Electrolux Professional Laundry Solutions

## The essential guide to laundry planning

For architects, specifiers and construction companies







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# The professional solution for in-house laundry systems

Electrolux Professional is a leading manufacturer in creating complete laundry solutions tailored to individual requirements, combining best in class laundry equipment with outstanding customer support.

Electrolux Professional provide exceptional laundry solutions tailored to suit the requirements of your business. Our expertise covers everything from hotels, health care establishments and schools to commercial laundry operations. Ideally, we work with architects and specifiers during the design and planning phase to maximise the customer benefits and the cost savings a well designed laundry can offer. The laundry should be a primary consideration, reducing the need to make good the facilities at a later date.





#### 1.0 Location and design

- An ideal location for a laundry is the **ground floor**. This minimises vibrations and excessive noise from the equipment.
- The laundry room should preferably have at least one external wall to simply be able to terminate the exhausts to the atmosphere and to be able to bring in fresh air for the dryers. This will eliminate the extra installation cost of mechanical fan systems. The termination of the exhaust outlets should be to the customer's specification, try to have the external wall away from visual sight, due to the aesthetics.
- Make sure that the access route to the laundry room has sufficient openings to be able to bring in the machines.
- It is essential to keep an access route in place due to the option of exchanging or buying new machines in the future.
- Ideally we would recommend windows for natural light, in order to improve the working environment in the laundry room.





2 Machine access route, door with windows for natural light

- Trapped foul drains are required for the washing machines as the waste water contains chemicals.
- Avoid where possible, locating a laundry in the basement due to the requirements of the machines, i.e. ducting and drains. The access availability in a basement is usually very limited.
- The floor should be **solid concrete**.
- Avoid wooden flooring.
- The dirty and the clean work should be kept apart in the laundry room to eliminate cross contamination. It is therefore good practice to have a dedicated sorting area for the dirty items and then a storage area for the clean linen.
- The room should ideally be designed so that 1/3 of the space is dedicated for the dirty side and 2/3 for the clean side.
- If possible, one door should be dedicated for the dirty linen (*fig.* 1) entering the laundry room and another for the clean (*fig.* 2) linen leaving the laundry room, **in total two doors** (*fig.* 2).









- The **air flow** should be from the clean side to the dirty side.
- Try to retain an **area for the detergents** in the "dirty area". If possible increase the distance at the rear of the washers to accommodate them or dedicate a specific area.
- A minimum 500mm at the rear of the machines is required for service access.
- Shelves and tables should be stainless steel and not wooden.
- Tables and trolleys are recommended to be mobile.





Detergents
Space for service access. Extra allocated space for detergents



## 1.1 Design layout example





• When planning a laundry, Electrolux can provide full layout drawings and 3D views to assist in visualising the laundry for the customer.







Drying and sorting area



#### 2.0 Washing machines

Electrolux offer three different ranges of washing machines:

- Front Loaded (2.1)
- Pocket Barrier (2.2)
- Side Loaded and Barrier (2.3)

Electrolux front loaded washing machines are available in a number of configurations. Our systems can be customised to meet the specific needs of your laundry.

The Barrier concept has been developed to clearly define the segregation between the dirty work entering the laundry room and the clean work exiting the laundry room.

The barrier washing machines have one dedicated door to load the dirty work and another door for unloading the work once the cycle has been completed.

The washers are built in to a partition wall (barrier wall) to separate the dirty area and the clean area. Before entering the clean area an "air lock" (small room with a hand basin) is designed to be passed through to add to the hygiene procedures of washing hands, changing overalls and footwear.



Most commercial washing machines need to be **raised**, this is usually done via a plinth that is bought from the washing machine supplier, or built on site by the builders.

The machines require a three phase or single phase **electric supply** depending on the machine model and the electricity available in the laundry room.

A **hot and cold** water supply is required at the rear of the washing machines. If hot water is not available, the laundry can be run with cold water only, however, the heating time and the utility costs will increase. Also install. **Electrical isolators** connected to electrical outlets, which are located at the rear of the machine for ease of isolation.



Hot and cold water supply



Electrical isolators connected to electrical outlets, for easy access to turn on and off the machines.

#### 2.1 Front loaded washing machines

**High Spin** washing machines have free standing plinths. The washer is then mounted on to the plinth as per Electrolux installation manual (fig 1).

**Normal and Super Spin** washing machines need to have the plinths bolted to the floor, with M16 bolts can be used. The concrete floor must be at least 150mm thick. Please refer to the Electrolux installation manual for further information.

**The drain outlet** is positioned at the rear of the machine. The rubber hose / pipe should have a downward flow from the machine. The trapped foul drain (supplied by the customer) should be situated on the "dirty" side of the laundry. Ideally in the corner of the laundry room close to the drain outlet from the washing machines (fig 2).

Common drain pipes for both of the washing machines. Running in to a trapped foul drain, supplied by the customer (fig 3).



Free standing plinth from ELS (fig 1)







Drain pipe running in to a trapped foul drain (fig 3)

#### **2.2** Pocket barrier washing machines

- A = Width of the hole in the wall, 40mm extra on each side and on top, provided by the customer before installation. (Barrier machine width + 40 + 40 on each side + 40mm for the height) The thickness of the barrier wall should be min. 70mm, max. 100mm.
- **B** = Frame optional depending on the thickness of the barrier wall. *Please contact Electrolux for more information if barrier wall thickness is >100mm*
- 4 = Barrier wall provided by the customer.
- 5 = Removable panel to be built by the customer to be able to access the top of the machine for service purposes. The panel could be mounted with screws or be hinged.
- D = Height of the hole to be cut in the wall. Plinth + machine height + 40mm extra on top.
- E = Height of removable panel, 150mm due to service access on top of the machine. The removable panel can be fitted with hinges or just screwed on to the barrier wall.

**Two pocket barrier washing machine models** are available in our range, the WB4130H (13kg) and the WB180H (18kg), larger barrier washing machines are available as side loaded models.

**11** = WB4130H and the WB4180H have the loading door as standard on the left hand side or alternatively on the right hand side, looking from the front (unloading).





#### **Drain position**

The **drain** should be positioned straight underneath the machine, not at the rear of the washing machine as "normal", due to health and safety reasons.

The **water** supply and the **electrical supply** could be dropping down from the ceiling height (*fig 1*).

To be able to save space in the laundry room the washers can be turned in at an **angle of 90°** (*pic.1*).

Another option is to have them **side by side** with the recommended distance of 1.2m in between to be able to load both of the washing machines at the same time (*pic. 2*).



Fig.1





#### **Barrier laundry**



#### 2.3 Side loaded barrier washing machines

Our **range** of side loaded barrier washing machines start from 250 litre capacity to 650 litre capacity.

The machines **must be installed on a completely even surface**, capable of resisting the specified technical characteristics, as described in ELS installation manuals.

Try to leave a 1 metre gap between the machine, a wall or any other machine at the sides. If space does not allow this then a 700mm gap between the machines is acceptable.

It is good practice to incorporate viewing windows within the partition walls from the dirty to clean side for all of the barrier washing machines, and to have an intercom system to help reduce the requirement for staff to go from one side to the other.







The **barrier wall** should be assembled before installing the machines.

A = Width of the hole in the wall provided by the customer before installation.

 $\mathbf{B}$  = Height of the hole in the wall provided by the customer before installation.  $\mathbf{C}$  = Height of the machine.

**D** = Width of the machine

- **O** = Barrier wall supplied by the customer
- **P** = Optional depending on the thickness of the barrier wall.

The thickness of the barrier wall should ideally be 80mm, not exceed 100mm.  $\mathbf{R} =$  Supplied by ELS.

The machines **drain** outlet is located underneath the machine and has an outside diameter of 75mm.

It is good practice to connect a duct with a diameter of 60mm for the air ventilation at the top of the machine. The exhaust should be running outside the laundry room and be discharged in accordance with current legislation. The air temperature may rise to 100°C.

The **water supply** and the **electrical supply** could be dropping down from the ceiling height.







3.0 Tumble dryers

Electrolux offer three different models:

- Standard (3a)
- Low Energy (3b) and the
- Condenser (3c)

Tumble dryers have been selected describing in more detail their installation requirements.







#### **3.1** Standard tumble dryers

- The external wall for the air intake and the air outlet should be positioned on the "clean" side of the laundry where the tumble dryers will be located.
- All tumble dryers require a large amount of fresh air for drying and for combustion. This is usually brought in (can be mechanically bought in) from the outside, either via a **grill** (fig 1) or with direct air intake (fig 2).
- The size of the ventilation grill for the makeup air depends on the model of the tumble dryer. Electrolux Laundry Systems will provide details about the required volume of air per hour (m3/h), refer to ELS product data sheets. Grill size to be calculated by the appointed installer.
- As an option, By ducting the required fresh air directly in to the tumble dryers, it reduces the requirement to provide working area heating and so save on utility costs, and improving the working conditions.









Fig.1: Grill covered due to cold air draft in laundry room

Exhausts running individually, terminating with a slow swept bend

- With a ventilation grill, **cold air is drawn** in to the laundry room reducing the working environment temperature. The picture *(fig. 1)* illustrates a general example of how the air intake grill is covered to prevent the laundry room from getting cold. This example restricts the dryer from running efficiently.
- Tumble dryers have an **exhaust** (ducting) to discharge the expelled air. The exhaust has to be discharged to the atmosphere, it is recommended that the final termination has a slow swept bend, due to weather conditions. (Local regulations should be adhered to).

- The exhausts can either run **individually** or be combined in to one **common duct**.
- Common header, to be discharged to the atmosphere
- If the tumble dryer is run by gas then the exhaust has to be discharged 2 metres away from any opening points.
- If mechanical air intake and extract are to be installed in particular for a gas operating tumble dryer, the air intake and exhaust has to be interlocked with the gas supply. If fan failure occurs the gas supply is cut off from the machines.
- Gas dryers also require an electrically operated emergency gas shut off switch which should be located near the exit(s).
- If the duct run is too long then the exhausts can create back pressure, in this case the ducts may need to be fan assisted. The back pressure is to be calculated by the installer. The maximum pressure drop is confirmed in ELS installation manuals.







Exhaust terminating 2m away from any opening points.

#### Exhausts and air intake solutions







Exhausts to be discharged at roof level
Direct air intake
Exhausts rising

Direct air intake at low level, to avoid draft in the laundry room. Exhausts running at low level and rising to high level. Two individual exhausts running in to a common duct.



#### **3.2** Low energy tumble dryers

- The Low Energy tumble dryers are heat pump dryers.
- If external walls are not available then this is the perfect alternative as there is no exhaust duct required.
- The heat pump tumble dryer must be connected to a drain. The drain outlet diameter is 25mm.
- Energy source electric (E) 3 phase.
- The energy consumption is only 0.22kWh/kg.
- The table opposite illustrates the savings per load compared to a stacking dryer with the drum volume of 300 litres and with a 290 litre drum volume dryer.
- Available in a 300 litre drum volume capacity.
- The required space on each side of the dryer is minimum 500mm, the space at the rear of the dryer is minimum 300mm.
- During the drying process the room temperature rises and therefore **ventilation** is a requirement.

ltem	Capacity	Energy consumption electric usage per load	Total Cost per load	
Dryer	kg	kW	\$	
T4300L(E)	13.6	2.24	0.41	
T4300S(E)	2 x 16.7	6.51	1.19	
T5290(E)	16.1	6.15	1.13	



#### **3.3** Condenser tumble dryers

- The condenser dryers do not have an exhaust outlet.
- The dryer has a drain outlet with a **1/2**" connection.
- During operation, the room experiences a temperature increase, which results in a need of ventilation.
- The dryer is an electrical heated dryer with the drum volume of **130 or 190 litres**.
- No external walls are required.





4.0 Ironers

- Electrolux Laundry Systems has the widest range of industrial ironers. The flatwork ironer is a key piece of equipment that sets the visual standard. Different ironers, either the flat bed type ironer (IB) or the cylinder type of ironer (IC) will provide the expected quality. The quality is defined by the customers own understanding this varies from person to person. For example a crease in the middle of a duvet cover may not be accepted for some, but for others it may not matter at all. It is recommended to contact Electrolux Laundry Systems for guidelines, calculations and specifications.
- A major difference between the two ironers is their contact angle. The contact angle determines the surface area which the flatwork is in contact with. The bigger the surface the quicker the items can go through the ironer providing a "good" and dry standard quality. On a cylinder type ironer the contact angle is up to 300°, on a bed type ironer it cannot exceed 180°. The IB range of ironers and the IC range of ironers are two total separate operations.
- The only relevant figure that qualifies the capacity of an ironer is its capacity to evaporate water. Factors like sheet sizes, the bigger the sheets the longer it takes to iron, the material of the sheet, different material evaporate different amount of water, operator skills etc. has a huge impact of the output per hour for the ironer.

#### 4.1 B ironers - Flat bed type ironers

 With the "Bed type" technology, the hot surface is fixed and the linen slides on to it. The electrical elements are positioned outside the chest. This ironer can only be electrically heated. The IB series of ironers is especially suitable for small on Premises Laundries, mainly processing table linen from small and medium sized restaurants and care homes. It is also ideal for apartment house laundries and for some coin operated applications.



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#### 4.2 IC ironers - Cylinder type ironers

- The IC ironer is also known as the "drying" ironer. On a Cylinder type ironer the heated surface (the cylinder) and the ironing belts are in motion, driving the linen through. The heating means remains static inside the cylinder. For an equal diameter cylinder, the production of a Cylinder type ironer is much greater than the one for a Bed type ironer. The ironer can be heated by electricity, gas, steam or thermal oil.
- The ironer can have automatic feeding and folding mechanism which will increase the productivity and save on labour costs. For example with the feeding mechanism larger items can be put through to enable only one operator instead of two.



- As previously stated different fabrics will retain different amount of water requiring more or less time to evaporate. Manual speed has to be set depending on the fabric and the moisture content going through the ironer. This process requires some skills and experience from the operator. With an automatic moisture control system, unique feature by Electrolux, the machine automatically sets its speed of the ironer to suit different fabrics and different moisture contents. This system allows much less skills from the operator increasing the productivity by saving time on varying the speed.
- The IC448 series of ironers has an option of the Dubixium cylinder which is unique to ELS. It has an exclusive designed cylinder with twin walls and between these cylinders it has patented thermal oil flow. As the roller rotates, the hot thermal oil is moved around the cylinder, providing a constant temperature along the length of the roller to reduce hot spots, improving the production and the quality of work.

Refer to manufactures installation instructions for further details/information.







## Technical Documentation



#### 5.0 Product data sheets, WRAS - Certificate and check list

 Section 5.1 explains more in depth in how to read and understand the technical data on the Electrolux product data sheets which has been produced for each individual Electrolux machine. Electrolux washing machines are WRAS approved, for more information please see section
5.2. A checklist has also been created to be able to easily help to evaluate the potential laundry room.



### 5.1 Product data sheets

 The Electrolux product data sheets have technical information that enables the user to understand the requirements for any Electrolux machine. Opposite are two examples of the product data sheets followed with comments to be able to understand the relevant data required for the machine depending on the services available in the laundry room. One example is for the washer W4240H, 3 phase electrical heated. The other example is for the dryer T4350, 3 phase gas heated.

Electrolux Laundry Systems is the only company who publishes all of the individual machines utility usages. All data sheets can be downloaded on: www.electrolux.com/professional

#### Washer - Product data sheet





#### **Dryer - Product data sheet**





of the machine

### **5.2 WRAS - Certification**

- WRAS (Water Regulations Advisory Scheme) is the UK's Water Industry's approval scheme. Products approved by the scheme have been shown to comply with the requirements of the Water Supply (Water Fittings) Regulations 1999 and modifications.
- The Mechanical properties of products are tested to a variety of European and British standards and to Regulator's Specifications depending on the product type. WRc-NSF is

the only laboratory in the UK that carries out Water Regulations Testing for material and mechanical requirements.

 Electrolux Laundry Systems has had the mentioned products on the attached WRAS certificate examined, tested and found, when correctly installed, to comply with the requirements of the United Kingdom Water Supply (Water Fitting) Regulations / Scottish Water Byelaws. The WRAS Certificate can be found on Electrolux webpage: www.electrolux.co.uk/laundrysystems



This certifies that

#### ELECTROLUX LAUNDRY SYSTEMS AB

has had the undermentioned product examined, tested and found, when correctly installed, to comply with the requirements of the United Kingdom Water Supply (Water Pittings) Regulations/Scottish Water Byelaws.

GENERATION 3000 TYPE W3 & GENERATION 4000 TYPE W4 COMMERCIAL CLOTHES WASHING MACHINES





A basic checklist has been created to try and highlight the most relevant information to think about before and whilst developing a laundry room.

- Is the laundry located on the ground floor?
- Are there any external walls?
- Is there a clear level machine access route from the drop off point in to the laundry room?
- Are there any windows to provide any natural light?
- Ensure that trapped foul drains are available in the laundry room.
- Floor to be solid concrete floor.
- Keep a dedicated area for the dirty laundry and a dedicated area for the clean laundry.
- Keep space for ancillary items, for example sluice sinks, sinks, stainless steel tables, trolleys etc.
- Keep space for the air intake and for the exhaust duct(s).
- Keep space at the rear of the machines for service access.

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## **Contact information**

If you need further assistance in the design and planning of your laundry requirements our expert team are on hand every step of the way.

Visit us online at www.electrolux.com/professional or call us on 1300 888 948



For more information contact us:

Electrolux Professional Laundry Solutions

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