

Naturally, all standard line

patterns and processes can still be produced in all material combinations. However, the newly developed positive-reverse line pattern has been designed on the basis of the high quality material combination of a stainless steel surface for the glue roll and a doctor roll with a specially polished ceramic coating. The long term goal must be to achieve a comparable precision in glue application during corrugated board manufacture to that already achieved when colour printing corrugated board.



Positive - reverse 600 line pattern

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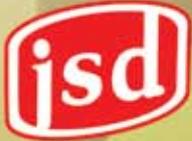
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# PACKAGING IN INDIA: INTELPAK 2013 SHOWS POTENTIAL FOR DIGITAL

*Intelpack, India's main packaging technology show.*

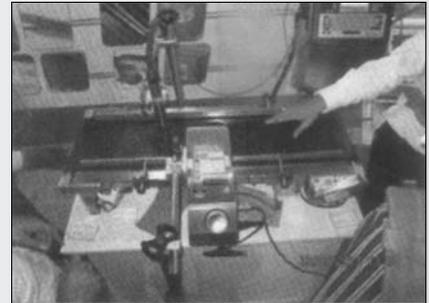


Intelpack, India's main packaging technology show took place recently. The show was co located with two other Indian Shows on food and drug manufacturing, "Foodtek 2013 and Pharmapack 2013". The combined event spread over 14,000 square meters of floor space at the Bombay exhibition Centre, Mumbai, India. During its three days, over 8,000 visitors saw the offerings of 175 exhibitors, including makers of coding equipment, tray sealing machines, converting machines, carton, erectors, flow wrap applicators, and form/fill/seal lines. Many media suppliers exhibited as well, such as for flexible packaging films, folding carton board, corrugate and seal materials. On balance, it looked like a smaller version of pack Expo in the U.S., with both Indian and international exhibitors promoting their technology and materials. Meanwhile the overall Indian and international exhibitors Promoting their technology and materials. Meanwhile the overall Indian packaging market has been variously estimated at about \$19 billion in annual value, with annual growth of 8% or more, and its food, beverage, and pharmaceuticals industries are quickly modernizing.

Digital printing was part of the Intelpack, but it was mainly for coding, marking, and label application, rather than fine color digital printing. In this industrial technology show, there were thus no color digital presses, and monochrome printing essentially ruled. The booths collectively, though, sent a strong message: India has a young, dynamic market for modern packaging equipment and technology for label and package printing and decoration. We know that change has already started, since small numbers of color digital label and packaging presses already operate in India. form companies such as Durst, Epson, and HP Indigo (none were exhibiting at Intelpack). With this ongoing change in mind we offer a summary below of several key booths from Intelpack where digital migration was evident.

### **Condot Systems Pvt.Ltd:**

Established in 1994, Condot Systems Pvt.Ltd. caters to package coding and variable data printing (VDP) requirements in the Indian market. With 80 packaging and VDP applications serving more than 2,000 production lines, the company boasts of its customer base and over 5,000 system installations in India, as well as elsewhere in Asia Pacific and



Africa. The company is a distributor for thermal inkjet (TIJ) based coders, specifically ones based on Hewlett packard TIJ technology; its suppliers include HS automatic (Denmark), Collins Ink Corporation (U.S.) and General Technology (Japan)

A Condot representative shared that the products mainly are used for numbering, bar coding in the packaging industry, and also for variable data printing in mail applications, printin onto A3 and A4 pages. He also noted that TIJ technology has two benefots that Indian customers especially appreciate, (1) its ability to print both scannable code and very small alphanumeric fonts and (2) the environment friendliness of water-based TIJ inks.

### **Control print:**

Control print Limited is an Indian coding equipment manufacturer, with two manufacturing facilities in India (Nalagarh and vasai) and 11 regional offices across the country. With a product range that includes CIJ printers, large charactor inkjet printers, thermal transfer overprinters & electrophotographic digital printers, the company

provides solutions to its various clients in industries such as automotive, chemicals, metals, and building materials industries, as well as the food, beverage, and other fast moving consumer goods (FMCG) categories.

Like Condot, Control Print also functions as a distributor for coding equipment made by overseas partners. The products displayed during the show include Alpha Jet C, a CIJ printer which is designed and manufactured with German technology from KBA- Metronoc. The company also represents the laser coders of Macsa (Spain), such as the K- 1000 for product coding. Control print appears to be a substantial company and true manufacturer in its own right, a market at least of large character inkjet printers such as the P200, and NP200, as well as possibly other coder categories such as hot roll coders.

#### **Videojet Technologies India Pvt.Ltd:**

Videojet Technologies, likely the world's biggest manufacturer of CIJ coders, has direct presence in India through Videojet Technologies (1) Pvt.Ltd. (Videojet India) Videojet India has its corporate office in Navi Mumbai and regional offices at Delhi, Chennai, And Kolkata and access to major remote locations of India.

On display during the show were two small character ink jet printers, the Videojet 1510 & 8510 along with a CIJ printer, Videojet 2360. A screen installed at the booth showed videos of other products including the Wolke M600, the TIJ printer often used in pharmaceuticals packaging in Europe, and one that attracted a lot of attention from Intelpack visitors. The company representative informed that CIJ is their main focus right now, based on Indian market demand. He

noted, though, that there is growing understanding and acceptance of TIJ coding technology. Videojet will also participate in the pack plus show in Delhi on October, and will display there both CIJ and TIJ coding technology.

#### **Info Trends' overall opinion:**

Intelpack 2013 occurred at an opportune time, in support of a growing market, one spurred by a several factors, including a modernizing retail sector, increasing Foreign Direct Investment (FDI), and key partnerships between and key partnerships between Indian and overseas enterprises. Digital printing in India is well established now for coding. Info Trends foresees that India will also transition to color digital printing for packaging and labels as well.



### **DECLARATION**

The following particulars regarding the ownership of 'Master Carton' the English tri-monthly newspaper are published as called for by the Rule 8 of the Registration of Newspapers (Central) Rules 1956.

#### **Form IV**

- |  |   |   |
|--|---|---|
| 1. Place of Publication  | : | Ernakulam   |
| 2. Periodicity of Publication  | : | Tri-monthly   |
| 3. Printer's name, nationality and address   | : | <b>N.X.George</b> , Indian,<br>Past President, Kerala Corrugated Box Mfrs. Association,<br>P.B.No.3627, Veekshanam Road, Ernakulam,<br>Cochin. 682035 |
| 4. Publisher's name, nationality, and address  | : | As above  |
| 5. Editor's name, nationality and address  | : | <b>R. Suresh</b> , Indian,<br>S.T.Reddiar & Sons(Ekm), Veekshanam Road, Cochin.682035   |
| 6. Names and address of individuals who own the newspaper/magazine and partners or share-holders holding total capital | : | Kerala Corrugated Box Mfrs. Association,<br>P.B.No.3627, Ernakulam, Cochin.682035   |

I hereby declare that the particulars given above are true to the best of my knowledge and belief.

31-3-2014

**N.X.George**  
Publisher

## CAPITAL COLUMN

# BEWARE CORRUGATORS: MYTHS & PERCEPTIONS ON PAPER QUALITY:



Peter I A

## Strength Properties:

Many of our members speak about Burst Factor and GSM and are satisfied with these two properties only while placing order for paper in addition to the Reel Size.

Burst Strength is a measure of property of paper measured in terms of the force in kg/cm<sup>2</sup> required to cause a rupture on the paper under test conditions (at 27 ±1 °C and humidity 65 ±2%). Burst Strength is higher for higher GSM paper and is made free from the effect of GSM by converting into a factor, Burst Factor (BF) (i.e. dividing Burst strength by GSM).

Higher the BF value the higher is the strength of paper due to better interlocking of paper-making fibers. Long fibers properly refined gives better interlocking than short fibers. This type of mechanical bondage of fibers develops the strength and is good for cartons.

However, these days paper mills use many wet end additives to improve BF values by increasing surface bondage of fibers.

However, on corrugating the paper under heat and compression, the strength loss in the surface bondage is more severe than the strength loss in mechanical fiber bondage. Hence the increased BF value arrived by additives, does not help much for cartons though helps Paper Mills to price higher. In other words, increased BF by additives is a kind of camouflaged way of quality increase.

Paper Mills do not give much importance to improve Ring Crush Test (RCT) which increase the box compression strength, as corrugators do not insist on RCT.

## Cobb Value : Why Relevant ?

Cobb is the measure of water resistivity and the recommended Cobb value for Kraft Liner is 25 / 35 and for fluting media 30/40. It is measured in terms of water absorbed under test conditions in 60 seconds.

The paper making fibers have tendency to absorb moisture / water and this tendency is reduced by application of sizing additives (resinate of alumina) to increase the resistivity towards water. Cobb Value above 45 is not recommended as it increases the gum consumption and reduces the stiffness of cartons.

Higher Cobb Value means, water absorbency is higher which results in higher gum consumption and consequent damages like flute crushing, de-shaping of boxes etc. Very low Cobb means water resistivity is more which may result in poor gum adhesion. Hence optimum Cobb is more important than even BF. During monsoon season Cobb value to be strictly monitored to supply complaint free cartons without any de-shaping of the box and also to obtain stable dimensions even after drying.

The right application of gum, apart from other parameters like trueness of gum rolls, its clearances, is influenced by the Cobb value of paper. In Kerala's climate conditions where humidity is relatively higher, it is suggested to go for hard sized kraft or medium sized. For Paper Mills, especially when using low grade domestic recycled materials, sizing cost increases to maintain the required Cobb Value and hence Cobb is conveniently ignored unless insisted by Corrugators.

## Higher Moisture Content Paper: Buying Water only to waste Power.

Paper moisture is also another culprit. Many Paper Mills sell paper at higher

moisture between 7 to 8, even at 10 % against the TAPPI

standard of 5 to 6 % which ensure more yield. Buying paper at 10 % moisture, corrugators pay for the excess water by 4 % for no good reason in addition to spending on excess power to corrugate such kraft.

## Why HWC is not recommended for Cartons ?

Many our members use White Duplex Board HWC ( Heavy weight Coated ) in the hope that HWC would give a stronger carton than LWC of the same grade and GSM.

This is a misconception. Eco LWC is a single coating with thin layer of 6 to 8 %. LWC coating is about 10 to 16 % depending on mill to mill coating conditions.

Customs Tariff manual 4810.1990 stipulates more than 10 % by wt of fiber content as LWC where as Heavy wt coating varies from 20 to 30 % by wt of total fiber content.

For example, a corrugator using 230 GSM HWC WDX of coating of 30 %, really use 30 GSM of kaolin ( clay ) and only 200 GSM of paper fibers . This additional coating of 30 GSM does not help a corrugator for strength of cartons though it helps on printability and gloss which is more relevant for consumer packs and not for master cartons.

Hence corrugators using HWC is buying 30 % clay instead of fibers as Paper is sold by weight . Here also Paper Mills stand to gain by selling clay at the value of fibers.

The above points are brought to the attention of our members while choosing the right type of raw materials , even though our choice is limited .

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## Wedding Bells



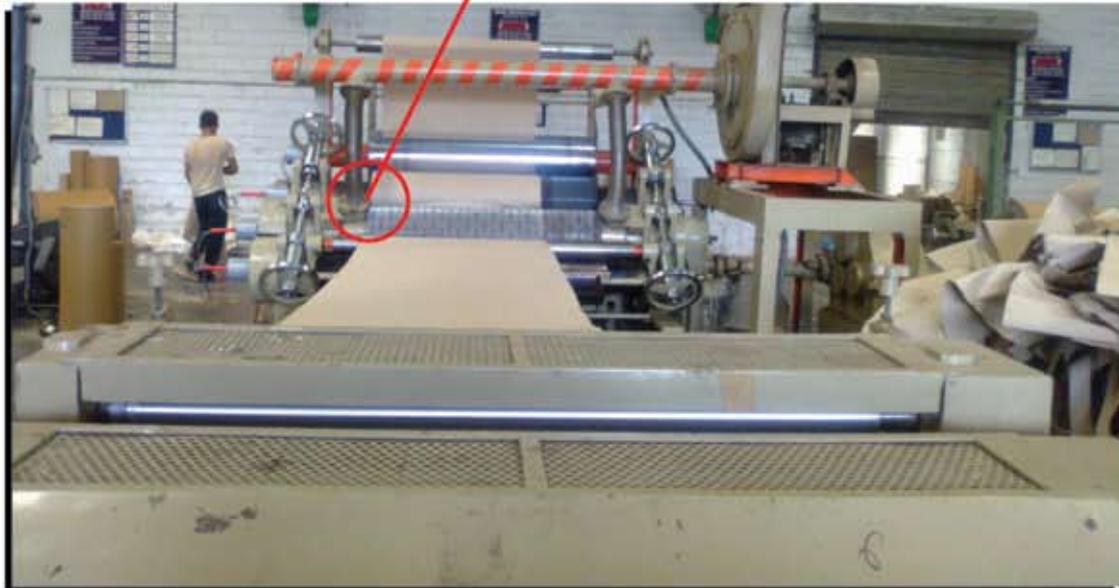
**Mr. Rajendran Suresh**, son of Mr.R. Suresh, CEO, S T Reddiar & Sons, Ernakulam and Editor, Corrugator magazine of Federation of Corrugated Box Mfrs. of India & Chief Editor of Master Carton magazine has been married to **Ms Sreedevi**, daughter of Sri Balakrishnan and Smt.Rajalakshmi, Good Morning Enterprises, Alleppey on 11-5-2014 at Camelot Convention Centre, Alleppey. Many dignitaries including Central and State Ministers, leading business men and office bearers and members of Kerala Corrugated Box Mfrs. Association, AIFMP and KMPA and thousands of community members, relatives and friends also participated in the ceremony.

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