

Title of the measure:	FIN6 Building code D7: Orders for boiler efficiency
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General description

Part D7 (in force since 1997) of the National Building Code of Finland (in force since 2003) brings the EU Council Directive 92/42 into force in Finland. These orders apply to new hot water boilers, which use liquid or gaseous fuel and which have nominal powers between 4-400kW. Exceptions are boilers,

- where can be used different fuels, including solid fuels
- which are flow heaters and used for hot water producing
- where can used fuels differing significantly from conventional liquid or gaseous fuels (such as industrial waste gas, biogas)
- for example stoves for heating a building, of which secondary use is water heating
- which are manufactured as a single device

Following orders are given concerning boiler efficiency:

- Efficiency of a normal boiler with a nominal power (Pn) needs to be $\geq 84 + 2 \log (Pn) \%$
when an average temperature of boiler water is 70°C
- Efficiency of a normal boiler with a 30 % partial power needs to be $\geq 80 + 3 \log (Pn) \%$
when an average temperature of boiler water is ≥ 50 °C
- Efficiency of a low temperature boiler with a nominal power Pn needs to be $\geq 87,5 + 1,5 \log (Pn) \%$
when an average temperature of boiler water is 70°C
- Efficiency of a low temperature boiler with a 30% partial power needs to be $\geq 87,5 + 1,5 \log (Pn) \%$
when an average temperature of boiler water is 40°C
- Efficiency of a gas using condenser boiler with a nominal power Pn needs to be $\geq 91 + 1 \log (Pn) \%$
when an average temperature of boiler water is 70°C
- Efficiency of a gas using condenser boiler with a 30% partial power needs to be $\geq 91 + 1 \log (Pn) \%$
when an average temperature of boiler water is 30°C

If a boiler is used both for space heating and hot water production, the ordinance affects only space heating.

A boiler with better efficiency than ordered for a normal boiler can be marked with an energy label. Table 1 presents the labelling system.

Table 1: Efficiency requirements for energy labels in boilers have to be fulfilled with both nominal power (Pn) and 30% partial power

Label	Required efficiency with a nominal power Pn, when an average temperature of boiler water is 70 °C, %	Required efficiency with a 30% partial power, when the average temperature of boiler water is ≥ 50 °C, %
*	$\geq 84 + 2 \log (Pn)$	$\geq 80 + 3 \log (Pn)$
**	$\geq 87 + 2 \log (Pn)$	$\geq 83 + 3 \log (Pn)$
***	$\geq 90 + 2 \log (Pn)$	$\geq 86 + 3 \log (Pn)$
****	$\geq 93 + 2 \log (Pn)$	$\geq 89 + 3 \log (Pn)$

Impact evaluation (methods and results)

Methods

Results

Ex-post evaluation	1995	2000		
direct CO ₂ (kt)				
Energy (TJ) (Fuels/Electricity)				
Ex-ante evaluation	1995	2000	2010	2020
direct CO ₂ (kt)				
Energy (TJ) (Fuels/Electricity)				

Measure Impact Level		
<input type="checkbox"/> low	<input type="checkbox"/> medium	<input type="checkbox"/> high

Interaction of measures

Historical data

References

<http://www.finlex.fi/data/normit/2216-d7.pdf> (in Finnish)