



Environmental Product Declaration

Air heat exchangers

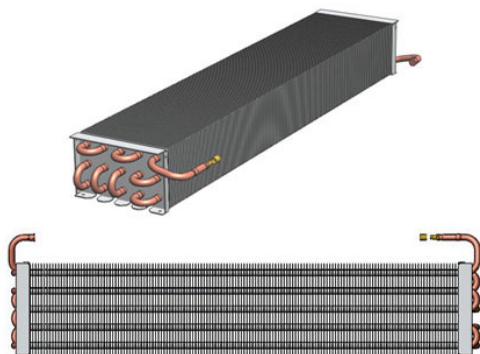
Alfa Laval endeavours to perform its own operations as cleanly and efficiently as possible. Environmental aspects are taken into consideration when developing, designing, manufacturing, servicing and marketing the company's products. Alfa Laval does this by identifying the significant environmental impacts of its products and operations and taking appropriate measures to reduce them. This work is supported by implementing environmental management systems (normally certified to ISO 14001) in all its manufacturing operations.

This Environmental Product Declaration is published in accordance with ISO 14021.

For more information, Life Cycle Assessment and Sustainability Reports are available on request.

The product

An air heat exchanger consists of coil, fan and casing. The coil is composed of fins, tubes and a support frame. Fins are made of aluminium or copper with a thickness from 0.1 to 0.3 mm. Fin spacings can range from 2 to 18 mm depending on the coil design. Tubes are inserted in the fin pack according to the corresponding tube plan and will be bonded with the fins through a special expansion or press-on method. Tubes are available in different materials such as copper, aluminum or stainless steel. Tubes and fins are supported by a support frame. The casing holds the complete finned coil, giving it the necessary stability. The casing is made of (painted) aluminium, steel or stainless steel, depending on the requirements.



Step Control

Construction Materials

Casing material

Standard casing material is aluminum which is 100% recyclable. An available option is stainless steel 304 which is typically 60% to 90% recyclable.

Support Frame

The support frame is normally made of carbon steel. The degree of recyclability varies between suppliers.

Fins

Standard fins are aluminum and 100% recyclable. An available option is copper which is 100% recyclable .

Tubes

Standard tube material is copper which is 100% recyclable. An available option is stainless steel 304 which is typically 60% to 90% recyclable, or aluminum which is 100% recyclable.

Fans and Electrical Components

Every component fulfills the RoHS (Restriction of Hazardous Substances Directive). The degree of recyclability varies between suppliers.

Packing

Packing material consists of wood and/or cardboard boxes. Alfa Laval enforces strict environmental demands on suppliers for all types of packing material.

Paint

The casing is painted using a pigmented epoxy coating. The coating thickness depends on the corrosiveness of the environment.

Restricted substances

All components are checked against EU legislation and global agreements such as the Montreal Protocol and the REACH Candidate List. No components contain any substances on those lists.

Manufacturing

The major environmental impact during manufacturing comes from the construction materials. Energy (electrical, fossil fuels) typically accounts for less than 2% of the total environmental impact of manufacturing.

All Alfa Laval's manufacturing sites operate with an environmental management system. Data on energy consumption and emissions to air and water and other environmental factors are reported annually in Alfa Laval's Sustainability Report.

Use

The heat exchanger as such does not give rise to any emissions and the energy consumption is limited thanks to electronically controlled fans.

During the lifetime of the heat exchanger, there may be the need for the replacement of parts such as fans. In order to maintain the level of performance, Alfa Laval recommends cleaning at regular intervals, the frequency of which depends on application and duty. Alfa Laval provides non-toxic cleaning chemicals containing biodegradable surfactants.

Transportation

Transportation accounts for a large part of Alfa Laval's CO₂ emissions. In order to reduce these emissions, all transportation providers are evaluated and classified from an environmental point of view. Furthermore, strict demands are placed on transportation providers to propose ideas for reducing the environmental impact of Alfa Laval's transportation.

Air heat exchanger construction materials

Heat exchanger component	Weight %	Material
Casing	11 - 15	Aluminium (standard) Stainless steel
Support frame	15.3 - 19.3	Steel
Fins	6.8 - 10.8	Aluminium (standard) Copper
Tubes	12.7 - 16.7	Copper (standard) Aluminium, steel
Fan core	12.6 - 16.6	Aluminium
Fan blade	1.1 - 5.1	Aluminium
Fan grid	3.2 - 7.2	Steel
Fan cowl	7.3 - 11.3	Steel
Packing	5.4 - 9.4	Wood (standard) cardboard
Electrical components	0 - 3.7	Copper & PVC
Paint	0 - 2.2	Polyester

End of life

The unit is readily disassembled into its main components. Waste from the product is not hazardous (EU Directive 91/689/EEC). Chemicals must be drained off before any end-of-life treatment and treated according to local regulations.

Recycling of metals

It is possible to recycle all metallic material, thus reducing the use of virgin materials for the new production of metals. Tubes and fins are sorted according to type of material, and casing components are sorted as mixed scrap. Fans must be treated according to local regulations. Wood and cardboard boxes can be reused, recycled or used for energy recovery.

How to contact Alfa Laval

Up-to-date Alfa Laval contact details for all countries are always available on our website at www.alfalaval.com

