



Association Internationale de la Savonnerie, de la Détergence et des Produits d'Entretien

Industrial & Institutional Sector

Professional laundry and the Environment



The purpose of this brochure, prepared by the A.I.S.E. Industrial & Institutional Products (IIP) Environmental Task Force, is to show how the IIP manufacturing companies have responded to their customers and to society's environmental demands, and to give an idea of the environmental progress that has been made. Examples demonstrate how the development of innovative systems and services deliver the required performance with the lowest possible impact on the environment.

For more information, please consult the local industry association and request the full reference dossier.

A.I.S.E. and the industrial and institutional laundry sector

A.I.S.E., the International Association for Soaps, Detergents and Maintenance Products, represents companies from 28 different countries which manufacture these products for household or industrial and institutional use. Operating in a highly competitive environment, the industry is characterised by ongoing production innovation, driven by a desire to improve product performance and to safeguard human and environmental safety.

The industrial and institutional laundry market (I&I) has a long history of meeting the many demanding requirements made of it. Customers require high standards of cleanliness and hygiene, for a wide range of types of textiles and soils.

The industry also faces complexity in many other respects of its operations: stringent regulatory controls, often varying from country to country; different types of machines, dosing systems, textiles; variations in raw materials and packaging types.

Despite this complexity, the industry has over a long period of time made a remarkable effort to reduce the environmental impact of its operations. Co-operation between textile manufacturers, machine producers, customers and the industrial and institutional products industry has led to the development of systems using chemical mixes, dosing systems, water and energy conservation, which can be tailor-made to any situation or type of operation, in order to reduce laundry's impact on the environment.



Professional fabric washing and the involvement of A.I.S.E. member companies

The professional laundry segment is an important and very demanding customer group for the I&I sector. This segment of the sector, which comprises both large commercial and institutional laundries, as well as small ‘on premise’ laundries, corresponds to 12 % of the total I&I market (0.5 billion Euro).

The total annual volume of fabric washing detergents used in professional laundries is estimated to be about 10 % of the volume used by consumers in the household market.



Clean hygienic work wear for operators
(here in a dairy plant)
results from professional cleaning

Professional laundries do not simply buy a product or range of products from their suppliers. They buy a full service – the solution to their specific laundry problems – in order to make their operation satisfactory. Suppliers to professional laundries must therefore offer complete systems including installations, control systems and dosing equipment or other hardware. The laundries also demand other services such as training of personnel, advice on effluent control measures and monitoring of wash performance and hygiene.

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This total service means that the industry can provide a controlled answer to cleaning requirements, while keeping environmental impact to a minimum.

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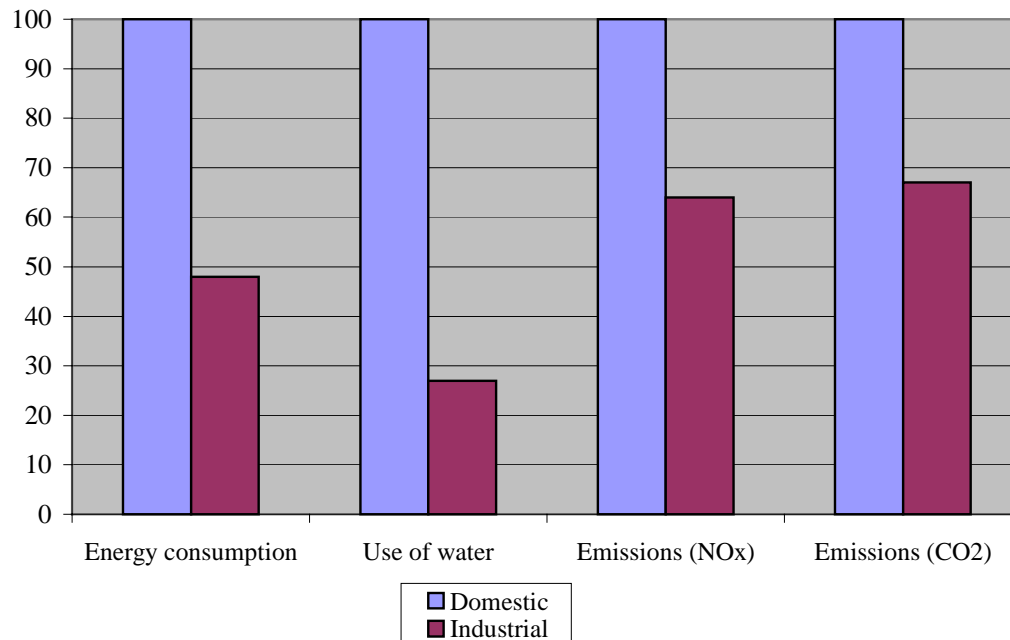
Measuring the impact on the environment

Life Cycle Assessments have shown that:

- the most energy-intensive phase of the process (some 70 %) is the washing itself, because of the energy consumed for heating each wash. Over 25 % of the energy used within the life cycle is needed to produce the raw materials.
- the washing phase is also responsible for the largest contribution to solid waste and air emissions, as electricity generation emits solid waste and pollutant gases such as carbon dioxide, sulphur dioxide and nitrogen oxides.
- the main impact on water is associated with biological oxygen demand because products are disposed of through the draining system.

The closely controlled environment in which professional laundry takes place means that significant reductions can be made to the environmental impact. This can be seen when the resources used or emissions released by the industrial washing process are compared to those for the household washing process.

Chart to show industrial laundry as % of domestic wash for key measurement parameters



Reducing the use of energy and water

The importance of energy and water in the washing process made these prime targets for the industry's constant efforts to reduce the use of resources. Indeed, the need for hot washing water means that reducing water consumption results in reduced energy use.

Over recent years, joint action by the machine industry, the laundries and the detergents suppliers has resulted in significant reductions:

	Washer Extractor	Tunnel Washers
1970s	Fresh Water: 30 l/kg Steam: 1.1 kg/kg	Fresh Water: 10-15 l/kg Steam: 0.7 – 0.8 kg/kg
1990s	Fresh Water: 15-20 l/kg Steam: 0.6-0.8 kg/kg	Fresh Water: 8 – 12 l/kg Steam: 0.4 – 0.5 kg/kg

Comments: The consumption figures refer to litres of fresh water per kg of dry linen or kg of steam per kg of dry linen.

Key to these reductions have been new products and processes for low temperature washing and for re-use of rinse water.

Reducing effluent and solid waste emissions

Products are tailored as closely as possible to the specific requirements of individual users and processes so as to minimise the release of waste products. Detailed dosage instructions are given, and automated dosage systems are often used for liquid detergents or additives (bleach, alkali).

Most large industrial laundries have central water softening equipment, which means they have a reduced need for 'builders' in the detergent formulation or a reduced dose-dependency vis-a-vis water hardness.

Packaging waste is kept to a minimum either through bulk delivery and storage or by using larger and re-usable packs.

A.I.S.E. member companies have developed state of the art procedures to evaluate the environmental impact of their products and to guarantee their environmental and human safety. Furthermore, the I&I products will continue to meet all relevant environmental regulatory requirements.

New systems for better washing and a better environment

Besides the products themselves, perhaps the greatest contribution to reducing environmental impact comes from the industry's work on how the products are best used, in particular in three areas:

- detergent delivery and dispensing systems
- monitoring and controlling systems (including laundry management systems)
- recycling systems for water and energy.

The industry in its widest sense contributed to develop these three areas: energy and water saving equipment from the machine industry, new easier to care and more durable textiles from the textile industry and finally the I&I suppliers with new products and delivery systems.

There are a broad variety of dispensers in the market to dose liquids, powders, pastes and even solids automatically. Increasing use is made of sensors, which measure the amount of product actually dispensed, so that a central control unit is able to stop the equipment as soon as the required quantity has reached the machine. This avoids overdosage or under-dosage, both of which are environmentally unsound. Overdosage means more pollution and under-dosage often means a new wash, which annihilates the pollution prevention in terms of quantity of chemicals and energy and which puts more strain on sensitive fabrics.



The most advanced way to protect existing resources is the use of an efficient Laundry Management Information System (LMIS). With the help of such a system it is very easy to receive important machine and process data, including for example the machine load. The consumption of chemicals, water and energy depends to a large extent on optimal utilisation of the machine - i.e. loading it with the correct and specified amount of goods -. These laundry data management systems make it possible not only to control the chemistry, but also to have a good idea of energy and water consumption.

Many laundries meanwhile have set up quality management and environmental oriented management systems and have proven their high commitment to continuous environmental improvements.