

## I. Introduction to Care and Maintenance

Textile materials are among the oldest known to humanity, spanning prehistoric natural fibres like cotton and silk to modern synthetics.

In a family setup, fabrics are used primarily for apparel and household needs; however, in institutional settings, special fabrics are required for industrial purposes, heat and sound insulation, and medical uses such as bandages and masks.

Because these fabrics are selected for specific properties and functionality, it is vital to retain these characteristics throughout the material's life.

**Care and maintenance** involve two primary aspects:

1. **Physical Integrity:** Keeping the material free of damage and rectifying any physical issues that occur during use.
2. **Aesthetic and Hygienic Retention:** Removing stains and dirt while refreshing the textural and visual characteristics of the fabric.

Successful laundering or dry-cleaning results in fresh, hygienic, and spotless linen. This field is considered both a **science**, as it applies scientific principles and techniques, and an **art**, as it requires specific skills to produce aesthetically pleasing results.

## II. Factors Influencing Care Requirements

The specific care requirements for any fabric depend on several technical factors:

- **Fibre Content:** Whether the material is natural or man-made affects its reaction to heat and chemicals.
- **Yarn and Construction:** The type of yarn and the technique used to construct the fabric

(e.g., weaving or knitting) determine its durability and cleaning method.

- **Finishes and Colour:** Applied finishes (like starching or zari polishing) and the dyeing stage (fibre, yarn, or fabric stage) influence how the fabric must be treated.
- **Purpose of Usage:** The specific function of the fabric in an institution dictates the frequency and intensity of cleaning.

## III. Washing Equipment and Principles

Institutions use significantly larger and more complex equipment than households. Domestic machines typically handle 5–10 kg, whereas institutional machines can process **100 kg or more** per cycle.

**A. Washing Machine Models and Automation**  
Washing machines are generally categorised as **top loading** or **front loading**. They can be **fully automatic**, requiring a single time setting for water filling, temperature control, and rinsing, or **semi-automatic**, requiring manual intervention at various stages.

**B. Principles of Washing** The core principle of all washing machines is to keep the fabric moving in a solution to carry away dirt. This is achieved through three main methods:

1. **Agitation:** Used in top-loading machines, where an agitator with blades rotates or oscillates to create currents that force water into the fabric.
2. **Pulsation:** Also used in top loaders, involving rapid vertical movements by a pulsator.
3. **Tumbling:** Used in front-loading machines, where a horizontal cylinder revolves in a

partially filled tub, carrying clothes to the top and dropping them into the water.

### C. Water Extraction and Temperature Regulation

Temperature can be regulated via buttons or dials for both wash and rinse cycles.

After washing, water is extracted using centrifugal force. Spinning speeds vary from **333 to 1100 rpm**. The optimum speed for extraction without causing excessive wrinkles is approximately **600–620 rpm**.



## IV. Drying and Finishing Equipment

**A. Driers** At the commercial and institutional level, mechanical driers are used rather than open-air drying to ensure a constant flow of clean linen.

**B. Ironing and Hot Pressing** Ironing smoothens wrinkles, while **pressing** creates sharp creases in items like sleeves or pleated skirts.

Electric irons feature thermostats to suit different fabrics, and some use steam systems.

Institutional settings use heavy-duty equipment like **flatbed ironing**, **roller ironing**, and **calendaring machines** for large items like bed covers and curtains.

While most modern ironing is electric, charcoal irons—metal boxes filled with live coal—are still occasionally seen in India.

## V. Operational Structure of Laundries

**A. Individual Professionals and Dhobighats** In many Indian contexts, individual professionals known as **dhobis** collect household or institutional linen (from hostels or small restaurants) for cleaning at specially marked town areas called **dhobighats**.

**B. Commercial and Institutional Laundries** Large-scale laundries are organised into specialised sections to handle specific tasks:

- **Sections:** Washing, water extraction, drying, and ironing/pressing.
- **Specialised Units:** Separate areas for dry-cleaning, fibre-specific articles (silk, wool), and large items like carpets or blankets.
- **Pre-treatment Units:** Dedicated to inspection, sorting, mending, and stain removal.
- **Record Keeping:** Commercial setups use invoice systems and code tags to identify items for each customer or department.

## VI. Institutional Specifics: Hospitals vs. Hospitality

Institutional laundry management is essential for organisations that require a constant flow of clean uniforms and linen.

**A. Hospital Laundry Management** The primary emphasis in hospitals is on **hygiene, cleanliness, and disinfection**.

- **Material:** Most hospital articles are cotton for wash-fastness, except for woollen blankets.

- **Quantum:** The workload is massive; large hospitals may manage 2,000 beds, with sheets in OTs or labour rooms requiring 5 or more changes daily.
- **Stock:** A minimum of **six sets of linen per bed** is required.
- **Disposables:** Where infection risk is high, hospitals use disposable items that are destroyed by burning.
- **Process Flow:** Collection from wards -> Transportation to plant -> Sorting (clean, mildly soiled, very soiled) -> Washing (100kg loads) -> Hydro-extraction -> Drying -> Pressing/Folding -> Distribution.

**B. Hospitality Sector (Hotels and Restaurants)** In the hospitality sector, **aesthetics and final finish** are the most important criteria.

- **Finish:** High emphasis on starching, perfect ironing, and precise folding.
- **Variety:** Hotels deal with a wider variety of fibre contents than hospitals.
- **Guest Services:** They often handle personal laundry for guests.
- **Eco-friendly Practices:** Modern hotels often use 100% organic cotton, chemical-free laundry cycles, and energy-efficient bulbs to conserve natural resources.

## VII. Specialised Task: Stain Removal

A **stain** is an unwanted mark caused by the absorption of foreign matter, requiring special treatment before the general washing process. Identifying the stain is the first step toward correct removal.

### Common Stain Removal Procedures:

- **Blood:** Fresh stains should be soaked in cold water and washed in dilute ammonia; old stains require steeping in cold salt water.
- **Ball Pen Ink:** Steep in methylated spirit followed by a soap and water wash.
- **Grease:** Fresh stains are washed with hot water and soap; old stains require grease solvents like petrol or methylated spirit.
- **Tea and Coffee:** Fresh stains are treated with boiling water or dilute borax; old stains are steeped in glycerine.
- **Ink:** Fresh stains can be rubbed with tomato and salt or soaked in sour milk/curd. Old stains may require dilute oxalic acid followed by a borax rinse.

## VIII. Roles and Staffing in Institutions

In large hotels, the **housekeeping department** is responsible for the supply, upkeep, and exchange of various linens and uniforms.

- **Linen and Uniform Room:** This section coordinates with the laundry to ensure the entire establishment is provided with clean materials.

- **Linen Room Supervisor:** Responsible for the acquisition, storage, issue, and cleanliness of all institutional linen and staff uniforms.
- **Executive Housekeeper:** Manages the department through the judicious use of manpower, money, and time.

Professionals in this field must adhere to generic norms of **ethics and the dignity of labour**, as demonstrated by Mahatma Gandhi, who performed cleaning tasks to show that no job is inferior.



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## B. Educational Pathways

- **Undergraduate Studies:** Degrees in **Home Science**, Textile Science, Textile Chemistry, or Fabric and Apparel provide a strong foundation.
- **Specialised Courses:** Short-term **Laundry Management** programmes offer coaching in hi-tech laundry operations, often including job placement assistance.
- **Internships:** Practical training or internships are essential because each setup has different equipment and requirements.

## C. Career Scope

Graduates can find opportunities in:

- **Institutional Roles:** Working in hi-tech laundries for railways, airways, shipping lines, large hotels, and hospitals.
- **Entrepreneurship:** Starting commercial laundry services, especially in metropolitan areas where there is high demand from working women and small nursing homes.
- **Management:** Serving as managers or functionaries in established institutional laundry departments.

## IX. Preparing for a Career

The care and maintenance of fabrics is a highly technical field that requires specific expertise.

### A. Primary Requirements

- In-depth knowledge of fibre content, yarn production, and the effects of various chemicals and reagents on fabrics.
- Working knowledge of machinery requirements and their functioning.