


1  **Manufacturing, Part 3**

Chapter 4 Continued

2  **Wet Processing**

- Adds a finish to the assembled garments
- Most rapidly advancing phase of apparel production process
- Includes:
 - Garment Softening
 - Color Removal
 - Color Addition
 - Wrinkle Addition

3  **Wet Processing, Cont.**

- Softens, Preshrinks, creates a unique appearance
- Typically after the garment has been assembled
- Requires extra skill to prevent uneven coloring, streaks, blotches, unwanted holes or other errors
- Metal trims can rust, thread breakage, material separation or disintegration can occur
- Have to make sure all components can withstand process

4  **Facilities**5  **Facilities**6  **Garment Softening**


- Laundered using large washers & dryers
- To soften & give “broken in” look/feel
- Removes starches, sizing, excess dyestuff
- Preshrinks

7  **Garment Softening**8  **Color Removal**

1. Bleaching
 2. Stonewashing/sandwashing
 3. Frosting/Acidwashing
- Rinsing is the only process of removal that doesn't damage the cloth
 - All other reduce the tensile & tear strength
 - Fashion garments w/short life cycle – less concern
 - About fashion look

9  **Bleaching**


- Uses some sort of color removing agent to perform subtle to significant removal of color
- Mainly on denim & casual shirts

10  **Stonewashing**

- Traditionally done with pumice or other actual stones
- Now done primarily w/ synthetic stones that disintegrate and enzymes – less damaging to fabric, equipment, & environment
- Softens, preshrinks, removes surface color “breaks in” garment
- Sandwashing uses sand instead of stones and gives a softer finish

11  **Stonewashing**12  **Frosting/Acidwashing**

- Most complicated of the basic wet-processing finishes
- Uses bleaching agent to remove color through a highlighting effect
- Dramatic light-dark effects

13  **Acidwashing**14  **Frosting**15  **Color Addition**

1. Garment Dyeing
2. Overdyeing

- Works best on knits made of cotton or other absorbent fibers
- Usually solid colors

16  **Garment Dyeing**

- Application of various colors to assembled garments
- Made of special white cloth called PFD (Prepared for Dye)
- Used most often on basics
- Don't have to make color decisions until late in the game

17  **Overdyeing**

- Dyeing one color over another to produce a unique color or shading effect
- Often done over printed fabrics

18  **Garment Dyeing**

19  **Garment Dyeing**

20  **Garment Dyeing**

21  **Overdyeing**

22  **Overdyeing**

23  **Dye Facilities**

24  **Wrinkle Prevention**

- Helps garments maintain a pressed appearance after many washings
- Durable press, permanent press, wrinkle-free
- Uses resins
- Can tender (weaken) goods
- Performed either in cloth form or in garment form
- Must use appropriate thread, stitch type, etc.


25  **Pressing**

- Most require at least some pressing, other extensive
- Makes a good impression, commands higher price
- Called finish pressing or off pressing
- Industrial steam irons or heavy pressing machines


26  **Industrial Flat Iron**

27  **Flat Bed or Buck Press**


- Faster, more efficient
- Vacuums steam through garment

28  **Form or Paris Press**

- Shaped like garment
- Steam blown into garment w/ slight pressure from force of steam
- Good w/ napped fabrics because it prevents crushing

29  **Upright or Colmac Press**

- Designed for specific types of apparel
- Uses clamps, hangers, or both to hold garment in position
- Steam is blown through garment, sucked through by vacuums and pressure is applied to outside










30  **Other Examples**

31  **Curing Oven/Heat Tunnel**

- For heat curing resin finishes
- "Bakes" the finish in a controlled environment
- AFTER pressing

32  **Finishing**

- Final steps in production of garment
- Includes:
 - Adding finishing details, trimming, inspecting, repairing, pressing, folding, packing
- Wet processed goods cannot be finished until afterwards

- Also spot cleaning
 - Then make store-ready in many cases
- 33  **Final Audit**
- Auditors check product quality & fold-and-pac quantity accuracy
 - Uses statistical sampling
 - If doesn't meet AQL (acceptable quality level), then 100% inspection
 - Then repairs
 - Not shipped until all complete
- 34  **Distribution**
- Distributions workers must process orders, send to production, manage inventory, pack shipments, & schedule carriers to deliver products by COMPLETION DATES (in store)
- 35  **Distribution, cont.**
- Air freight – most expensive, least used
 - Vessel (boat) – most common for global shipments
 - Slow vessel – cheaper
 - Fast vessel – most expensive, but more direct route
 - Train – common within the US (Canada/Mexico)
 - Truck – most common domestic method
- 36  **Distribution, cont.**
- Shipping consolidator – makes arrangements for global shipments
 - Broker – clears paperwork and products through customs
 - Domestically, manufacturers usually handle own shipping
- 37  **Distribution, cont.**
- Distribution Center – where products are sorted and stored
 - Can have one for the manufacturer and/or the retailer
 - Can cause delays in shipment if not managed properly
 - Often operate on FIFO (1st in, 1st out)
 - Can also Drop Ship to reduce cycle time
 - May have distributions center audits for IAQL (incoming acceptable quality level)
- 38  **Promotion and Sales**
- Promotions – intended to inform & persuade customers
 - Manufacturers promote largely to retailers, but can also create brand awareness
- 39  **Promotion and Sales, cont.**
- Include:
 1. Advertising (tv, radio, mags, mail...)
 2. Sales promotion (displays, shows, offers)
 3. Publicity (news, releases, fashion events)
 4. Personal Selling (including markets & trade shows)
- 40  **Promotion and Sales, cont.**
- POS terminals capture sales data to relay back
 - May trigger re-orders, may not be possible
 - Used for next line
- 41  **Research Groups**
- Government
 - ITC¹² - Cary, NC