

Purpose:

This Voluntary Standard applies to corrugated fiberboard (linerboard, corrugating medium, combined board) and OCC equivalents (OCC-e), paper-based packaging materials that are not corrugated but are collected and recycled with OCC (Old Corrugated Containers), such as kraft paper bags.

The goal is to promote coatings and treatments that make corrugated and OCC-e materials repulpable and recyclable, replacing non-recyclable options.

The protocol offers a repeatable testing method to simulate recycling processes and assess coated or treated materials for repulpability and recyclability.

Scope:

The standard mimics real-world mill processes that are currently used or easily adopted.

It has two testing parts:

Part 1 evaluates repulpability (fiber yield, percent rejects).

Part 2 assesses recyclability (impact on mill operations and final product quality).

It clarifies that:

The standard is voluntary, not regulatory.

It does not cover product safety, functionality, or marketability.

Materials contaminated with hazardous substances cannot be certified for use.

A new 2025 version took effect on March 31, 2025; prior approvals are grandfathered.

What is OCC-e?

OCC-e (OCC Equivalents) refers to:

Paper-based packaging that is not corrugated but is collected in the OCC recycling stream and is successfully recycled with OCC.

Examples include: Kraft paper bags, multi-wall Kraft paper sacks, all-paper Kraft mailers, Kraft paper boxes, Kraft paper foodservice trays, Kraft paper shipping tubes, and Kraft paper take-out food packaging.

OCC-e materials are included in this protocol to ensure they can be processed alongside traditional corrugated fiberboard and meet the same standards for repulpability and recyclability.

Key Differences Between 2013 and 2025 Standards

1. Fiber Yield Requirement

Year	Requirement	Based On
2013	$\geq 80\%$ (total weight) OR $\geq 85\%$ (bone-dry fiber charge)	Accepts must meet one of two thresholds
2025	$\geq 60\%$	Based only on the oven-dry mass charge to the blender

What changed:

- *Threshold lowered from 80–85% → 60%.*
- Single measurement basis: The 2025 standard uses oven-dry mass consistently, simplifying the calculation and improving accuracy.

2. Calculation Method & Equation Clarity

Year	Equation
2013	$\% \text{ Rejects} = \text{Net Rejects} \div (\text{Net Accepts} + \text{Net Rejects}) \times 100$
2025	$\% \text{ Fiber Yield} = \text{Oven Dry Accepts} \div \text{Oven Dry Charge to the blender} \times 100$
2025	$\% \text{ Rejects} = \text{Oven Dry Rejects} \div (\text{Oven Dry Accepts} + \text{Oven Dry Rejects}) \times 100$

What changed:

- 2025 provides both fiber yield and reject formulas.
 - Clear distinction between input (charge) and output (accepts/rejects) in oven-dry terms.
- 2013's formula focuses only on the reject percentage, not the yield.

3. Precision and Temperature Tolerances

Aspect	2013	2025
Water Temp	125°F \pm 10°F	125°F \pm 5°F
Drying Temp	221°F (105°C)	221°F \pm 5°F (105°C \pm 3°C)

What changed:

- Tighter control on water and drying temperature tolerances.

4. Screening Methodology and Equipment

<u>2013</u>	<u>2025</u>
Used an unspecified .010" screen with a 1" water head	Two validated screening options (Valley-type or Somerville) with defined water flow, spray nozzles, and water head pressures

What changed:

- Detailed, standardized screening procedures were introduced in 2025.
- Use industry-standard Valley or Somerville screening equipment, including water flow rate, spray design, and mesh capture.

Summary of Changes from 2013 to 2025

<u>Element</u>	<u>2013</u>	<u>2025</u>	<u>Impact</u>
Yield Threshold	80–85%	60%	Adjusts for modern packaging materials
Measurement Basis	Wet or bone-dry	Oven-dry only	More precise and consistent
Equations Provided	Only % rejects	% yield and % rejects	Clearer mass balance
Temp Tolerance	±10°F	±5°F	Increased accuracy
Screening Method	Basic	Detailed w/ equipment specs	Standardization, better reproducibility