

Financial Summary

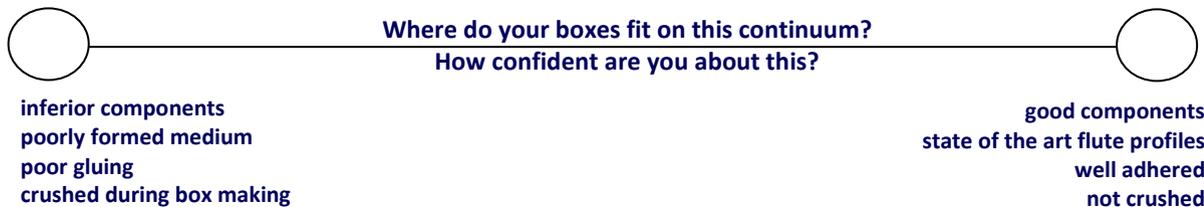
Introduction

Ask any corrugating plant manager about their corrugated board and they will say that “it is perfect” and “it has been that way for years”. From our experience of over 70 plants around the world, we know that this is not the case.

In fact the average corrugated box straight from a corrugating plant has already lost over 30% of its potential strength. Unfortunately, conventional tests like caliper, ECT, BCT and FCT do not readily measure this damage – and some plants do not even have a meaningful QC system.

There are many places where a boxes inherent strength can be compromised during the manufacturing process. For a box required to take a load, the better the box is made and the less crush that occurs, the better it will perform, and the better its performance - the lighter you can make it.

The Chalmers DST (Dynamic Stiffness Tester) is designed to exercise a sample of the corrugated board with a twisting motion to measure the structural integrity of the board. This is the most sensitive measure of component quality, corrugating defects and damage during conversion into boxes. It is the only reliable measure of where you are on the Quality Continuum, in fact you will find that it is the only QC test you need.



Value Proposition

It can be used to examine the whole manufacturing chain and isolate damage points.

Poor techniques, damaging settings or faulty equipment can be remedied

It is designed to be used on the floor by operators to do their own quality checks.

Improve product consistency and ownership by operators

By raising product quality and reducing product variability weight can be taken out of the components so that lighter board can do the same job.

Savings in raw material could typically be up to 15%

Lighter weight components will corrugate faster. **Increased production off the corrugator**

Opposition boxes doing the same job in the market place can be analyzed and board down-graded to meet the same specs produced. **Savings in raw material etc**

After using the Chalmers DST for some time, you may find that you no longer need to use ECT, BCT, thickness and flat crush on a routine basis. **Reduce testing costs**

The pay back for a well managed data acquisition and product improvement can be in as little as a day. Large plants could save millions of dollars annually. Say 10% down-grading with confidence on 30% of board grades for 100kt/a plant = 30,000t/a x \$600/t = \$1,800,000/a



Performance - Financial Model

An Empirical model has been built up using a large amount of data from three Australasian clients. This model is designed for "B" and "C" flutes only, but it gives an excellent indication of what should be achieved on "good" (uncompromised) corrugated board using different liner and medium grammages. A factor is also used for RF versus Semichem medium.

This model includes a financial calculation to show how much money can be saved using good quality, undamaged board compared to what you may be using now.

<i>Korutest cost savings model © Korutest Limited 2009</i>						
	Cost liners /short ton	\$ 560.00	\$ 617.29	per tonne		Prices in \$US
	Cost medium /short ton	\$ 480.00	\$ 529.10	per tonne		
					Medium	Offset
Actual = tested DST					Use	-2.057
lbs to gsm x =	4.882				RF	-5.057
					SC	-2.057
ALTER board grades & prices						
USA Board Grade - C Flute						
	Cost/1000ft ²	DB	Medium	SF	Actual	Theory DST
Old Board	\$ 37.00	46	33	46	15	20.9
New Board	\$ 30.84	35	33	35	17	17.8
Cost Savings	\$ 6.16					
Cost % savings	17%					
Weight savings (lbs)	22					
Wgt % savings	16%					

The Chalmers DST can be used to isolate production problems. Once you have fixed any problems and are making an improved box, you can down weight and still have superior performance.

In the model above, the new grade, with eliminated problems, meant we could use 35lb liners and therefore achieve a cost saving of 17%. The increase in the DST result from 15 to 17 bpi still provides better box performance than before.

Your customer gets the benefit of an improved product with less rejects and you get cost savings that you may or may not choose to pass on.

By reducing liner weights from 46lb down to 35lb you can save 17% of the board paper costs and 16% in weight. So you help your profitability and sustainability at the same time.

Please contact me on Ian@Korutest.com if you would like to discuss any of this further.

