

Accelerated Capital Allowances Eligibility Criteria

Category: Motors and Drives

Technology: AC Induction Motors

An AC Induction Motor is an asynchronous electric motor that meets high efficiency standards. High efficiency AC induction motors are typically designed and constructed in such a manner as to reduce load losses (copper losses, rotor and stray load losses) and standing losses which are independent of the load (iron core and windage & friction losses). They can be considered either as standalone motors or as part of other equipment.

Eligibility criteria

In order to be included on the ACA Specified List, an AC induction motor must meet *all* of the 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.

No.	Condition
1.	Be a totally enclosed 3-phase induction motor with a power rating of greater than or equal to 1.1 kW.
2.	Meet the efficiency requirements listed on Table 1. according to IEC 60034-2-1 "Rotating Electrical machines - Standard methods for determining losses and efficiency of rotating electrical machinery from tests", or scientific equivalent.
3.	All equipment and/or components must be CE-marked as required by the specific EU directive(s).
4.	Appropriate operating & maintenance manuals must be available to the end-user in order to optimise the achievement of any potential energy efficiency gains.

TABLE 1 – Minimum Efficiency Criteria for Motors:

Power (kW)	2 Pole Efficiency % at Full load (50Hz)	4 Pole Efficiency % at Full load (50Hz)	6 Pole Efficiency % at Full load (50Hz)
1.1	82.7	84.1	81.0
1.5	84.2	85.3	82.5
2.2	85.9	86.7	84.3
3	87.1	87.7	85.6
4	88.1	88.6	86.8
5.5	89.2	89.6	88.0
7.5	90.1	90.4	89.1
11	91.2	91.4	90.3
15	91.9	92.1	91.2
18.5	92.4	92.6	91.7
22	92.7	93.0	92.2
30	93.3	93.6	92.9
37	93.7	93.9	93.3
45	94.0	94.2	93.7
55	94.3	94.6	94.1
75	94.7	95.0	94.6
90	95.0	95.2	94.9
110	95.2	95.4	95.1
132	95.4	95.6	95.4
160	95.6	95.8	95.6
200	95.8	96.0	95.8
375	95.8	96.0	95.8
>=400	96.0	96.0	96.0

Notes:

1. Minimum efficiencies for 2-, 4- and 6-pole motors in the range 1.1kW to 375kW correspond to those for the IE3 premium efficiency class defined by the IEC 60034-30 standard.
2. For motors with more than 6 poles, the minimum efficiency criteria for 6-pole motors above shall apply.
3. Motors must be tested in accordance with IEC 60034-2-1 or scientific equivalent, where additional load losses are determined using low uncertainty methods.
4. Where a particular motor size is not listed, the required minimum efficiency level for the next size up must be met.

Testing for motors rated 400 kW and above must be certified by a body qualified and approved to test to IEC 60034-2-1 standard or equivalent. Detailed test results must be submitted and these results must be to the reasonable satisfaction of the Sustainable Energy Authority of Ireland

----- *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

NOTE: 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 help you to provide (a) product details and (b) the required supporting documentation.

All information contained in 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:

Size of Motor, Output rating (kW)

The output power rating in kW of the motor is required as a value for the product submission. It must be entered as whole number only (do not include kW 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.

Efficiency

The efficiency of the motor 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.

Number of Poles

As part of the product submission you must select which type of number of poles your product has. It must be entered as number only (do not include units or spaces).

Supporting documentation required

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

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.

No.	Condition	Supporting Documentation Requirements
1.	Be a totally enclosed 3-phase induction motor with a power rating of greater than or equal to 1.1 kW.	<p>Official and published manufacturer's technical data sheet or brochure that demonstrates compliance with the requirements of the condition.</p> <p>The submitted documentation should confirm that the product is an AC induction motor and that its rated output is greater than 1.1kW</p>
2.	Meet the efficiency requirements listed on Table 1. according to IEC 60034-2-1 "Rotating Electrical machines - Standard methods for determining losses and efficiency of rotating electrical machinery from tests", or scientific equivalent.	<p>Official and published manufacturer's technical data sheet or brochure that shows the efficiency value of the motor at full load conforms with the conditions requirements, and that it is according to the standard IEC 60034-2-1.</p>
3.	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>OR</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>
4.	Appropriate operating & maintenance manuals must be available to the end-user in order to optimise the achievement of any potential energy efficiency gains.	<p>A copy of an official signed declaration on headed paper which confirms that the appropriate operating and maintenance manuals are provided. Where possible, a link to technical documentation available to download online should be included.</p> <p>NB: A signed declaration is required to comply with this condition in all cases. Submitting copies of user manuals is not sufficient and not required by this condition.</p>

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.