

Water Efficiency

Water Management Options



Commercial Laundries



Commercial, industrial and institutional facilities include those that wash linens, uniforms and other items for hotels and motels, hospitals, nursing homes, prisons, universities and restaurants. Large amounts of water are regularly used in laundering facilities for operations that include the wash and rinse cycles of washing machines, steam-heated dryers, steam-pressing equipment and reclamation of dry solvent.

Traditional washer-extractor machines used by most laundry facilities operate with a rotating drum that agitates the laundry during wash



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and rinse cycles, then spins it at high speeds to extract water. Washer-extractors and most other traditional large-scale washing machines use fresh water for each wash and rinse cycle. The capacity for washer-extractors ranges from 25 to 400 dry pounds per load and use 2.5 to 3.5 gallons of water per pound of laundry. Water efficient laundering equipment, such as continuous-batch washers and water reclamation systems, can reduce water use by as much as 70 percent at commercial, industrial and institutional facilities equipped with traditional washer-extractors.

Water Efficiency Measures

Water and wastewater costs represent more than 50 percent of the total operating costs in a typical commercial, industrial and institutional laundry operation. In general, two gallons of water used per pound of clothes is considered a “good” water efficiency standard for commercial, industrial and institutional laundries; though this is not always achievable for heavily soiled fabrics. Water efficiency measures should not impair the cleaning or sanitation goals of the laundry operation. Water efficiency measures that may be applicable to commercial, industrial and institutional laundry operations include:

- Operate laundry equipment with full loads only.
- Reduce water levels, if possible, for partial loads.
- Replace or modify existing conventional laundry equipment to reduce water use.
- Replace traditional commercial clothes washers (vertical axis) with high efficiency washers (horizontal axis), which can save as much as two-thirds of the energy and water used by traditional models.
- Install a computer-controlled rinse water reclamation system. These systems can save as much as 25 percent of wash load’s water demand by diverting rinse

water to a storage tank for later reuse as wash water.

- Install a wash and rinse water treatment and reclamation system, except in very rare situations where health codes prohibit such use in specialized situations. By recycling both wash and rinse water, these systems can reduce a laundry’s water demand by about 50 percent.
- Install a continuous-batch (or tunnel) washer, which can reduce water demand by about 60 percent compared with that of washer-extractors.
- Install an electrically generated ozone laundry system, which can reduce water use by about 10 percent compared with that of traditional laundering systems. The ozone acts as a cleaning agent and also reduces detergent use by 30 to 90 percent.
- Consult service personnel and the laundry’s supplier of chemicals for the washer-extractors to ensure that equipment is operating at optimal efficiency.
- Avoid excessive backflushing of filters or softeners; backflush only when necessary.
- Place “save water” notices in hotel and motel guest rooms, urging guests to save water by minimizing the amount of linen that needs to be laundered.

The Commercial Laundries section was taken from the “Handbook of Water Use and Conservation,” by Amy Vickers.

CASE STUDY

Rinse Water Reuse

A laundry facility in Manchester, N.H., saves approximately 675,000 gallons of water per month by using a horizontal flow “tunnel-type” washing machine that reuses rinse water for bleaching and washing. This washing system is capable of using approximately 40 percent less water than a conventional type machine, based on equivalent cleaning requirements.



The North Carolina Division of Pollution Prevention and Environmental Assistance provides free, non-regulatory technical assistance and education on methods to eliminate, reduce, or recycle wastes before they become pollutants or require disposal. Telephone DPPEA at (919) 715-6500 or (800) 763-0136 for assistance with issues in this fact sheet or any of your waste reduction concerns.

