HIGH RCT KRAFT PAPER FOR CORRUGATED CARTON – A CASE STUDY

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Abstract

Imported Waste Paper refined in excess to develop maximum bursting strength, heavily coated by starch solution in size press to impart maximum RCT of the carton often leads to the problem of 'Cracking' and “De-lamination”. The perfect paper with pptimum refining controlled application of starch coating and maintaining the porosity & bulk of Kraft Paper solved such issues.

Introduction

- Packaging Paper Demand is growing @ 10%, and estimated to be 10 million tones by 2020
- The concept of Packaging Paper has changed from 'BUST FACTOR' based to RCT/BCT based

RRP : RETAIL READY PACKAGING

- ALL PRINTED + PLUS DISPLAY
- EASY TO OPEN
- EASY TO IDENTIFY
- EASY TO MERCHANDISE
- EASY TO SHOP
- EASY TO DISPOSE

SRP : SHELF READY PACKAGING

- BEVERAGE
- CONFECTIONARY
- BAKERY
- FRUIT & VEGITABLE
- MEAT, POULTRY, FISH
- OTHER FOODS
- HEALTH,& BEAUTY
- HOUSE HOLDS, CLEANINGS
- ELECTRONICS
- PHARMACEUTICALS
- OTHER CONSUMER GOODS/FMCG

#ONLY 2% INDIAN FOOD IS PACKED AS AGAINST WESTERN COUNTRIES/WORLD 70%

PER CAPITA PACKAGING CONSUMPTION :

- CHINA 20 KG
- TAIWAN 6 KG
- INDIA 4.3 KG

MEANS MANY MORE ITEMS TO BE PACKED IN INDIA

PER CAPITA PACKAGING EXPENDITURE :

20 MARKETS OF WORLD	347.6$
WORLD	100 $
INDIA IN 2015-16	30 $

THEREFORE HUGE SCOPE FOR GROWTH IN INDIA

PERFORMANCE

- The carton is Primarily the content transport container
- Must be PERFECT square
- Must be VERTICAL
- Protect the products inside, even with 8-10 Stacks
- Transport safely from one point to another.

THE PROBLEMS FACED WITH HRCT PAPER

- The liner, the “face paper”, Creased, Folded, Printed, leads to 'cracks'
- Liner and corrugating medium gets delaminated
- Let's look a particular specification of 28 BF 180 GSM paper, with 2.2 KN/M RCT value, but with different raw material mix, refining and final quality of paper

TABLE 1 : Test 180 GSM/28 BF, HRCT PAPER

		1	2	3		4	5	6
		SET (A)				SET (B)		
1	GSM	180	181	182		180	179	181
2	BF	32	31	30		31	30	29
3	OSR	35-40	48-53	45-48		25-27	28-30	26-28
4	COBB 60	30-32	30-32	30-32		32-34	31-33	33-35
5.(a)	STARCH, KG/T	80	85	90		40	42	40
(b)	CD, RCT, Kn/M	2.4	2.6	2.5		2.3	2.2	2.4
6	Porosity - Gurley	68	70	80		20	22	18
7	Bulk	1.35	1.36	1.38		1.52	1.54	1.53
8	% Moisture	6-7	6.5-7.5	6-7		7-7.5	7.5-8	7.5
9	Complaints	Crack	Crack	Crack		No crack	No crack	No crack

OBSERVATION

Set (A) all three pulps refined up to 40-42 Degree SR

(B) SR 34-36

Major/important achievement is **POROSITY**

(A) 60-80 seconds/100 cc Air

(B) 18 – 22 second/100 cc Air

Set : A Set : B

Which means set (A) Paper, is NON-POROUS and when coated by starch @ 80-90 kg/T of paper formed a layer, dried and cannot withstand the radius of curvature of the 'BEND' of the carton and ultimately 'Cracks' in the edges.

Penetration of starch solution inside of paper is poor in case of NON –POROUS paper

The porosity has been increased in set (B) paper, resulting better starch Penetration, doesn't form a thick coating on surface. The desired carton are made without having any cracking/De-lamination

CONCLUSION :

Porosity of the test liner and flutings are very important to avoid 'cracking' or de-lamination. Along with porosity, the 'Bulk' of the paper also increases, which is highly beneficial for 'Carton' to give better compression strength.