



BuildingEQ-Symposium in Berlin, October 1, 2009

Implementing the EPBD in Different Member States: An Overview

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Certificate Germany

Operational Rating

- end energy
- calculation rules from the Federal Ministry for Construction
- classification by benchmarking

ENERGIEAUSWEIS für Nichtwohngebäude

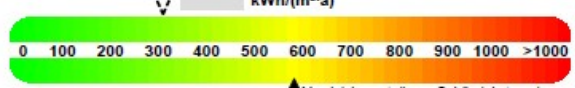
gemäß den §§ 16 ff. Energieeinsparverordnung

Gültig bis: Aushang

Gebäude		Gebäudefoto (freiwillig)
Hauptnutzung / Gebäudekategorie		
Sonderzone(n)		
Adresse		
Gebäudeteil		
Baujahr Gebäude		
Baujahr Wärmezeuger		
Baujahr Klimaanlage		
Nettogrundfläche		

Heizenergieverbrauchskennwert

Dieses Gebäude: kWh/(m²·a)

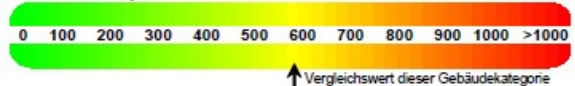


↑ Vergleichswert dieser Gebäudekategorie für Heizung und Warmwasser

Warmwasser enthalten

Stromverbrauchskennwert

Dieses Gebäude: kWh/(m²·a)



↑ Vergleichswert dieser Gebäudekategorie für Strom

Der Wert enthält den Stromverbrauch für
 Heizung Warmwasser Lüftung eingebaute Beleuchtung Kühlung Sonstiges:

Aussteller

Datum

Unterschrift des Ausstellers

Certificate Germany

Asset Rating

- ➔ primary energy
- ➔ new building code (DIN V 18599)
- ➔ classification by reference building
- ➔ zoning
- ➔ display

ENERGIEAUSWEIS für Nichtwohngebäude

gemäß den §§ 16 ff. Energieeinsparverordnung

Gültig bis:

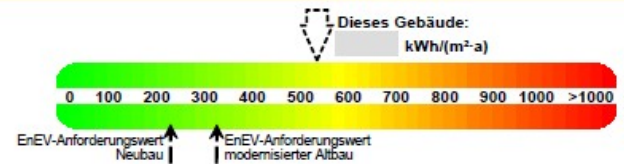
Aushang

Gebäude

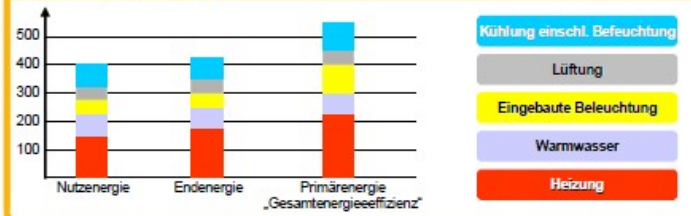
Hauptnutzung / Gebäudekategorie		Gebäudedefoto (freiwillig)
Sonderzone(n)		
Adresse		
Gebäudeteil		
Baujahr Gebäude		
Baujahr Wärmezeuger		
Baujahr Klimaanlage		
Nettogrundfläche		

Primärenergiebedarf

„Gesamtenergieeffizienz“



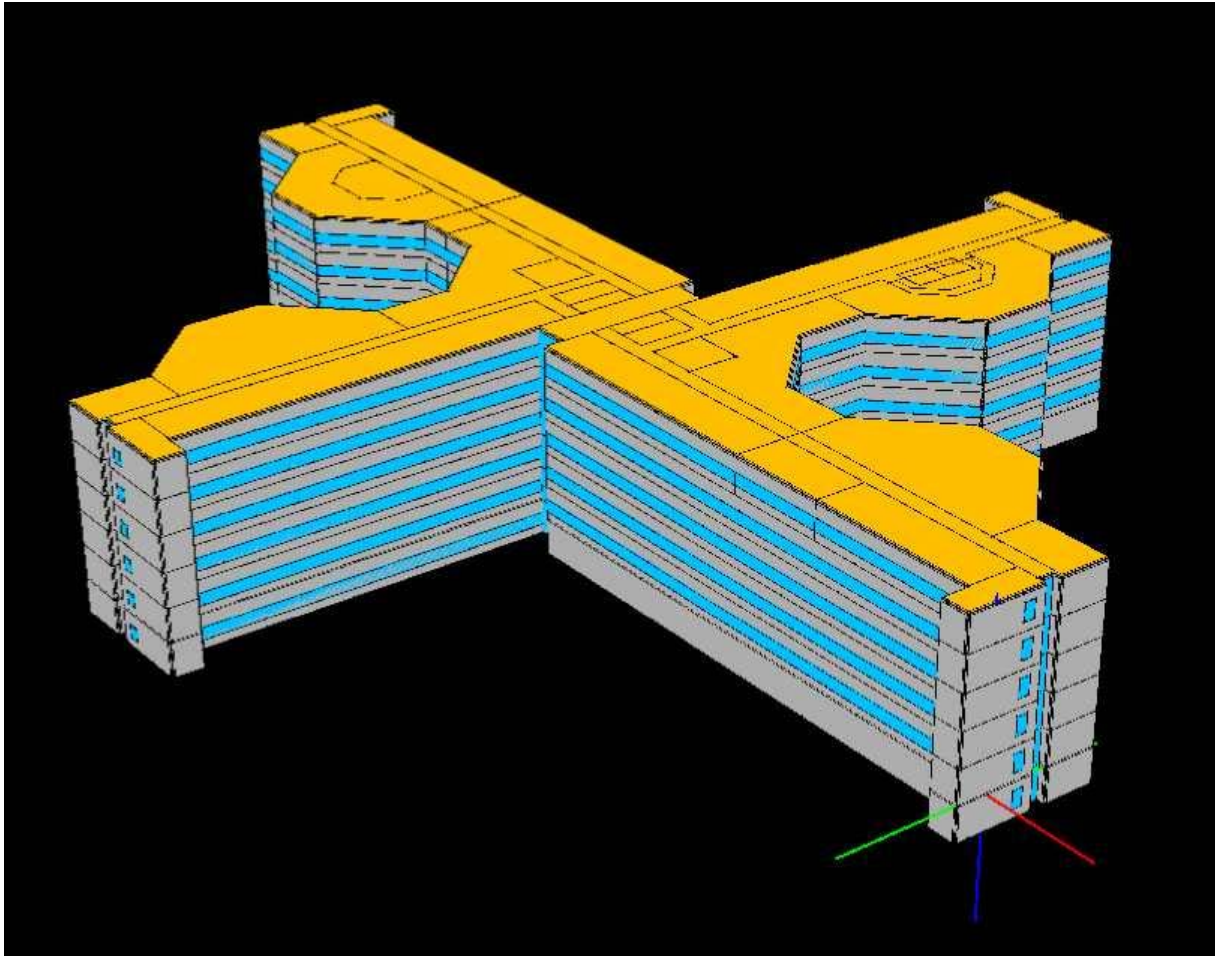
Aufteilung Energiebedarf



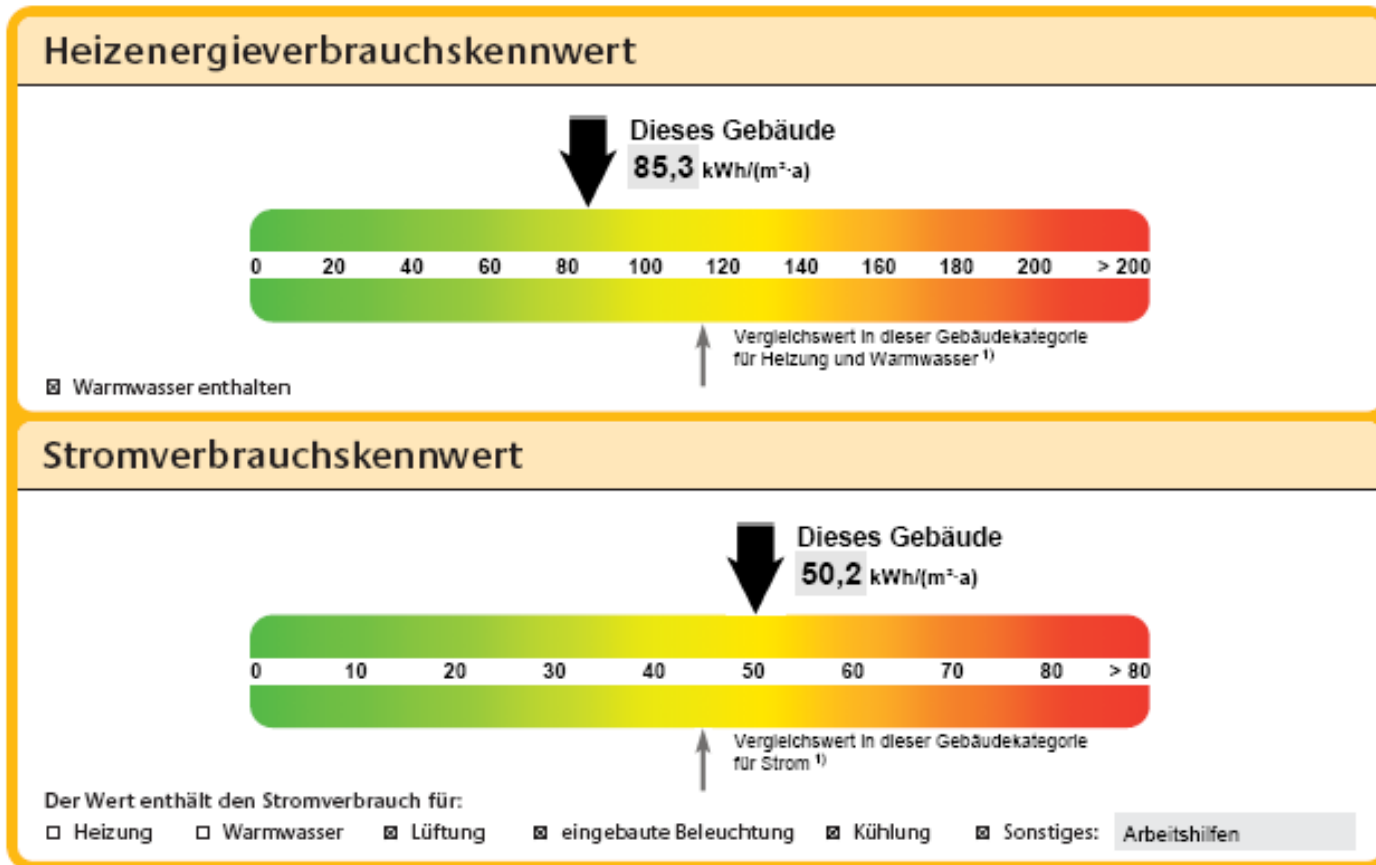
Aussteller

..... Datum Unterschrift des Ausstellers

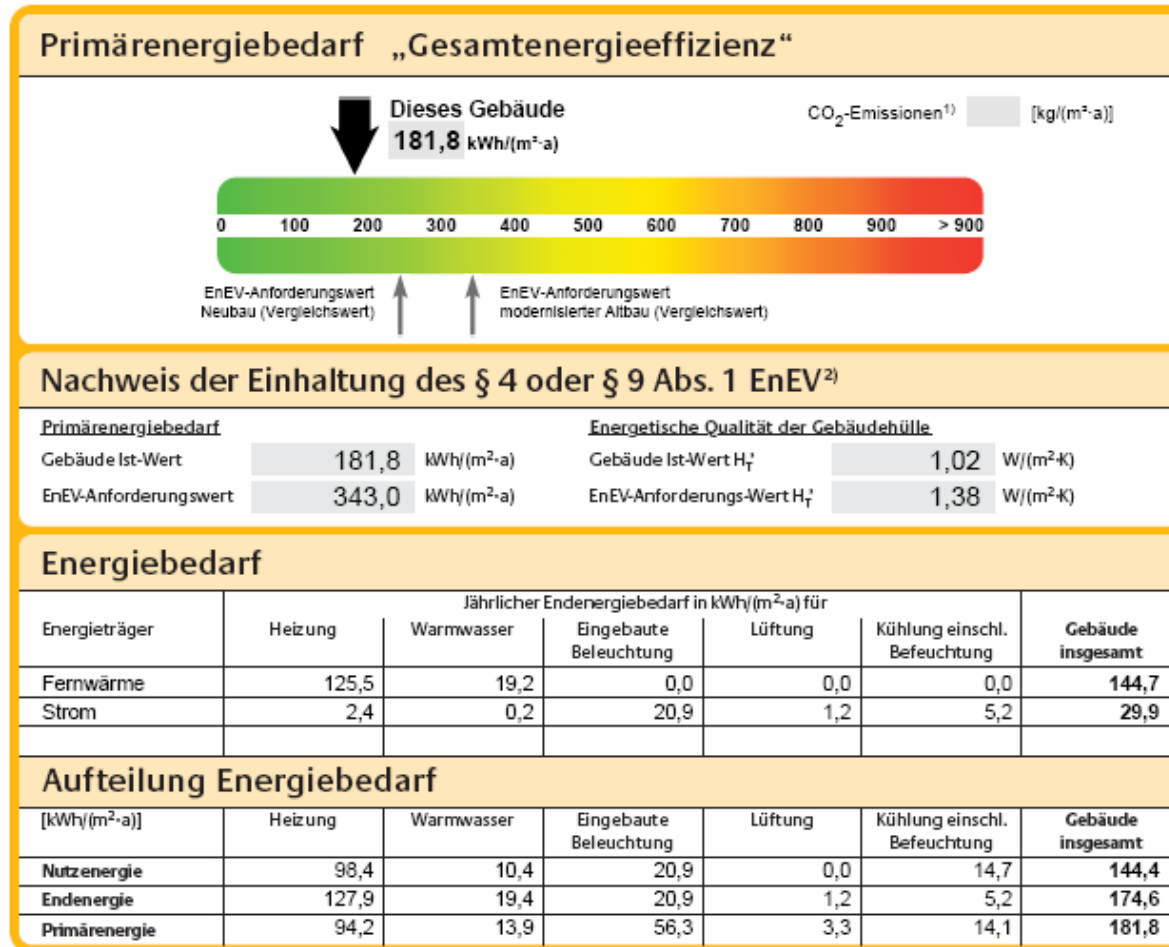
Kreuzgebäude, Thyssen-Krupp, Essen



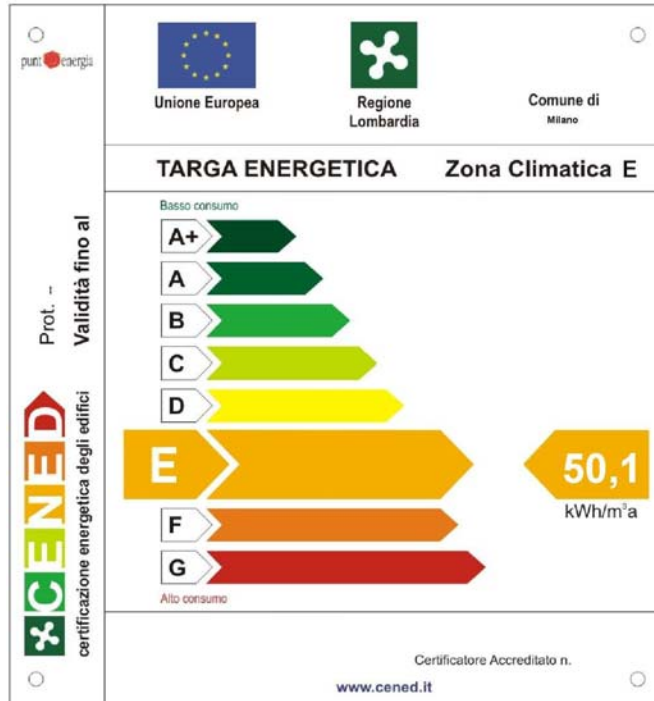
Certificate (o.r.) Kreuzgebäude



Certificate (a.r.) Kreuzgebäude



Certificate Italy











Implementation of EPBD on regional level

Example: Lombardy

- asset rating (a.r.)
- reference value: gross building volume
- classification dependent on 3 climate zones and A/V-ratio
- no calculation method for summer cooling
- lighting not considered
- no differentiation of building use in non-residential buildings

Tax benefits are granted for certification procedures, resulting in increased demand. This resulted in a lack of experts.

Certificate Finland

ET-luku	Vähän kuluttava	Rakennuksen ET-luokka
$ET \leq 120$	A 	
$121 \leq ET \leq 150$	B 	
$151 < ET < 190$	C 	
$191 \leq ET < 230$	D 	
$231 \leq ET \leq 300$	E 	
$301 \leq ET < 400$	F 	
$ET \geq 401$	G 	
<i>Paljon kuluttava</i>		

Finland

- operational rating based on end energy
- reference value: gross area
- no calculation of cooling
- classification with benchmarking
- 10 building categories
- valuable statistical data

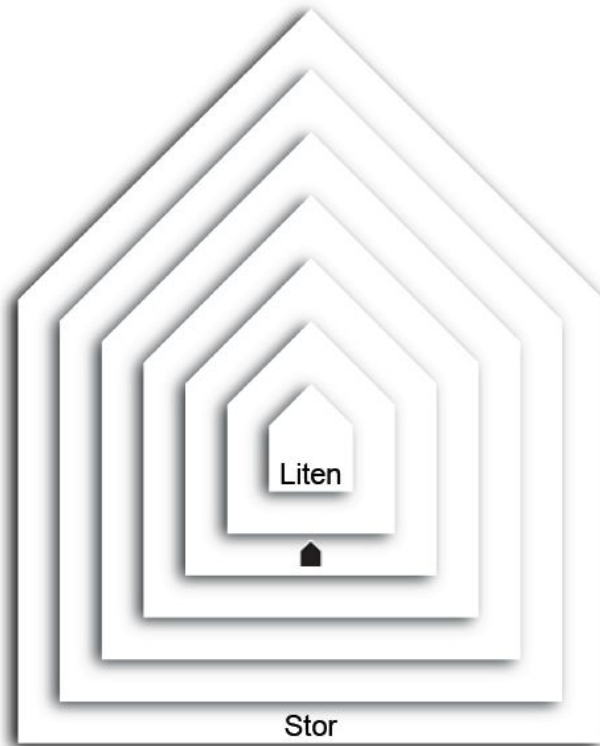
Building categories in Finland:

1. Small residential buildings (less than 6 residential units)
2. Large residential buildings
3. Office buildings
4. Commercial buildings
5. Educational buildings
6. Children's day care centres
7. Health care buildings
8. Public buildings of assembly
9. Indoor swimming pools
10. Other buildings

Certificates must be kept for 15 years in case of an inquiry by the Ministry.

Certificate in Sweden

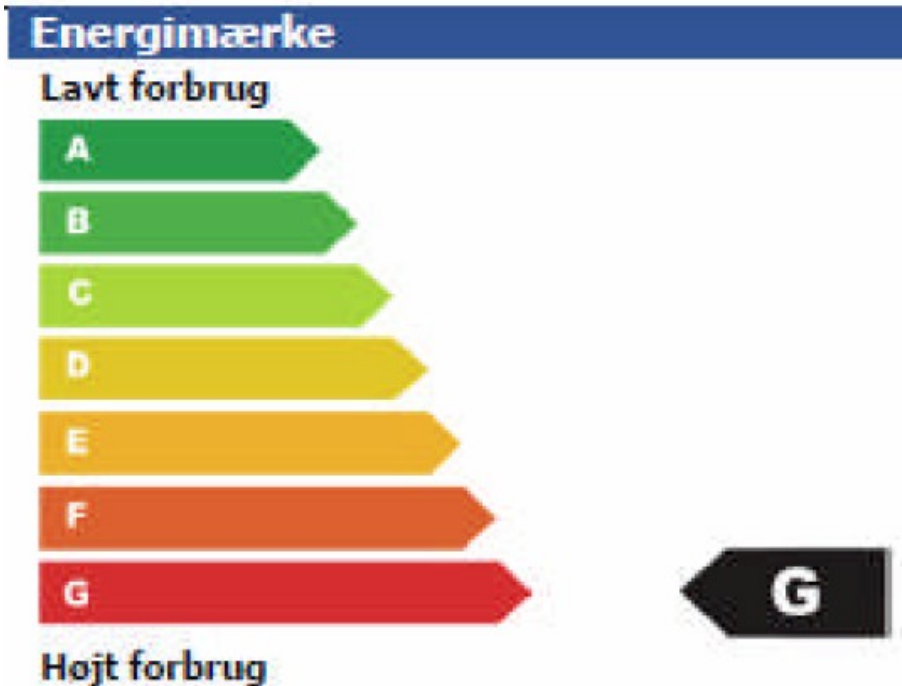
Husets energianvändning



Sweden

- operational rating based on end energy
- no calculation method defined
- classification in 7 steps, independent of building use
- no calculation of lighting
- net area (incl. area of inner walls)
- measured cooling energy is added to reference value

Certificate in Denmark



- asset rating
- lighting included in non-residential buildings
- new buildings must achieve Class B
- Class A is divided into Class A1 and A2
- gross heated floor area
- central database

Certificate in Denmark

Forslag til forbedringer	Årlig besparelse i energienheder	Årlig besparelse i kr. inkl. moms	Skønnet investering inkl. moms	Tilbagebetalingstid
2 Indvendig isolering af ydervægge.	1317 liter Fyringsgasolie , 67 kWh el	13040 kr.	90000 kr.	6.9 år
3 Efterisolering af loft med 350 mm mineraluld	457 liter Fyringsgasolie , 23 kWh el	4530 kr.	37500 kr.	8.3 år
4 Udskiftning til energiruder. Ny isoleret dør.	378 liter Fyringsgasolie	3740 kr.	63200 kr.	16.9 år
5 Ny kondenserende oliekedel.	1064 liter Fyringsgasolie , 272 kWh el	10970 kr.	50751 kr.	4.6 år

Certificate in Belgium - 3 Regions

energieprestatiecertificaat bestaand gebouw met woonfunctie

certificaatnummer: NIS-44040-1960/vg/933

straat: Vaartstraat
nummer: 70 bus: []
postnummer: 9090 gemeente: Melle

bestemming: eengezinswoning
type: hallofen bebouwing

schijnwaarde: 13.123
berekend energieverbruik (kWh/m²/Jv)

280

Het berekende energieverbruik is een inschatting van de energiezuinigheid van de woning. Op de schaal wordt het energieverbruik van de woning vergeleken met het energieverbruik van alle bestaande gebouwen met woonfunctie.

0 50 100 150 200 250 300 350 400 450 500 550

zeer energiezuinig
lage energiekosten

met energiezuinig
hoge energiekosten

energiesdeskundige:

rechtvorm:	nv	naam:	Energieconsulentenbureau	KBO-nummer:	0999.999.999
voornaam:	Kris	achternaam:	Heylen	erkenningcode:	EI 01234
straat:	Poststraat			nummer:	333 bus:
postnummer:	3000	gemeente:	Leuven		

Ik verklaar dat alle gegevens op dit certificaat overeenstemmen met de werkelijkheid.

datum: 26-02-2009
handtekening:

[Handwritten signature]

Dit certificaat is geldig tot en met 26 februari 2019

Région de Bruxelles-Capitale

Bâtiment neuf

Rue + n° + brie
Code postal + localité

partie du bâtiment certifiée

Certificat valide jusqu'à: 10/11/2018

Performance énergétique

Très économe

Très énergivore

Consommation annuelle calculée [kWhEP/m ² /an]	256
dont consommation annuelle électrique [kWh/m ² /an]	65
et consommation annuelle en combustibles [kWh/m ² /an]	93

Niveau E	62
Niveau K	40
Emissions annuelles de CO ₂ par m ² [kg CO ₂ /m ²]	42

Le poste de consommation énergétique dans le local ou bâtiment certifié respecte-t-il les exigences en matière de consommation d'énergie ?

OUI / **NON**

Éclairage naturel	<input type="checkbox"/>	Éclairage naturel	<input type="checkbox"/>	Éclairage naturel	<input type="checkbox"/>	Éclairage naturel	<input type="checkbox"/>	Éclairage naturel	<input type="checkbox"/>
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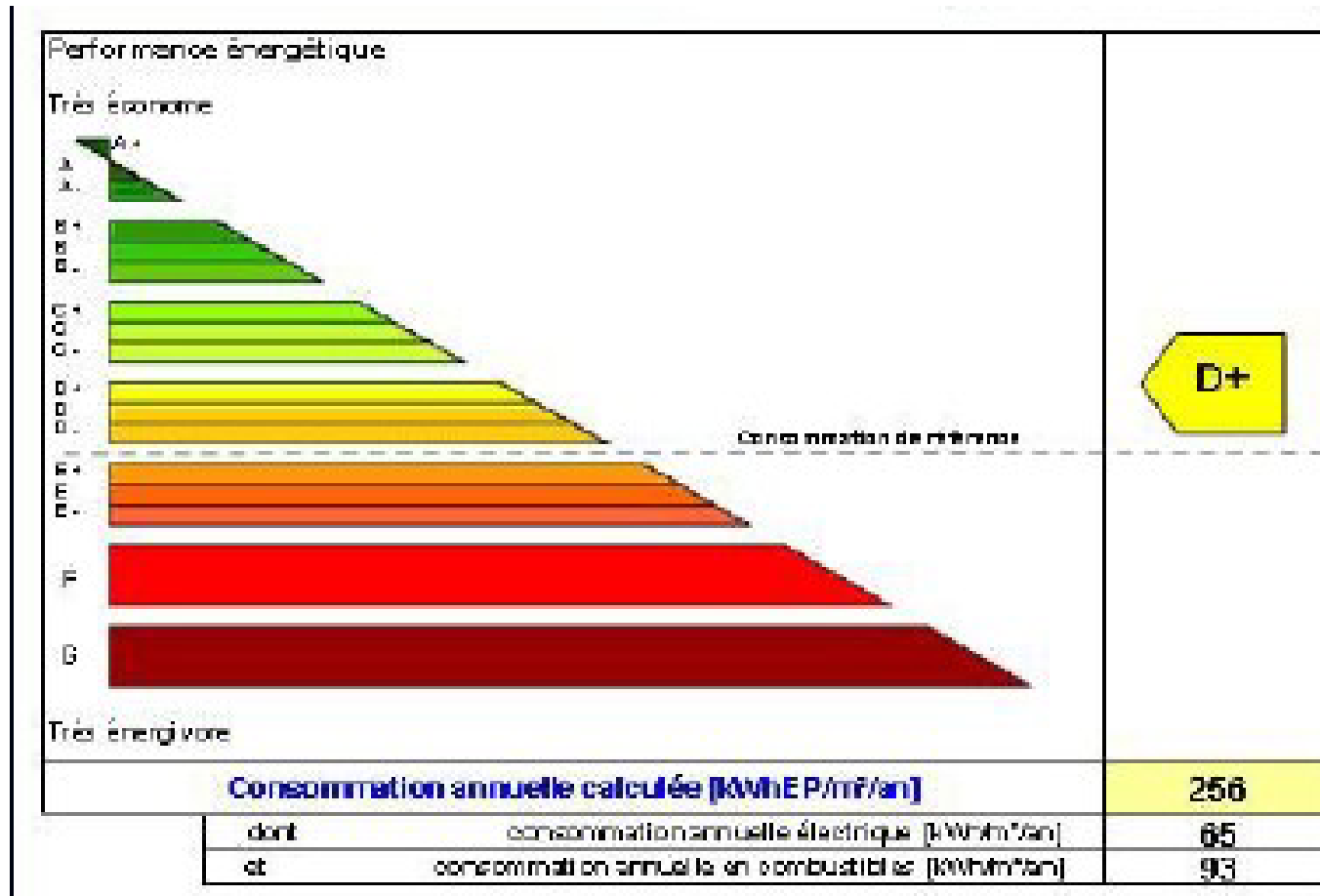
Delivrée le: 10/11/2008
Légalement: OFE - Bureau de la Région de Bruxelles-Capitale
Méthode: Bureau / services

Certificat n°: 0034219
Version: 1.0

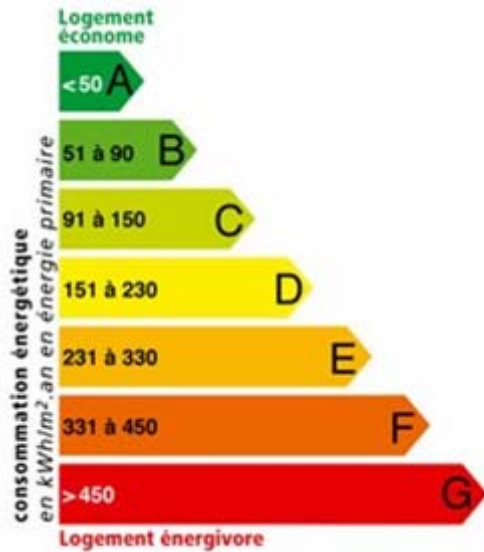
De plus, vérifiez aussi les PEC

Site: []
Mettre: []

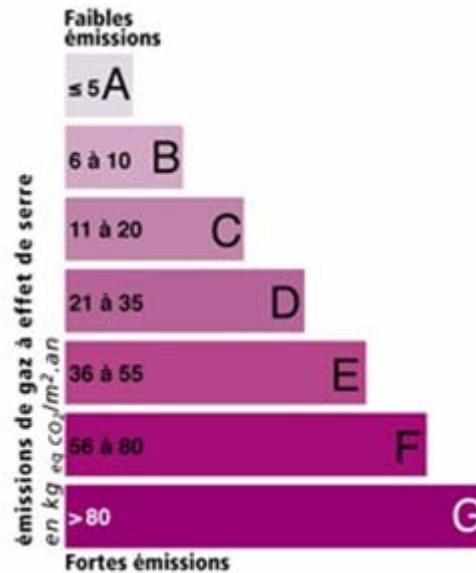
Certificate in Brussels



Certificate in France



primary energy



CO₂-emissions

- labels for primary energy and CO₂-emissions
- 3 types of building use
- operational rating for public buildings
- residential buildings > 1948 asset rating
- experts have to pass a test

Certificate in England and Wales

Energy Performance Operational Rating

This tells you how efficiently energy has been used in the building. The numbers do not represent actual units of energy consumed; they represent comparative energy efficiency. 100 would be typical for this kind of building.

More energy efficient

A 0-25

B 26-50

C 51-75

D 76-100

100 would be typical

E 101-125

108

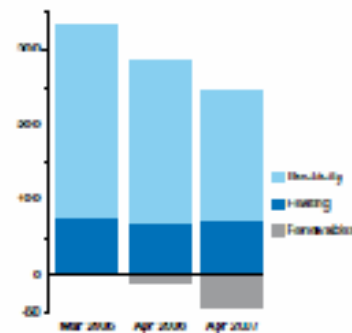
F 126-150

G Over 150

Less energy efficient

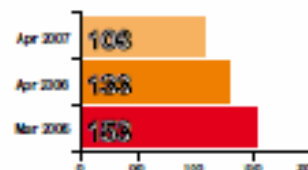
Total CO₂ Emissions

This tells you how much carbon dioxide the building emits. It shows tonnes per year of CO₂.



Previous Operational Ratings

This tells you how efficiently energy has been used in this building over the last three accounting periods.



- operational rating (OR)
- energy performance is shown as single CO₂ based index
- performance is compared to a hypothetical building.
- typical performance for that type of building would have an OR of 100.

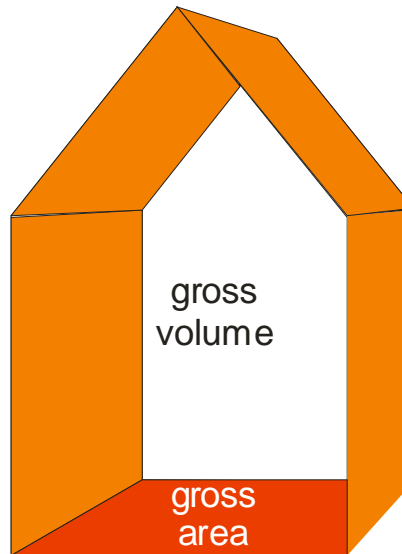
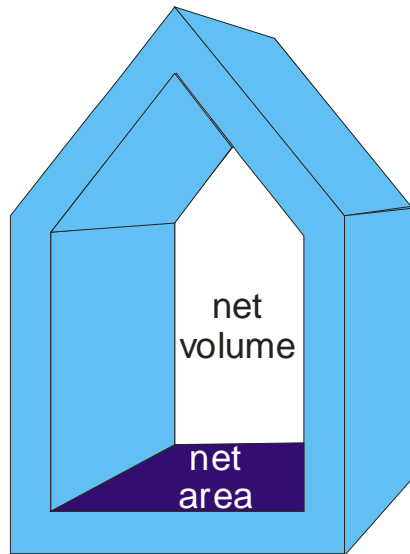
Asset or operational rating

Non-Residential Buildings

- Asset Rating, AR
- mostly for new buildings
- Cooling and lighting is often not considered

- Operational Rating, OR
mostly for existing buildings
- Differences exist as to what is considered

Geometry



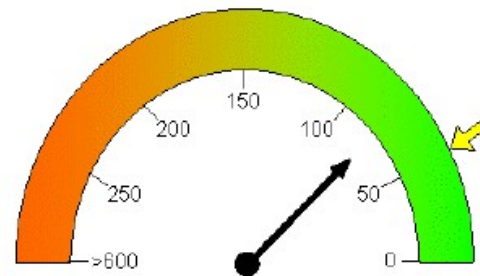
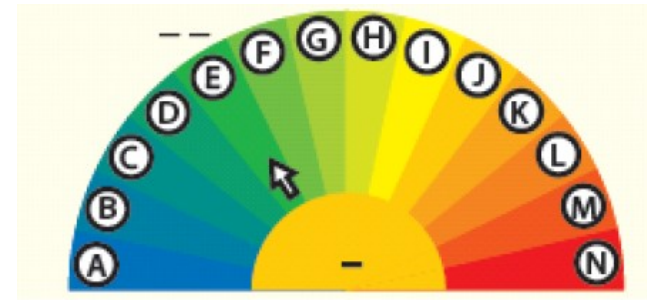
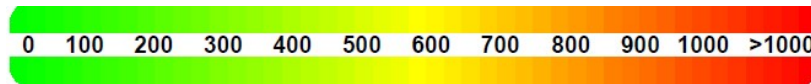
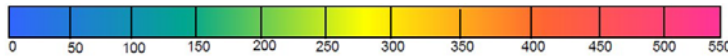
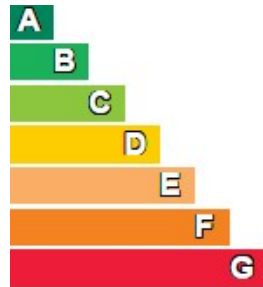
- Germany: net floor area
- Sweden: net floor area, area of inner walls included
- Italy: gross volume, net floor area for residential building or hotel
- Finland: gross area

Reference values

Comparative values (benchmarking)

	types of building category
■ France	3
■ Finland	10
■ Gemany	over 30

Labelling



Reference Parameter and considered technologies

	Germany	Finland	Italy	Sweden
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primary energy	X		X	
endenergy	X	X		X

heating	X	X	X	X
hot water	X	X	X	X
cooling	X	X	X ⁴⁾	X
air conditioning	X	X		X
lighting	X	X		
electrical equipment	X			
auxiliary electricity	X	X	X	X

Summery of the differences

- Asset Rating or Operational Rating
- Reference value for building geometry (net area, gross area or gross volume)
- Reference values, benchmarking
(from no divisions through to very differentiated divisions)
- Presentation of the label
- Reference value: Energy (primary energy, end energy)
- Energy techniques considered

Contact

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