



EQ Window Energy Labelling





General information

EQ Window Energy Labelling is a national voluntary window rating and the aim is to facilitate the choice of energy-efficient windows. The EU's "Energy Labelling Directive 92/75/EEC" for electrical appliances has been extended to products that indirectly consume energy, "Energy-related products. Windows are one of the products that in the near future will be included in the mandatory energy labelling scheme. In the meantime, window manufacturers have introduced a voluntary, accredited, energy labelling system for windows.

Appliances such as refrigerators, washing machines and dishwashers have been labelled for many years and have facilitated the selection of energy efficient products. Given that the window affects energy consumption in a property in substantial amount, energy rated and labelled windows will facilitate energy efficient construction and refurbishment.

By law, the windows sold in Sweden must be CE marked from July 1, 2013 and follow the product standard EN 14351-1. According to the standard, the U-value for windows has to be verified according to one of the following options:

- EN ISO 10077-1 (Simplified calculation)
- EN ISO 10077-1 and EN ISO 10077-2 (detailed calculation)
- EN ISO 12567-1 (Hotbox test)

The U-value does not provide a complete picture of overall energy efficiency. The building's energy storage capacity and the ability to control heat input and reduce the indoor temperature also affects the energy savings, while the U-value only shows the transmission loss through the window construction. Climate properties vary significantly between northern and southern Sweden, between building types and orientation of these. The actual savings for a specific property can be calculated using a variety of computer programs and using the information found on the label. In addition to energy rating, the window manufacturers must provide Declaration of performance for CE marked windows.

Requirements

The framework for windows is for those covered by the product standard EN 14351-1 and are intended to be installed in vertical facades.

1. Basic performance requirements

In accordance with the Construction Products Regulation (EU) No 305/2011, CPR, building products must have a Declaration of Performance, DoP.

Windows shall be CE marked according to EN 14351-1 for air tightness, U-value, g-value and LT value. Multiple glazing units shall be CE marked according to EN 1279 with respect to the g-value and LT-value.

Reported values shall be measured or reviewed by the Notified testing body under the rules for CE marking.



1.1 Energy Rating

Window reported U-value and air leakage determines energy class according to the following table:

Energy class	Max U-value	Max air leakage
A	0,70	1)
B	0,80	1)
C	0,90	1)
D	1,0	1)
E	1,1	2)
F	1,2	2)
G	1,3	2)

- 1) Maximum one third of the permissible air leakage according to Air tightness class 4, see section 1.3.
- 2) Air permeability class 4 according to EN-14351-1

1.2 Radiation Properties

The glass g-value (solar transmittance) and LT-value (daylight transmittance) shall be calculated in accordance with EN 410.

1.3 Airtightness

Tested according to EN 1026. Requirements: at least class 4 according to EN 12207 with differential pressure up to 600 Pa for energy classes E-G. For energy classes A-D, the air leakage must be less than a third of the permissible air leakage for Class 4.

The reference for the air density is defined as the maximum permissible air leakage at the reference pressure of 100 Pa. For other pressure steps, the following equation will apply:

$$Q = Q_{100} \left(\frac{P}{100} \right)^{2/3}$$

where Q_{100} = maximum air leakage at 100 Pa
 Q = air leakage at current air pressure

Maximum permissible air leakage at reference pressure 100 Pa

Class A-D (Q_{100}) 1 m³/h, m²
Class E-G (Q_{100}) 3 m³/h, m²



1.4 Glass and Glazing

Installed multiple glazing units must be CE marked.

g and LT values for the glass combinations shall be calculated according to EN 410.

The U-value of the glass shall be calculated according to EN 673. The value must be presented in the declaration of performance for CE marking.

1.5 Mounting

Mounting instruction shall be available to the consumer. It shall accompany each delivery of windows and also be published on the manufacturer's website. The description shall include at least:

- Fitting into the wall
- Air tightening
- Caulking of window
- drainage
- Mounting of window hardware

The above points are a clarification of the requirements of EN 14351-1.

2. Certificate of Conformity

The manufacturer shall present a certificate as Annex 1. The certificate must accompany each supplied window.

3. Certification

Certification under these rules shall be carried out by an accredited product certification body that meets EN 45011/ISO 17065.

3.1 Application for a Certificate

The application for certification shall be made in writing to the product certification body and be accompanied by documentation in the form of declaration of performance, DoP, product descriptions and labelling proposals.

3.1.1 Declaration of performance

Performance of window construction and glazing shall be presented in DoP in accordance with the Construction Products Regulation, CPR.

3.1.2 Product Description

The window construction must be explained in details so that the design is clearly understood. Drawings must include all components, the various profile sections, materials and dimensions. All fittings, seals, and other details and the type of material and its location shall be reported. The type of glazing, properties of the glass, spacers, gas filling, coatings etc. must also be included in the documentation.



3.1.3 Labelling

Energy rated windows shall have a permanent label made of weather resistant material. The label must be fixed to any window that is delivered to the customer. The label with the correct energy rating must be on the operable windows on the side of the frame or sash. For fixed windows, the label is mounted in a discreet manner but still visible for inspection. The label shall contain the following information: Certificate number, name of product certification body that approved the energy rating, energy class. The label should contain the name and the unique product code unless proven otherwise by default.

3.2 Initial assessment

Initial assessment involves that the documentation according to section 3.1 is reviewed by product certification body. This may lead to additional tests or assessments need to be reported. If doubts exist about the reported performance, product certification body is entitled to request underlying documentation for CE Marking for review.

3.3 Certificates

Product Certification Body issues certificates when evaluation has verified that the product meets the current requirements. Validity of the certificate is based on the conditions of continued compliance. Certificates may not be transferred and the validity period is five years.

3.4 Responsibility

The holder of the certificate is responsible that the products covered by the certificate and marked, also meet the requirements of the current certificate. Product certification body has no responsibility for certified products.

Product certification body is responsible for that the certification is carried out with required competence according to current rules and conditions for accreditation.

3.5 Revocation of Certificate

Product certification body can temporarily or permanently, revoke certificates if:

- 1) the product no longer meets the requirements
- 2) error in the certificate revealed
- 3) Failing grades observed in supervisory control
- 4) The competent authority urges product certification body to do so
- 5) The product is not suitable for its purpose or may cause damage or inconvenience
- 6) change in the laws, regulations or similar
- 7) The holder of the certificate used the certificate on or in connection with products that do not meet requirements or for products not covered by the certificate
- 8) fees are not paid within the prescribed period, the holder of the certificate has been declared bankrupt, has gone into liquidation or has assigned his business
- 9) The holder violated the terms of the certificate



If the certificate is revoked, the holder of the certificate is obliged to immediately cease all reference to the certificate in advertising or other publicity for the product and remove the labels of all products that are in stock, if the product certification body requires this.

At the revocation of certificates, due to improper labelling of products that do not meet the requirements of the certificate, the holder of the certificate shall pay all costs associated with getting the substandard products replaced with ones that meet the requirements of the certificate, if the product certification body requires this.

3.6 Amendment of products

The holder of the certificate is bound to, prior to any changes in design, materials or workmanship, inform the product certification body that determines if the change is such that it can be accepted without re-testing or assessment.

3.7 Supervisory Control

Product certification body is required to carry out spot-rate control for certified products. Normally this is done through the purchase of windows in the open market. Purchased window is compared to the product description and tested if necessary, according to:

EN 14351-1, 4.12, 4.13 and 4.14

During the validity period of the respective product certification, shall from each manufacturer at least one window be checked. In case the manufacturer has many different products / designs can the scope be extended, depending on the number of designs, differences etc. In case of failure the product certification body shall inform the manufacturer and request a written explanation of the discrepancy. Product certification body decides on further action, such as retesting or cancellation of certificates.

Any tests will be done by an accredited testing laboratory.

3.8 Confidentiality

Product certification body is required to publish information on certified products and publish the decision to revoke the license and misuse of certificates.

Other information is confidential.

3.9 Charges

Fees for certificates shall be paid by the applicant to the product certification body. Fee for supervisory control shall be charged the certificate holder after each check has been carried out.

10.3 Appeal

Appeal of the product certification body's decision shall be made in writing to the product certification body. Decision on action, as a result of an appeal, is taken by the product certification body's board or equivalent.



4. References

EN 14351-1:2006 + A1: 2010 - Product standard windows and pedestrian doors

EN 1026:2000 – Air permeability – Test method

EN 12207:2000 – Air permeability - Classification

EN ISO 10077-1:2006 – Calculation of thermal transmittance – Part 1 General

EN ISO 10077-2 – Calculation of thermal transmittance – Part 2: Numerical method for frames

EN ISO 12567-1:2010 - Determination of thermal transmittance by hot box method – Part 1

EN 1279-5:2005+A2:2010 – Insulating glass units – Part 5: Evaluation of conformity

EN 410:2011 – Determination of luminous and solar characteristics of glazing

European parliament and council regulation number 305/2011 Construction Products Regulation, (CPR)



Tillverkarintyg fönster / *Manufacturer's certificate windows*

Härmed intygas att följande gäller för den levererade produkten:

This is to certify that for the delivered product:

Unikt produktnamn / *Unique product name*

.....

Energiklass / *Energy class*

.....

Värmeövergångskoefficient, U-värde / *Thermal transmittance, U-value*

.....W/m²K

Dagsljustransmittans, LT-värde / *Light transmittance, LT-value*

.....%

Solenergitransmittans, g-värde / *Solar energy transmittance, g-value*

.....%

Luftläckage, klass 1 eller 3 / *Air permeability, class 1 or 3*

..... m³/h, m²

Certifieringsorgan (namn och ackrediteringsnr) / *Certification body (name and accreditation no.)*

.....

Tillverkarens namn och adress / *Name and contact address of the manufacturer*

.....

Undertecknat för tillverkaren av: / *Signed for and on behalf of the manufacturer by:*

.....

(namn och befattning) / *(name and function)*

.....

(ort och datum / *place and date*)

.....

(underskrift / *signature*)

Till denna ansökan bifogas även Bilaga 2 / *This application must also include Annex 2*

Prestandadeklaration för CE-märkning / *Declaration of performance for CE-marking*