Storing & handling corrugated

How to store and handle corrugated boxes
Box users make major investments in the development, production and promotion of their products. The boxes they need for shipment represent, on average, less than 1% of the value of their contents. Consequently, if a few boxes are unusable, the loss involved is relatively insignificant, right? Wrong! Remember, without the lowly corrugated box, the product cannot be shipped! Simply stated, unusable boxes can result in unsold products. Therefore, it is worth protecting your inventory of empty corrugated boxes to ensure that:

- The boxes are usable, and don't end up ready for recycling before they can fulfill their purpose;
- The boxes will run smoothly on automatic setup, filling and closing equipment, avoiding costly jam-ups, repacking and lost time;
- The boxes will stack squarely, avoiding costly accidents during palletizing, storage and shipment; and
- The boxes provide the intended protection against damage, leakage or other loss.

Guidelines for proper handling and storage of empty boxes, developed by the Fiber Box Association and the Packaging Machinery Manufacturers Institute, have been summarized and presented below. Following these simple guidelines will maximize the performance and prolong the useful life of your corrugated boxes:

Position
1. Store boxes flat from the time they are received until they are ready for use.

Damage to the edges of boxes can occur if they are stored on edge, which can affect run ability on automatic equipment, closure and product protection.

Stability in Storage
2. Leave the strapping, bundling or other unitizing device in place until boxes are ready for use.

3. Alternate bundle direction, or alternate loose boxes at intervals for greater stability.

4. Avoid stacking boxes too high, whether loose or banded, because of slight instability of stack.

Although close, most box styles are not totally flat. The extra thickness of

the tab used at the joint adds a bulge, usually near the center, giving a tilt to a loose stack of boxes. Alternating directions of bundles when stacking compensates for the tilt and increases stability.

Crushing & Puncture
5. When building pallet loads of flat boxes, use deck boards to distribute weight evenly.

6. Stack boxes only on smooth, clean surfaces.

7. Use good materials handling procedures; don't drop or throw bundles or pallet loads into place.

8. Don't stand, sit or climb on stacked boxes, or place other heavy objects on them.

This may crush or distort the flutes in corrugated boxes, which will reduce their protective abilities. Any uneven pressure on the flutes can cause crushing or puncture.

Storage Environment
9. Store boxes off the floor, on pallets or other flat dunnage.

10. Store boxes indoors and protects them from overhead moisture.

This may require covering boxes or storing them away from overhead pipes or areas of ceiling condensations.

11. Avoid temperature and humidity extremes and fluctuations in storage areas.

This may require storage away from doorways that are opened frequently. When it is impossible to avoid extremes or fluctuations, bring the boxes to the packing line or another area for a period of time to condition them to a more normal atmosphere before using them. Excessive moisture or water can soften or dissolve the corrugating adhesive, causing delaminating; a box that literally falls apart won't offer much protection. Heat can reduce the moisture content of corrugated boxes, making them brittle. Extreme cold also affects moisture content, making the boxes more fragile.

Old Age
12. Follow "first in, first out" practices in using inventory.

Corrugated boxes stored under ideal conditions will remain usable for a long period of time. Less-than-ideal or fluctuating conditions reduce their effectiveness and shorten their useful life. Common sense dictates that old

inventory be used before starting on the new.

The preceding information and illustrations on how to store and handle corrugated boxes are from the Fiber Box Handbook (Fiber Box Association, Rolling Meadows, IL, 1992)