

EPR & Exploring Fiber-Based Packaging Options for the Furniture Industry



Agenda

- What EPR means for your business
- Why packaging material choice matters
- Why fiber-based solutions are preferred
- How Multi-Wall Packaging supports compliance
- Furniture Pack Road Map From the Past F-Pack Standard
- Challenges With Exploring New/ Old Concepts

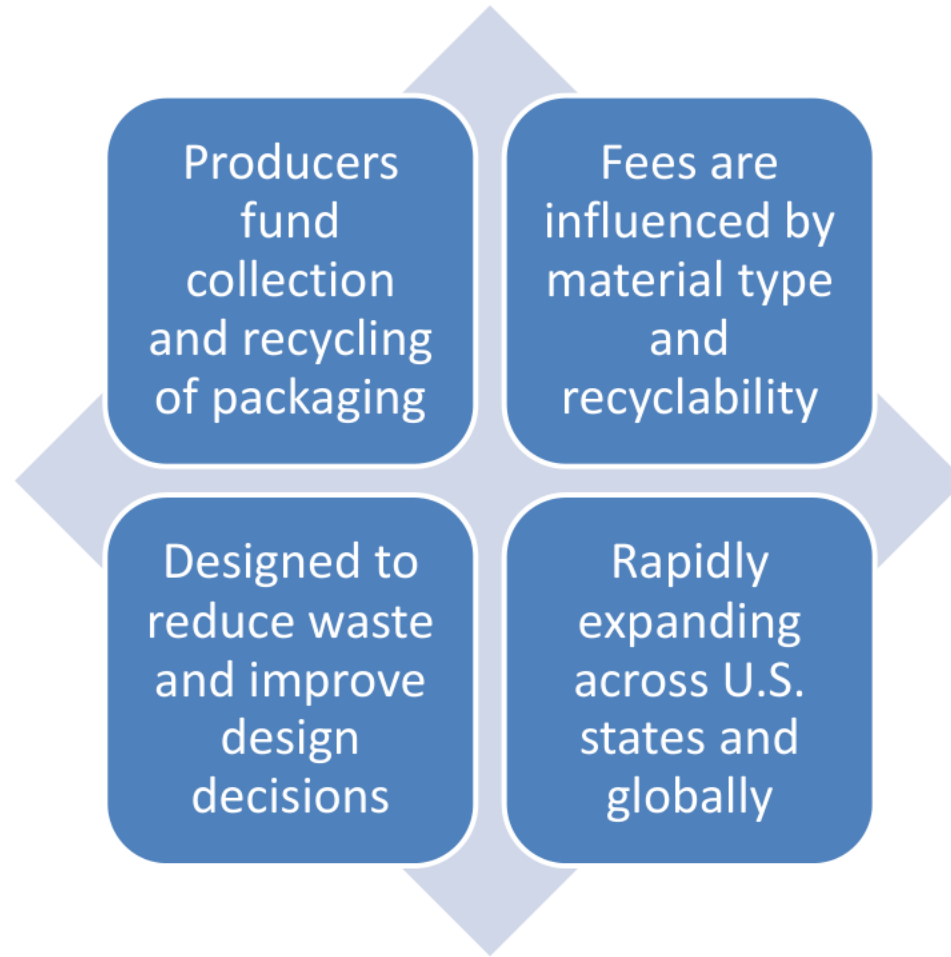


Background on Signode – Multi-Wall Packaging

- Signode Industrial Group – Strapping
- Consumables, Equipment, Automation, Service
- Engineered Solutions
- ISTA – DNA with Certified Labs
- Design & Customer Experience Centers



What Is Extended Producer Responsibility (EPR)?



Why Fiber-Based Packaging Is Favored

Accepted in most paper recycling systems



High recovery and recycling rates



Renewable raw material base



Often lower EPR fees than plastic alternatives

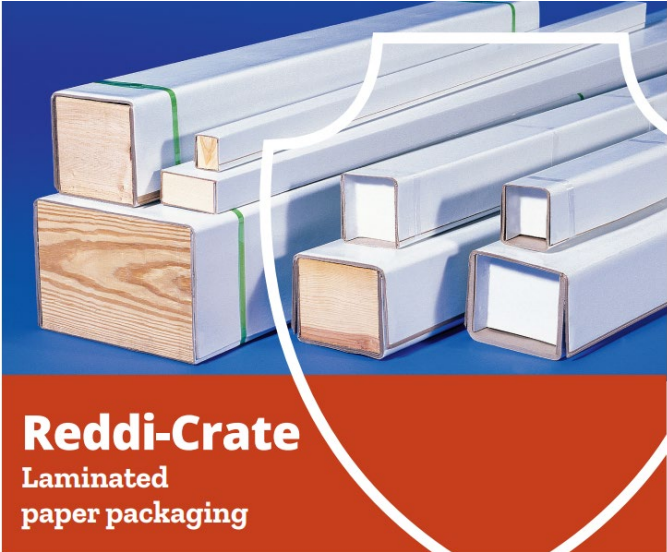
Multi-Wall Packaging's Fiber-Based Solutions

- Signode's Portfolio – Holistic Approach to Package Design
- High-performance paper Multi-wall pads, honeycomb, SUS-RAP®
- Reddi-Crate® is an option to reduce excessive wood use
- Engineered for strength, protection, and recyclability
- Options to reduce or replace plastic
- Trusted across many different industry segments



Multi-Wall Packaging's Fiber-Based Solutions





Reddi-Crate

Laminated
paper packaging

Reliable
Performance

Superior strength offers protection throughout shipping and handling

Cost-effective
Solution

Excellent replacement for traditional flat products and wooden crates

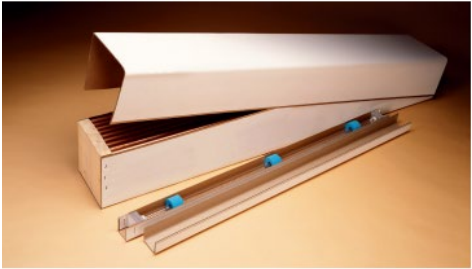
Application
Versatility

Available with protective coatings for moisture resistance and corrosion protection

Highly
Sustainable

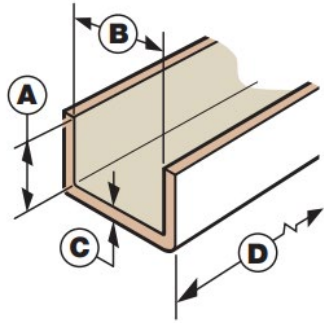
Manufactured with 100% recycled materials and is 100% recyclable

Reddi-Crate laminated paperboard packaging helps prevent product damage that can occur during shipping and handling. With a smooth surface and interior that is non-abrasive to products, Reddi-Crate can be used inside or outside a carton for product unitization and edge protection or helps to provide additional beam strength.



Features and benefits

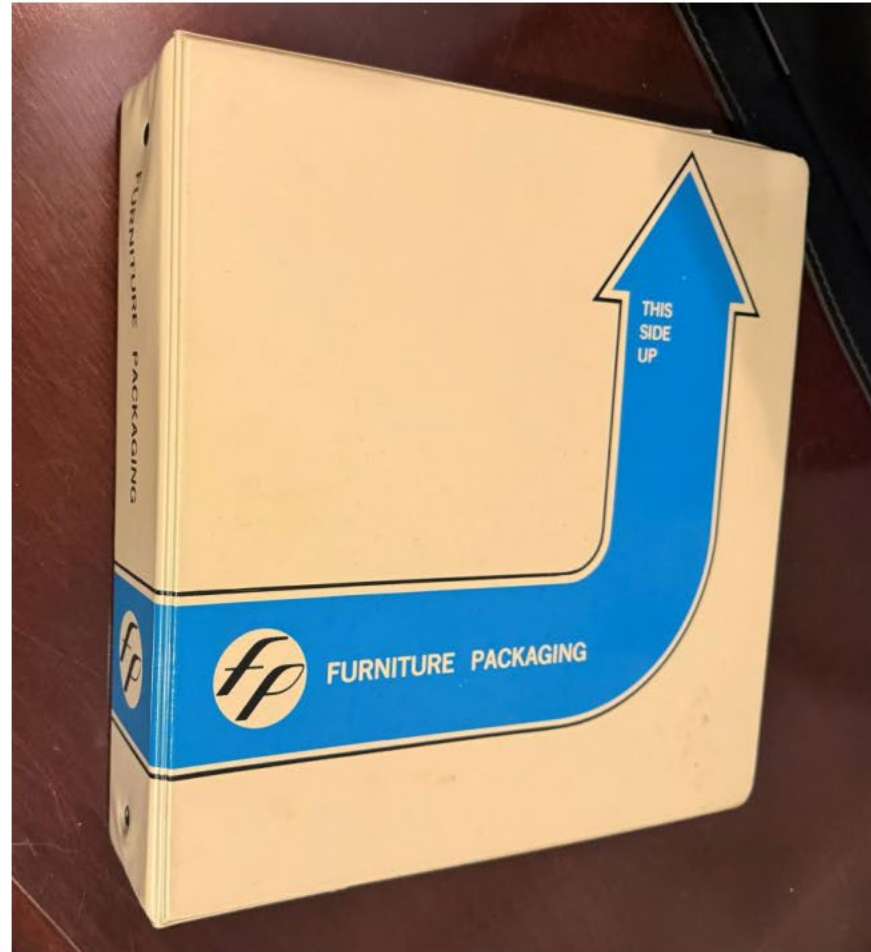
- Simplifies use**
Reddi-Crate's preformed profiles and two end closures form a shipping container that provides superior strength and protection throughout the transportation cycle.
- Application flexibility**
Unlike traditional flat products, Reddi-Crate ensures maximum product protection for a wide range of products. It can be treated with protective coatings to provide moisture resistance and corrosion protection for those products exposed to humidity, condensation and other environmental conditions.
- Enables product marketing**
Reddi-Crate can be printed, allowing for branding, product identification and point-of-sale merchandising.



Reddi-Crate Technical Specifications

A Leg Height	Available from 25-203 mm (1-8 in)
B Base Width	Available from 25-305 mm (1-12 in)
C Caliper	Available from 1.5-13 mm (.060-.500 in)
D Length	Available up to 16 m (53 ft)

Furniture "Bible": The Old "F-Pack" Standard

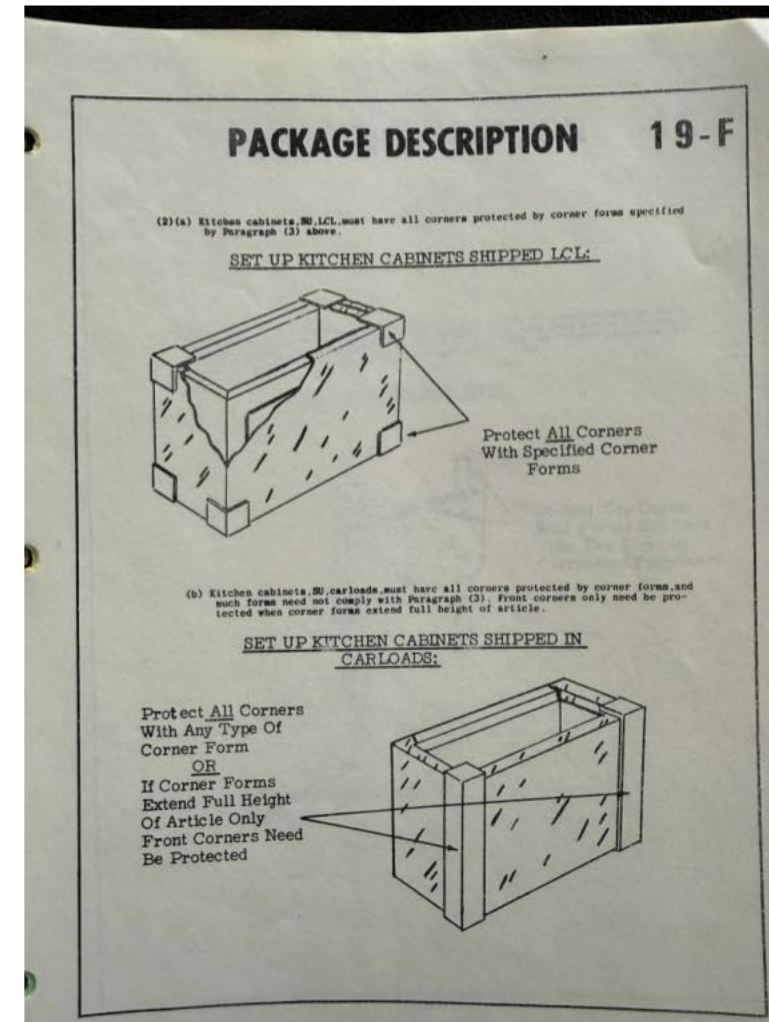
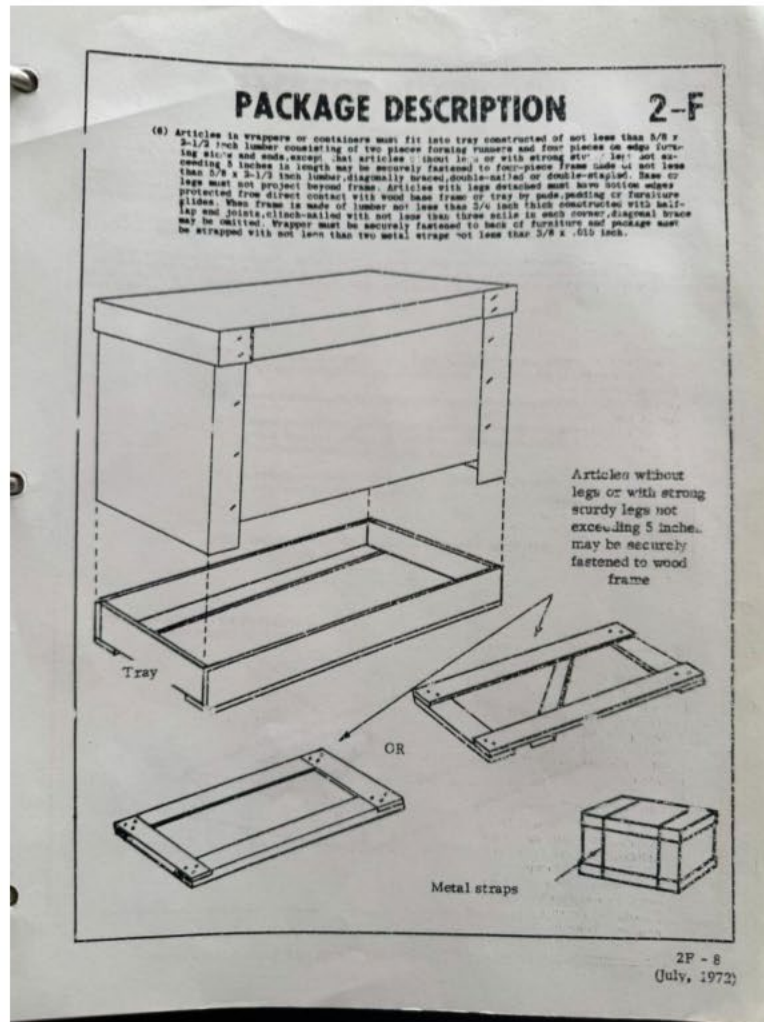


Furniture "Bible": The Old "F-Pack" Standard

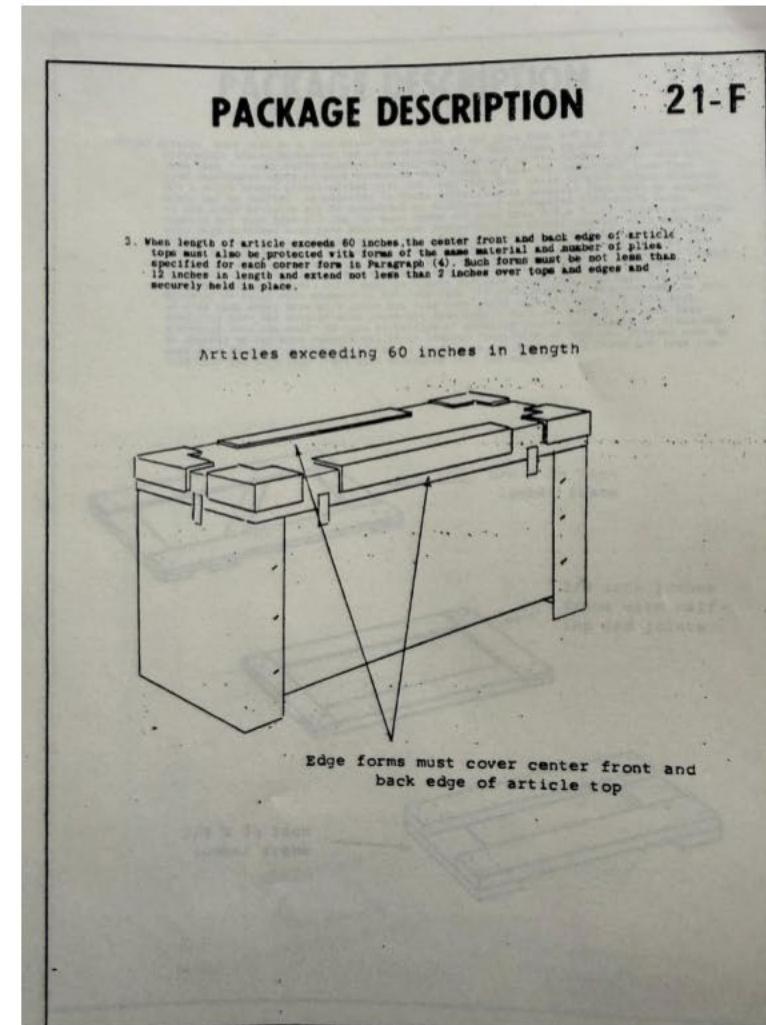
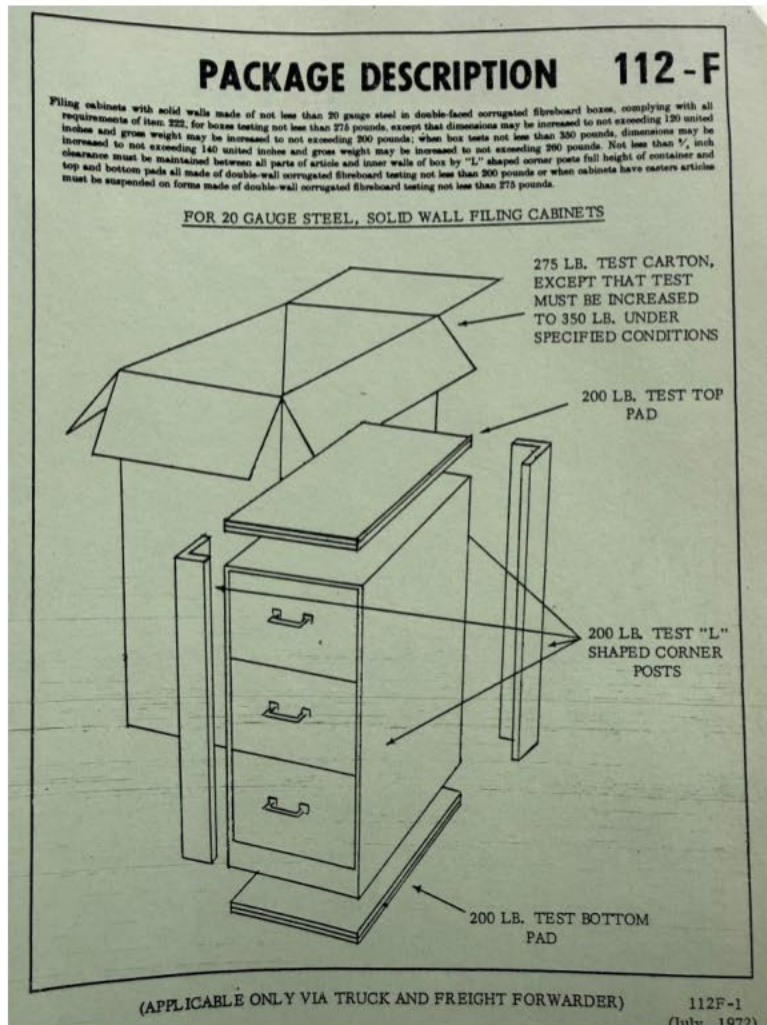
- Manual covering railroad, motor carrier and freight forwarder packaging specs for furniture and mirrors
- Full diagrams of authorized "F" and "S" packaging specifications
- Majority of fiber-based approaches in these specifications
- Roots of ISTA testing protocol – "Transit Tested" Logo
- Origin in late forties, activity up till end of the 90's
- Possible road map with history of acceptance
- Some companies may still be using variances of these specifications
- Today's furniture designs may offer unique challenges



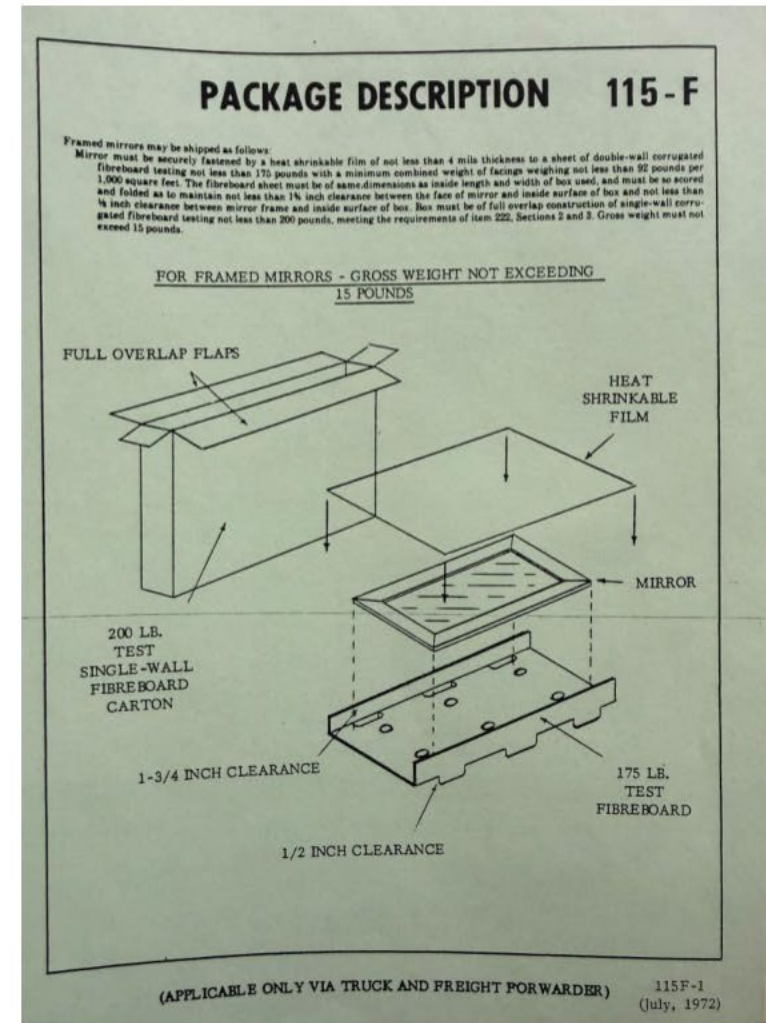
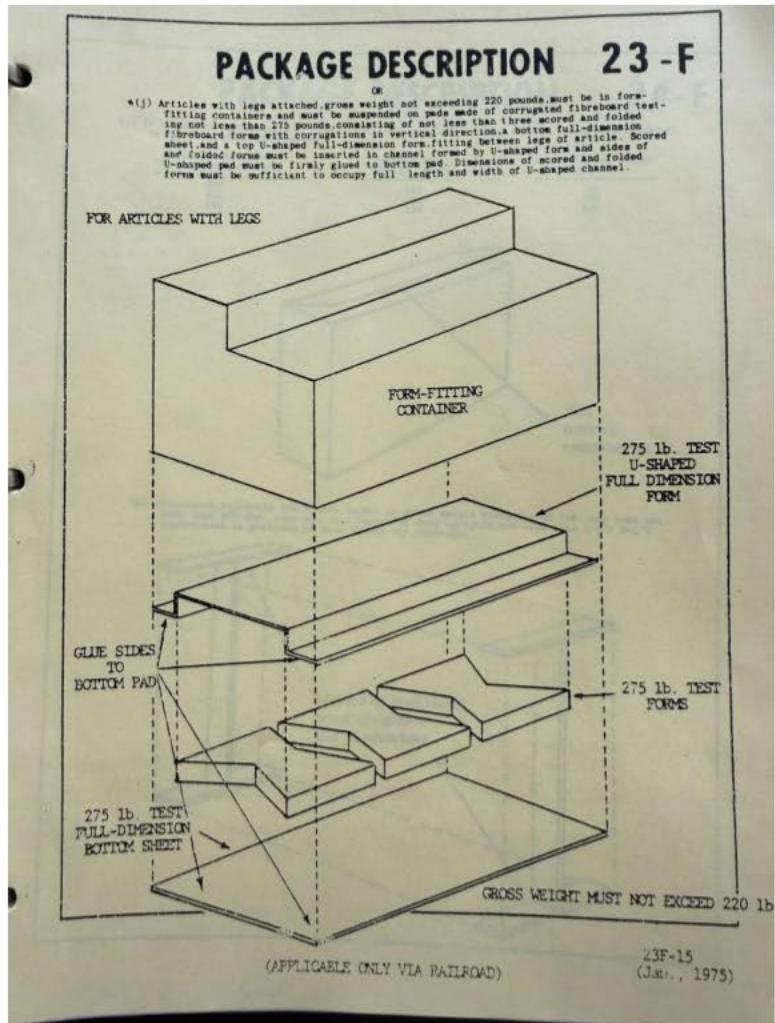
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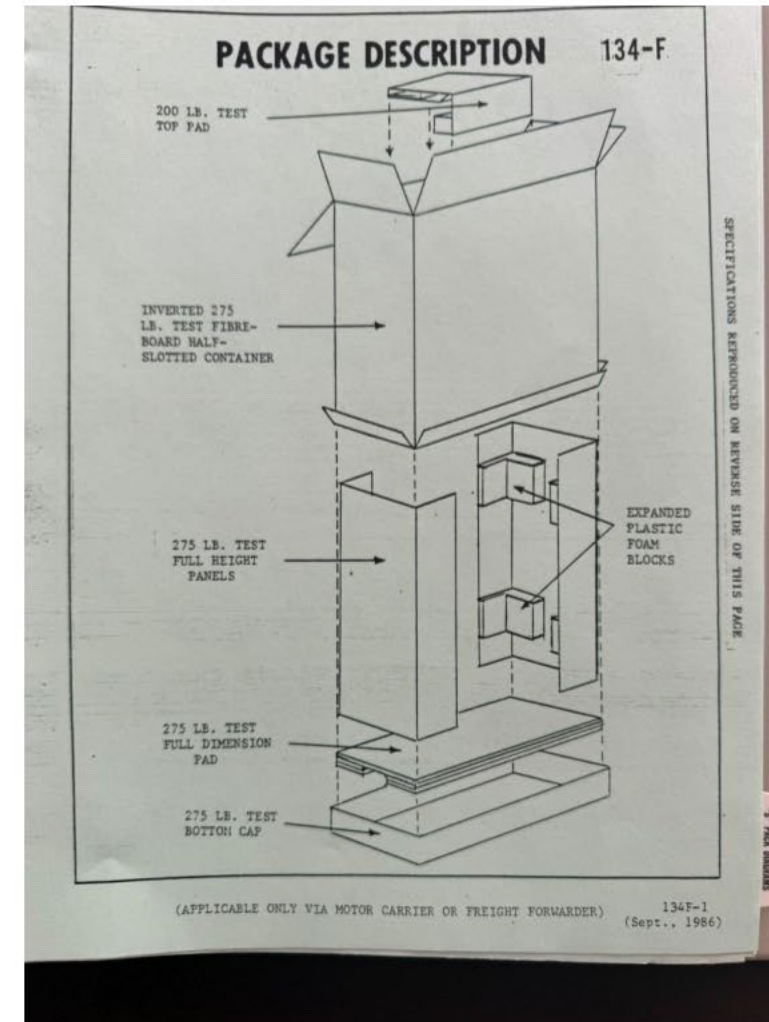
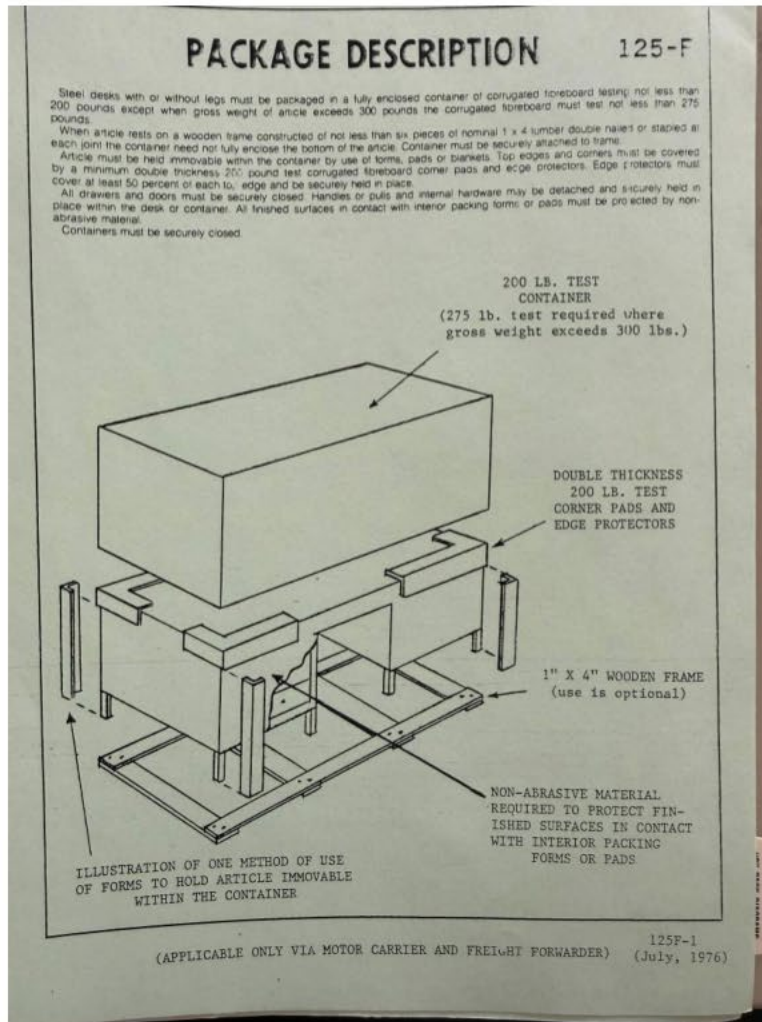
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PACKAGE DESCRIPTION 52-F

1. In full overlap or full telescope corrugated fibreboard boxes the fibreboard meeting the following bursting strengths for gross weights and united inches indicated:

Bursting Strength (Psi)	Maximum Gross Weight (lbs.)	Maximum Size (United Inches)
200	60	100
275	75	115

2. (a) Mirrors must be packed in one piece full dimension inner trays made of non-abrasive double wall corrugated fibreboard having a minimum combined weight of facings of 108 lbs per 1,000 sq ft, except that when gross weight exceeds 60 lbs. or when dimensions exceed 100 united inches, trays must be made of non-abrasive double wall corrugated fibreboard having a minimum combined weight of facings of 136 lbs per 1,000 sq ft.
 (b) Mirror must be securely held in place within tray by metal or plastic straps applied in both the longitudinal and lateral directions, the straps fully encircling mirror and tray.
 (c) Trays must have die cut tabs which are folded over mirror under points of contact with straps.
 (d) Except for die cut slots, trays must be constructed with a minimum of two thicknesses of double wall fibreboard on two opposite sides of article and must maintain a clearance of not less than 3/4 inch between finished surfaces of mirror and inside surfaces of box.
 3. Full overlap boxes must be closed in compliance with Rule 41, Section 7. Full telescope boxes must be closed in compliance with Rule 41, Section 8.

MOTOR CARRIER AND FREIGHT FORWARDER SPECIFICATIONS 52F-1 (Sept., 1982)
 PERMIT STRETCH-WRAP IN LIEU OF STRAPPING

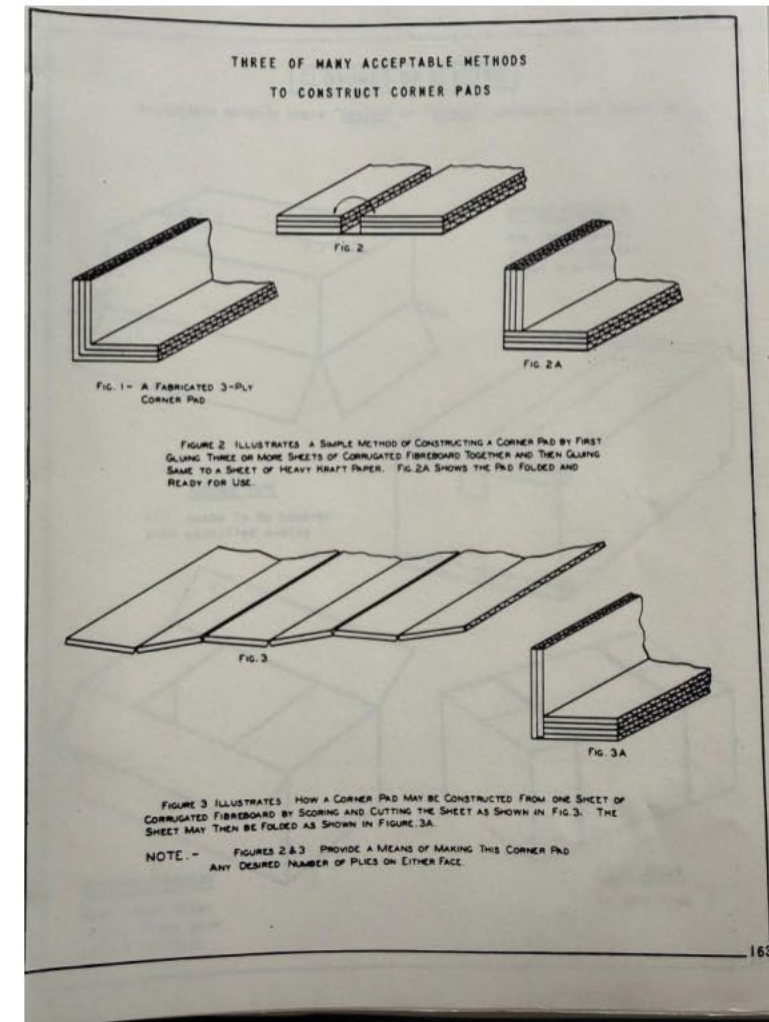
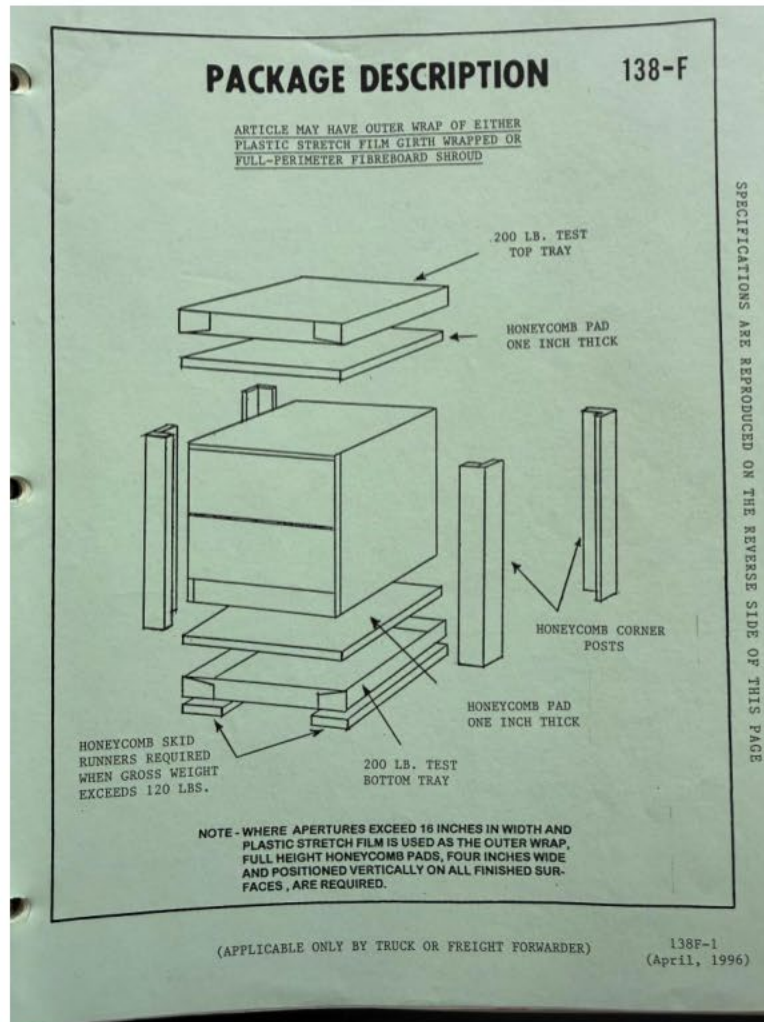
PACKAGE DESCRIPTION 22-F

(d)(a) Clearance of not less than 3/4 inch must be maintained for all finished surfaces by adequate forms of corrugated fibreboard or molded corrugated fibreboard weighing not less than 50 pounds per 1,000 square feet, having 22 to 24 flutes per foot, backed with Kraft paper of not less than 50 pounds basis weight.

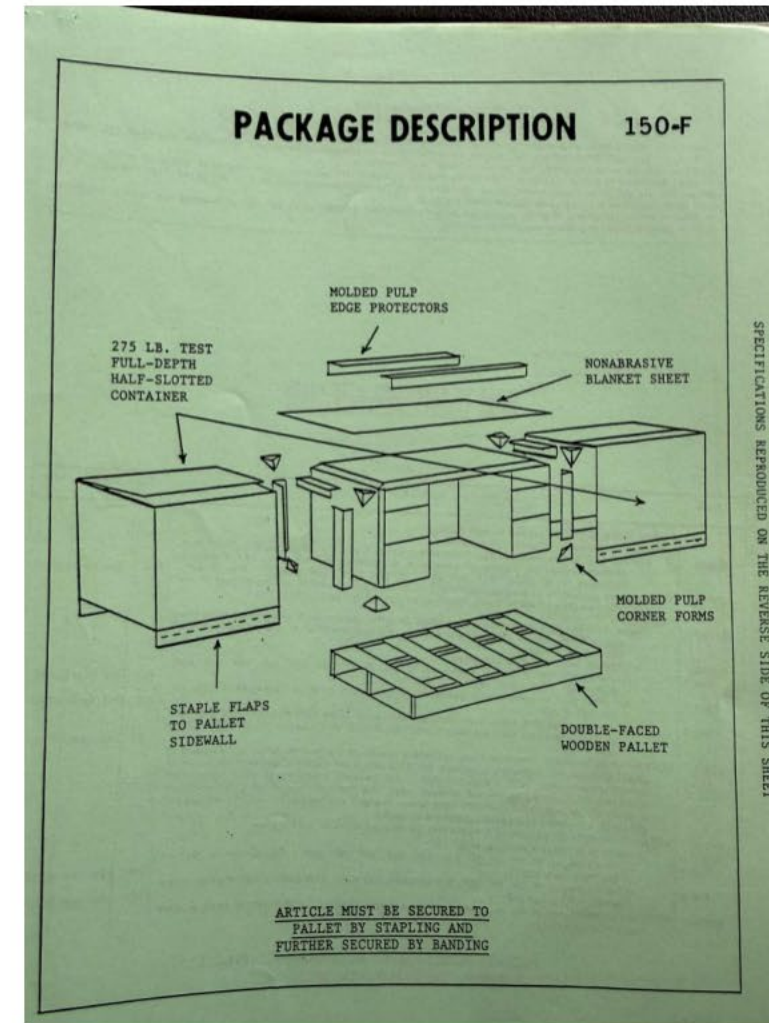
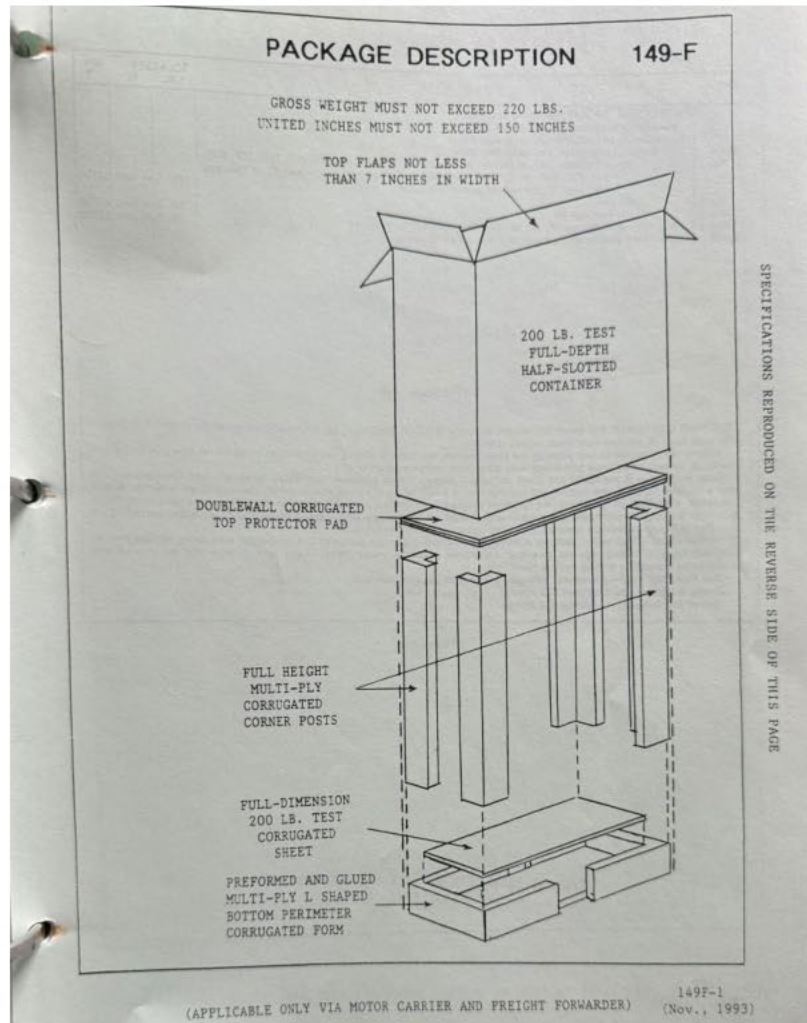
3/4 INCH CLEARANCE MUST BE MAINTAINED BY ADEQUATE FORMS MADE OF CORRUGATED FIBREBOARD OR MOLDED CORRUGATED FIBREBOARD

ABOVE IS BUT ONE EXAMPLE OF HOW FORMS MAY BE ARRANGED TO MAINTAIN 3/4 INCH CLEARANCE

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Challenges of Pursuit And Conversion

- Scuffing, Abrasion Concerns – explore alternatives to microfoam
- Any additive, coatings, complicate things, but may still be options Michleman / Nomar. Tissues.
- Paper Types, leverage, performance, availability in the market
- Scope of Testing – change must be validated. Sku's, variability, finish offerings all areas of concern
- Amount of work to be done. There are no silver bullets, maybe low hanging fruit
- Pull from producers – you need to know where you are going for us to help more intently



Key Takeaways

- EPR is reshaping packaging decisions
- Fiber-based packaging is strongly preferred
- Multi-Wall Packaging offers compliant solutions
- Scope of work can be overwhelming but must be pursued with intention
- Smart choices today reduce future risk

