

# Accelerated Capital Allowances Eligibility Criteria

Category: Process and Heating, Ventilation and Air-conditioning  
(HVAC) Control Systems

## *Technology: Heat Exchangers*

Heat Exchangers are equipment that is specifically designed to enable the efficient transfer of energy from one liquid or gas stream to another, in both heating and cooling applications.

Heat Exchanger equipment is considered to include the following:

### Run-around Coil heat exchangers

A Run-around Coil heat exchanger transfers energy from an exhaust air stream to a supply air stream via an energy transfer medium circuit (usually water) connecting the two energy streams.

### Liquid-to-liquid Plate heat exchangers

Liquid-to-liquid plate heat exchangers comprise of a series of formed plates through which liquid streams are channeled in alternate flows. Energy is transferred between an exhaust and supply liquid stream via the exchangers and an energy transfer circuit.

### Air-to-air Plate heat exchangers

Air-to-air plate heat exchangers comprise of a series of formed plates through which air streams are channeled in alternate flows. Energy is transferred between an exhaust and supply airstream via the exchangers and an energy transfer circuit.

### Thermal Wheel heat exchangers

Thermal wheel heat exchangers are installed where the exhaust air stream is directly adjacent to the supply air stream. The wheel rotates slowly on an axis perpendicular to air flow. The rotation of the wheel transfers energy between the two streams.

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## Eligibility Criteria

In order to be included on the ACA specified list, the specific heat exchanger equipment must satisfy *all* of the relevant requirements set out below.

***Note:** Supporting documentation that clearly demonstrates ACA compliance according to the conditions below will be required as part of the ACA checking process. Detailed information on the types of documents accepted can be found in the separate Supporting Documentation guidelines.*

**General Heat Exchanger Eligibility Criteria**

(Applicable to all heat exchanger equipment)

No.	Condition
1.	All equipment and/or components must be CE marked as required by the specific EU directive(s).
2.	All required performance values must be tested according to: <ul style="list-style-type: none"> <li>EN305 “Heat exchangers. Definitions of performance of heat exchangers and the general test procedure for establishing performance of all heat exchangers”</li> <li>EN 306 “Heat exchangers. Methods of measuring the parameters necessary for establishing the performance”</li> <li>EN 308 “Heat exchangers – Test procedures for establishing the performance of air to air and flue gases heat recovery devices”</li> </ul> As specified for each individual condition ,or scientific equivalent.

**Run-around heat exchangers - specific Eligibility Criteria**

(To be met in addition to the general eligibility criteria)

No.	Condition
3.	A dry heat recovery efficiency at the product’s maximum rated air flow balanced flow conditions that is greater than or equal to 50%, tested in compliance with EN308 or equivalent.
4.	A pressure drop across each side of the heat exchanger(s) within the product at the product’s maximum rated air flow that is less than or equal to 250Pa across each air side and less than or equal to 250kPa across each water side, tested in compliance with EN308 or equivalent.

**Liquid-to-liquid Plate Heat exchangers - specific Eligibility Criteria**

(To be met in addition to the general eligibility criteria)

5.	A ratio of internal heat exchanging surface area to maximum operating volume greater than 200. ( $m^2/m^3 > 200$ ). tested in compliance with EN305/EN306.
6.	A heat transfer efficiency greater than or equal to 85% during maximum capacity operation. tested in compliance with EN305/EN306.

**Air-to-air Plate Heat exchangers - specific Eligibility Criteria**

(To be met in addition to the general eligibility criteria)

No.	Condition
7.	A dry heat recovery efficiency at the product’s maximum rated air flow balanced flow conditions that is greater than or equal to 55%, tested in compliance with EN308 or equivalent.

8.	A pressure drop across each side of the heat exchanger(s) within the product at the product’s maximum rated air flow that is less than or equal to 250Pa across each side, tested in compliance with EN308 or equivalent.
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***Thermal Wheel heat exchangers - specific Eligibility Criteria***

(To be met in addition to the general eligibility criteria)

No.	Condition
9.	A dry heat recovery efficiency at the product’s maximum rated air flow balanced flow conditions that is greater than or equal to 72%, tested in compliance with EN308 or equivalent.
10.	A pressure drop across each side of the heat exchanger(s) within the product at the product’s maximum rated air flow that is less than or equal to 200Pa across each side, tested in compliance with EN308 or equivalent.

Where the **maximum rated air flow** is the flow rate specified by the manufacturer according to the product’s design limits, for example, a maximum pressure drop or maximum face air speed.

----- *End of ACA eligibility criteria* -----

*Please see next section for guidance on:*

- 1. Technical details required in product submission**
- 2. Supporting documentation required**

## Guidance on product details and supporting documentation

*The following information is not part of the official criteria document published within the relevant statutory Instrument; it has been added here for guidance purposes only in order to provide assistance with the submission of product details and the provision of the required supporting documentation.*

**Note:** All information contained within this guidance document is subject to change without notice

### Technical information required in product submission

The following are the specific technical values required as part of the product submission for this technology:

#### Heat Exchanger type

As part of the product submission you must first select which type of heat exchanger your product is. Only one type can be chosen per product.

#### Efficiency

The efficiency (%) of the product is required as a value for the product submission. It must be entered as number only (do not include units). There should also be no spaces or full stops after the number submitted. The figure must comply with the criteria requirements for minimum efficiency values.

#### Maximum air pressure drop

The maximum rated air pressure drop in Pa of the product is required as a value for the product submission. It must be entered as whole number only (do not include the Pa symbol). There should also be no spaces or full stops after the number submitted. The figure must comply with the criteria requirements for minimum power rating values.

### Supporting documentation required

Described below is the list of documents that are accepted as proof of compliance for the specific product conditions.

**Note:** This information will only be requested AFTER you submit your product's basic details online.

#### Important Notes to Product Providers

Please ensure that you read the "Important Notes to Product Providers" section at the end of this document prior to submitting documentation.

## General Heat Exchanger Eligibility Criteria

(Applicable to all Heat Exchanger equipment)

No.	Condition	Supporting Documentation Requirement
1.	All equipment and/or components must be CE marked as required by the specific EU directive(s).	<p>Official and published manufacturer’s technical data sheet or brochure that demonstrates CE marking compliance.</p> <p><b>OR</b></p> <p>A copy of an official signed declaration on headed paper which confirms CE marking compliance.</p> <p>Official declarations should explicitly state the product for which CE marking is being confirmed (i.e. do not provide a letter simply stating general compliance with the relevant ACA Condition).</p> <p>Where a document is used to demonstrate conformance for a number of products or range of products it should clearly specify each individual product covered by that document.</p>
2.	<p>All required performance values must be tested according to:</p> <ul style="list-style-type: none"> <li>• EN305 “Heat exchangers. Definitions of performance of heat exchangers and the general test procedure for establishing performance of all heat exchangers”</li> <li>• EN 306 “Heat exchangers. Methods of measuring the parameters necessary for establishing the performance”</li> <li>• EN 308 “Heat exchangers – Test procedures for establishing the performance of air to air and flue gases heat recovery devices”</li> </ul> <p>As specified for each individual condition</p> <p>,or scientific equivalent.</p>	<p>Accredited certification that the product complies with the relevant standard and that all efficiency and pressure drop figures come from these tests.</p> <p><b>OR</b></p> <p>Evidence of official testing by manufacturer or independent test lab carried out according to the principles outlined in the standards and conditions above and demonstrating that all efficiency and pressure drop figures come from these tests. Test reports should be of the format described at the end of this document.</p> <p>See note on ‘Scientific Equivalence’ in the Important Notes for Product Providers section of this document.</p>

**Run-around heat exchangers specific Eligibility Criteria**

(To be met in addition to the general eligibility criteria)

No.	Condition	Supporting Documentation Requirement
3.	A dry heat recovery efficiency at the product's maximum rated air flow balanced flow conditions that is greater than or equal to 50%, tested in compliance with EN308 or equivalent.	Official and published manufacturer's technical data sheet or brochure that demonstrates compliance with the requirements of the condition.
4.	A pressure drop across each side of the heat exchanger(s) within the product at the product's maximum rated air flow that is less than or equal to 250Pa across each air side and less than or equal to 250kPa across each water side, tested in compliance with EN308 or equivalent.	Official and published manufacturer's technical data sheet or brochure that demonstrates compliance with the requirements of the condition.

**Liquid to Liquid Plate Heat exchangers specific Eligibility Criteria**

(To be met in addition to the general eligibility criteria)

No.	Condition	Supporting Documentation Requirement
5.	A ratio of internal heat exchanging surface area to maximum operating volume greater than 200. ( $m^2/m^3 > 200$ ), tested in compliance with EN305/EN306	Official and published manufacturer's technical data sheet or brochure that demonstrates compliance with the requirements of the condition.
6.	A heat transfer efficiency greater than or equal to 85% during maximum capacity operation, tested in compliance with EN305/EN306	Official and published manufacturer's technical data sheet or brochure that demonstrates compliance with the requirements of the condition.

**Air to Air Plate Heat exchangers specific Eligibility Criteria**

(To be met in addition to the general eligibility criteria)

No.	Condition	Supporting Documentation Requirement
7.	A dry heat recovery efficiency at the product's maximum rated air flow balanced flow conditions that is greater than or equal to 55%, tested in compliance with EN308 or equivalent.	Official and published manufacturer's technical data sheet or brochure that demonstrates compliance with the requirements of the condition.
8.	A pressure drop across each side of the heat exchanger(s) within the product at the product's maximum rated air flow that is less than or equal to 250Pa across each side, tested in compliance with EN308 or equivalent.	Official and published manufacturer's technical data sheet or brochure that demonstrates compliance with the requirements of the condition.

**Thermal Wheel heat exchangers specific Eligibility Criteria**

(To be met in addition to the general eligibility criteria)

No.	Condition	Supporting Documentation Requirement
9.	A dry heat recovery efficiency at the product's maximum rated air flow balanced flow conditions that is greater than or equal to 72%, tested in compliance with EN308 or equivalent.	Official and published manufacturer's technical data sheet or brochure that demonstrates compliance with the requirements of the condition.

No.	Condition	Supporting Documentation Requirement
10.	A pressure drop across each side of the heat exchanger(s) within the product at the product's maximum rated air flow that is less than or equal to 200Pa across each side, tested in compliance with EN308 or equivalent.	Official and published manufacturer's technical data sheet or brochure that demonstrates compliance with the requirements of the condition.

## Important Notes to Product Providers

### General

There should be a clear link between all supporting documentation supplied and the product being submitted. This will typically take the form of a product code or product name that can be cross referenced between the submitted product and relevant supporting documentation. If product codes / names have been changed since publication of the supporting documentation, then official evidence of this must be provided with the supporting documentation supplied.

Any deviation from these requirements will result in the supporting documentation not being considered adequate for the purposes of demonstrating compliance with the criteria conditions. This will in turn delay the submission and/or result in the product not being considered eligible.

Where the ACA criteria or help documentation reference compliance to appropriate rather than specific standards, the onus is on the product provider to ensure that supporting documentation supplied references recognised standards that apply to the submitted product, i.e. the product must be covered under the scope of a recognised standard.

If any product submitted is later found not to meet the performance or specification criteria, then this product will cease to be considered eligible for the ACA.

**Note:** When supplying the supporting documentation through the online process you must ensure that the correct page number(s) of the document is referenced when compliance with the relevant condition is being demonstrated. An explanatory note should also be given where more than one page number is referenced.

### Test Report

A test report must comprise of the following elements:

An outline of the complete test including introduction, details on test conditions, the specific model details of the product tested, the steps taken in the test, the results, graphical representations, and a conclusion. All documents should be on headed paper and the document should be officially signed off. **All documentation must be in English**, or include adequate translation.

### Certification

Where certificates are provided, all tests must be carried out by an organisation that is accredited by a national accreditation body recognised via the European Cooperation for Accreditation (preferred) or the International Accreditation Forum. **All documentation must be in English**, or include adequate translation.

### Scientific Equivalence

Some ACA criteria conditions allow for scientifically equivalent tests and/or standards to be used. In the event that a product has not been designed, manufactured or tested to the specific standard named, then documentation relating to an equivalent internationally recognised standard may be used (where the phrase 'Or scientific

equivalent' is included in the ACA condition or help documentation). In such applications, the onus will be on the product submitter to demonstrate satisfactory equivalence of the standards. However, submissions which reference such supporting documentation may take longer to process, and if the product provider does not provide satisfactory evidence of equivalence, then the product will not be considered eligible for the ACA. **All documentation must be in English**, or include adequate translation.

**Note:** Where specific standards are cited in a condition or in the ACA help documentation, then documentation demonstrating that the relevant products have been designed, manufactured or tested to these specific standards is preferred. Scientific equivalence is considered the exception rather than the norm.

### **Representative testing**

Where test information is required for a range of technically similar products (e.g. configurations of one base product) then in exceptional instances a form of representative testing may be utilised once agreed in advance with SEI. Such testing is where only representative products are tested from a technically similar group or range of products. Provided a clear correlation can be demonstrated between the tested product and technically similar non-tested product, and that such a correlation clearly demonstrates the compliance of the non-tested product, representative testing may form an acceptable basis for supporting documentation.

**Note:** Where representative testing is used for a group or range of products, if the tested or representative product is removed from the list of eligible products then all related products are also removed.