

Chapter 12 Finishes

- Finishes
 - Properties a textile product does not possess naturally
 - Enhance the aesthetics and/or performance of the final product



Classifying Finishes

- Three main classifications
 - Temporary/renewable/durable/permanent
 - Chemical/mechanical
 - Preparatory/aesthetic/functional

Finishes – degrees of permanence

- **Temporary**
 - Removed by washing or dry cleaning
 - Ex. calendering
- **Renewable**
 - Temporary finishes that can be reapplied
 - Ex. Starch, water resistant, soil-resistant
- **Durable**
 - Effective during the life of the product
- **Permanent**
 - Uniform and do not diminish during life of product

Chemical/Mechanical Finishes

- Chemical finishes
 - Sometimes called wet finishes
 - Applied to fabric in water or other liquid bath
 - Flame Resistant is an example
 - **Resins** – chemical used in wet finishes
 - Most used chemicals in textile industry
 - Durable treatment
 - Used in wrinkle and crease-resistant finishes
 - Steps are: padding, drying, curing



Chemical/Mechanical Finishes

- Mechanical finishes
 - Also called dry finishes
 - Fabric does not need to be wet
 - Involve physical treatment that changes the appearance and/or hand of the textile product

Preparatory/Aesthetic/Functional Finishes

- **Preparatory finishes**

- Prepare fabric for further processing
- Ex. Cotton routinely bleached to make white, this is it to prep it for dyeing and printing

- **Aesthetic finishes**

- Improve the appearance and/or hand
- Ex. Moire effect

- **Functional finishes**

- Improve overall performance
- Ex. Water-resistant finish poplin for raincoat



Preparatory Finishes

- Grouped according to purpose:
 - Clean fabrics
 - Enhance aesthetics
 - Improve performance

Finishes That Clean Fabric pg.192-193

- Boiling off
- Bleaching
- Carbonizing
- Degumming
- Desizing
- Scouring
- Solvent scouring
- Tentering



Holes in selvage
from tentering pins





Finishes That Improve Appearance or Hand

pg. 193

- Enzyme treatments
- Singeing
- Optical brighteners
- Fulling
- Delustering



Finishes That Improve Performance

- **Mercerization - Cotton, cotton blends, linen**
 - Sodium hydroxide
 - Increases luster
 - Improves strength
 - Increases absorbency
- **Weighting of Silk**
 - Increases body of the silk

Finishes That Improve Performance

- Weighting of silk
 - Metallic salts
 - Increases body of silk
 - Weakens silk
 - Shattered silk

Aesthetic Finishes

- **Beetling**

- Fabric beaten with hammers, creates a smooth, lustrous surface on linens.

- **Brushing**

- Brushes the nap or pile of the fabric in one direction

- **Burn-Out designs**

- Created when fabric is printed with chemical solution that destroys some fibers

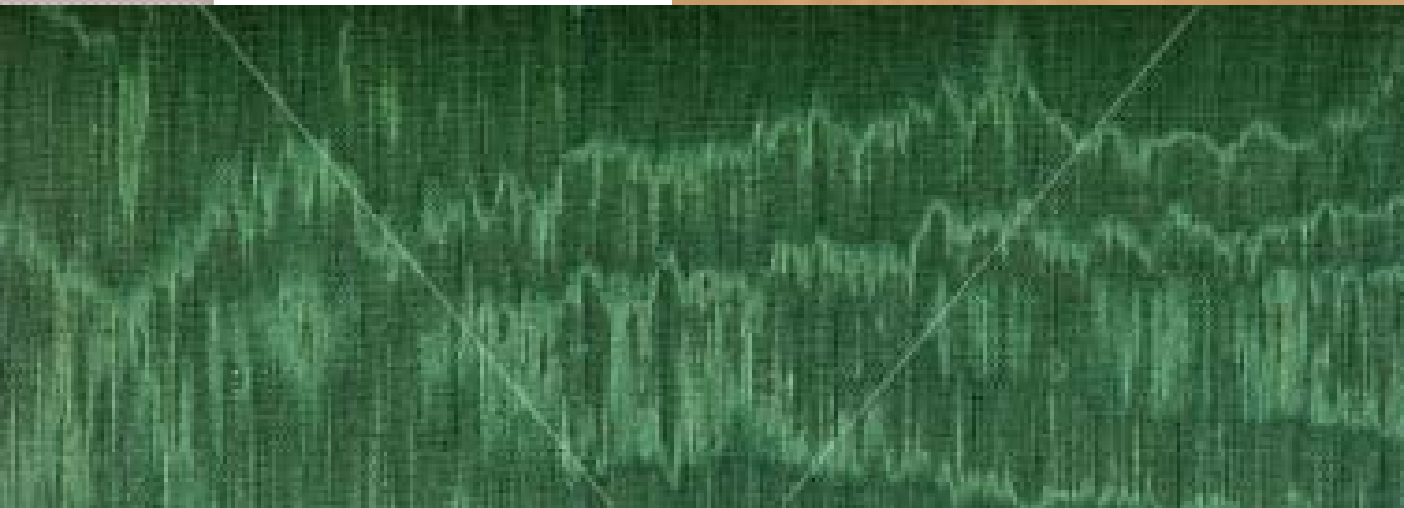
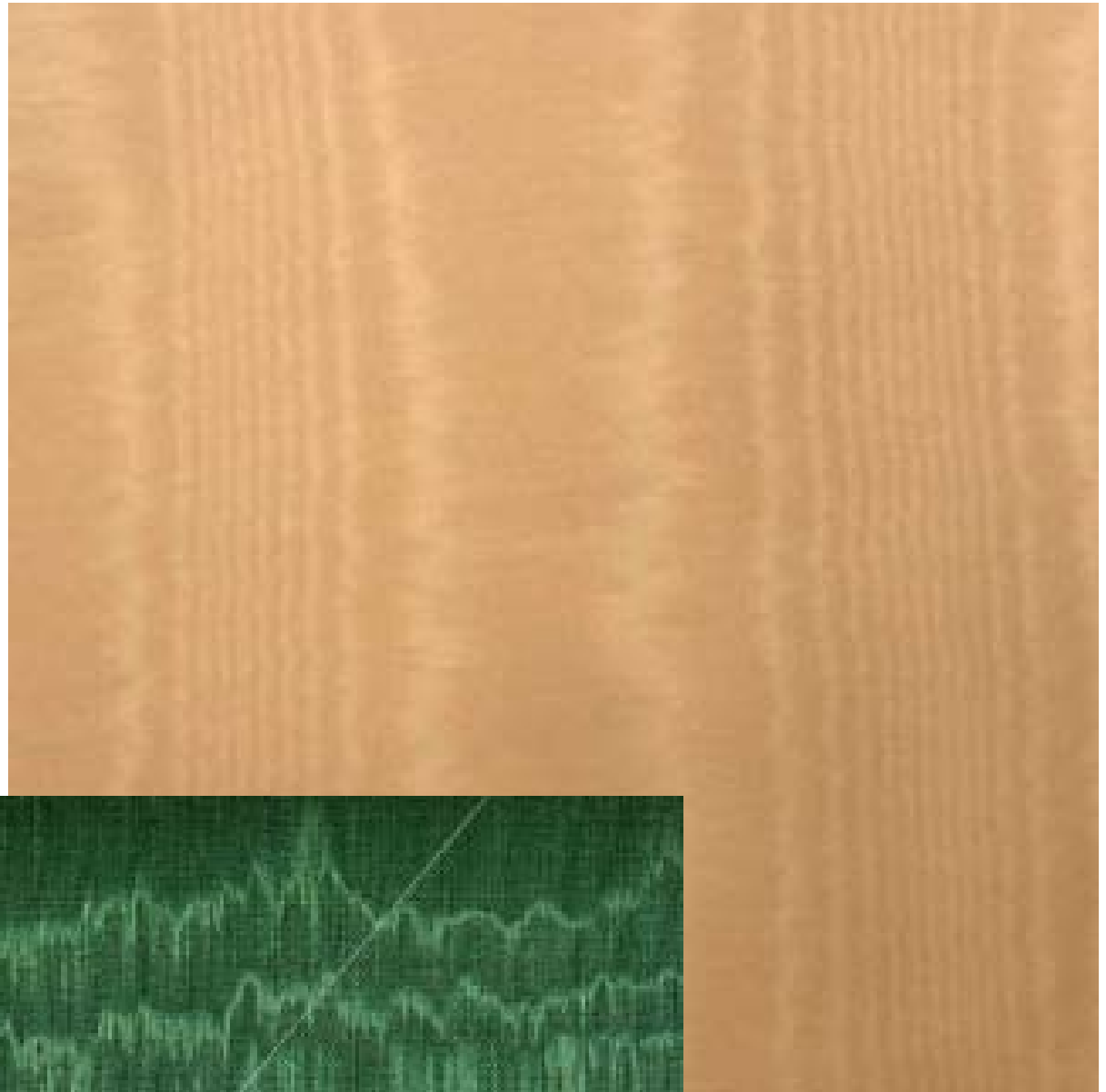
- **Calendaring**

- Mechanical finishing process used to smooth the fabric and/or impart surface designs.
- Fabric passes through 2 or more heated rollers

Variations of Calendaring pg 195

- **Simple calendaring**
 - Damp fabric is fed through heated rollers; temporary.
- **Glazing**
 - Highly polished surface created. Fast friction roller.
- **Cireing**
 - Highly polished – looks as if wet. Faster friction roller
- **Embossing**
 - Calendar rollers with engraved designs. plisse
- **Moire**
 - Roller engraved with watermark or wood grain pattern.
- **Schreinerling**
 - Soft luster and soft hand; embossed with diagonal lines

moire





Chemical or Abrasive Washing

- Chemical washing
 - Acid-washed denims
 - Alkalis, oxidizing agents and enzymes
- Abrasive washing
 - Stone-washed denims
 - Sanded silks



Dirty Dye



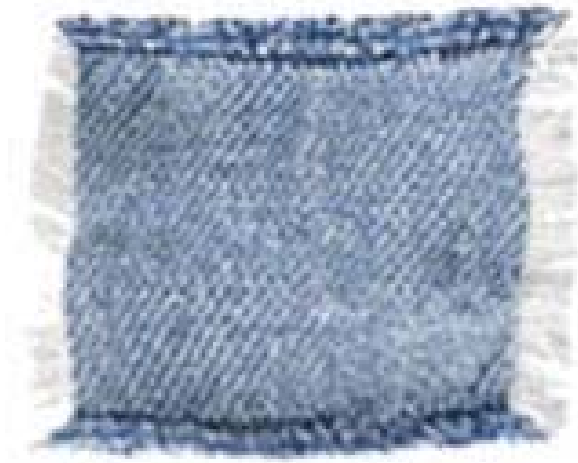
Enzyme



Sandblasted



Sunbleached



Stonewashed



Fabric Dyed

Aesthetic Finishes Continued

- **Flocking**

- Adhesives used to make short fibers adhere to the surface of the fabric

- **Napped fabric**

- Have a pile or nap that has been brushed up from the surface of the fabric
- Have a longer pile than sueded fabrics

- **Sueded fabrics**

- Very low pile
- The surface of the fabric is exposed to an abradant material that resembles sandpaper.
- Knits and wovens can be sueded

Aesthetic Finishes Continued

- **Plisse**
 - Refers to both the finishing process and the fabric
 - Treated with chemicals for it to shrink where chemicals are applied.
 - Durable but not permanent; ironing flattens
- **Shearing**
 - Compared to mowing the nap or pile of the fabric
- **Softening**
 - Fabric softeners are applied to reduce harshness
- **Stiffening**
 - Used to improve body and hand.
 - Starches, gelatins, resins, and acids



Functional Finishes

- Three main divisions
 - Shrinkage Control
 - Resistant
 - Others



Review of Shrinkage Types

Box 12-3

- **Relaxation Shrinkage**
 - Occurs during first laundering
- **Progressive Shrinkage**
 - Occurs every time that you launder
- **Residual Shrinkage**
 - Small amount of shrinkage that may occur after fabrics have been preshrunk properly



Shrinkage Control Finishes

- Compressive shrinkage
- Chemical shrinkage
- Chlorination
- Surface coating
- Resin treatment for cottons and rayons
- Resin treatment for wool
- Heat setting
- Sponging

Additional Finishes

- **Abrasion-resistant** - seldom used – soils easily
- **Antimicrobial** – inhibit growth of bacteria and germs
- **Anti-rot and anti-mildew**
- **Antistatic** – fabric softener + antistatic sprays
- **Durable-press / permanent press**
 - See Box 12-4 p.203
 - Crease-resistant (CRF)
 - Prevents wrinkles and maintains creases
- **Flame-resistant** – See Box 12-5 p.204
- **Fume-fading resistant**



Additional Finishes continued

- Mothproof
- Slip-resistant
- Soil-release Finish
- Soil and water resistant
- Waterproof
 - Laminating or coating fabric with vinyl or polyurethane



Other Finishes

- Absorbent
- Antipesticide
- Corronizing
- Light-reflective
- Heat-reflective
- Light-stabilizing
- Finishes that regulate temperature
- Ultraviolet light absorbent

- Sunblocker UPF 40+ fabric: 75% nylon, 25% polyester
 - Feels amazingly like cotton

