

## Guarantee Supplement

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### Module II A 2024 Additional guarantee conditions<sup>1)</sup>

This module is part of the Guarantee Supplement referred to in the applicable SWK regulation.

Heating system, tap water system and ventilation requirements.

#### Article 1 Heating system

The heating system<sup>2)</sup>, whether or not combined with a hot water system, of a House or Individually Owned Unit must meet the following conditions when all heating elements/air diffusers installed under the Contractor's responsibility are in operation simultaneously while the windows and doors are closed and the minimum required ventilation systems are being used:

- a. The temperature to be reached and maintained in the following rooms – to the extent that the Contractor has installed a heating element/air diffuser in them<sup>3)</sup> – when the outside temperature is  $-10^{\circ}\text{C}$  or higher must be at least:

Room	Temperature in $^{\circ}\text{C}$
staying area within the meaning of the Buildings Decree or the Bbl that is not divided into staying room, circulation area and/or storage room:	$22^{\circ}\text{C}$
staying rooms within the meaning of the Buildings Decree or the Bbl, such as living room, other rooms and kitchen:	$22^{\circ}\text{C}$
circulation areas within the meaning of the Buildings Decree or the Bbl, such as entrance hall, hallway, stairs and landing:	$18^{\circ}\text{C}$
attic in open communication with a circulation area such as entrance hall, hallway, stairs and landing:	$18^{\circ}\text{C}$
toilet room:	$18^{\circ}\text{C}$
shower and/or bathroom:	$22^{\circ}\text{C}$
indoor storeroom:	$15^{\circ}\text{C}$

- b. Rooms in which water pipes can freeze and in which there is space for washing appliances, heating systems and/or toilet and bathroom fixtures must be frost-free ( $5^{\circ}\text{C}$ ) under design conditions. A single water pipe in an unheated room must be protected from frost (either by heating the room or by means of trace heating).
- c. The power needed must be calculated in accordance with ISSO publication 51<sup>4)</sup> - "*Warmteverliesberekening voor woningen en woongebouwen*" (Heat loss calculation for homes and residential buildings).
- d. The design and installation of an individual ground energy system must comply with the statutory requirements, including the BRL 11000 requirements. Moreover, the calculation must be based on ISSO publication 73.

#### Article 2 Tap water system of a House or Individually Owned Unit

The tap water system (including taps)<sup>5)</sup> must meet the following requirements for each draw-off point, if installed:

- a. Hot water temperature at least  $55^{\circ}\text{C}$ <sup>6)</sup>, to be reached within 120 seconds.

- b. A hot water temperature of 45°C must be reached within 30 seconds of the hot water tap being opened.
- c. The values for the volume of hot water to be produced in litres per minute, as well as for the product of the volume in litres per minute and the temperature in degrees centigrade of the hot water drawn from the draw-off point when the draw-off points are used separately<sup>7)</sup> must be at least:

Draw-off point	l/min (minimum)	l/min (55°C)	Product
bath	5	6.4	350
shower	2.5	3.2	175
wash basin	2.5	3.2	175
kitchen worktop	2.5	3.2	175

#### Measurement of hot tap water waiting time

The water temperature that must be reached at the draw-off point within 30 seconds of the hot water tap being opened is 70% of the maximum increase in temperature, subject to a minimum of 45°C. The waiting time requirement does not apply to hot water connections for dishwashers, washing machines and bath mixers (without shower set).

Waiting times are to be measured as follows:

- Measurements should be taken for at least the hot water volumes mentioned in the table in Article 1.2, which volumes are based on a minimum working pressure of 100 kPa.
- The hot water system must be in operation/the boiler must be at temperature/the reheater must be switched on, such that the hot water temperature at the draw-off point is at least in accordance with the requirements of NEN 1006<sup>6)</sup>.
- Measurements should be taken without jet breakers and water-saving shower heads.
- No hot water must be drawn at least 30 minutes before the measurements are taken.
- Measurements should be taken while the home is heated to the design temperature.
- Waiting times should be measured at each separate draw-off point.
- Measurements should not be taken at thermostatically controlled mixer taps.

- d. When a hot water storage boiler is used, it must deliver the volumes mentioned in the table below at a hot water temperature of 55°C.

Number of persons	Gross boiler volume (in litres)					
	No shower heat recovery		With shower heat recovery drain		With shower heat recovery pipe	
	shower	bath	shower	bath	shower	bath
1 and 2	107	162	82	150	66	142
3	148	203	111	179	87	162
4	171	226	128	193	99	175
5	198	254	149	214	116	192
6	226	281	170	235	134	209
per extra person	27	27	21	21	17	17

These volumes are based on the following parameters:

- Temperature of 55°C to be reached each day.
- When a storage tank is set to a different temperature, the above-mentioned values must be adjusted based on a supply of cold water of 10°C. If the water temperature is set at 60°C, for example, the adjustment factor is  $(55-10)/(60-10)=0.9$ .
- A boiler with a net volume of 80%.  
If the supplier claims that the boiler's net volume is greater than 80%, this must be proved on the basis of a standardized measurement. If so desired, the net volume can

also be calculated by drawing water at a mixing temperature of 40°C, a cold water temperature of 10°C and with a minimum volume of 6 l/min in case of tanks of up to 120 litres and 10 l/min in case of larger tanks (all in accordance with NEN-EN 16147).

By multiplying the quantity of water drawn that is hotter than 40°C by 30/45 (conversion to 55°C) and then multiplying the result by 100/80 (conversion to net volume) the outcome can be checked against the gross volume shown in the table.

- The number of persons must be equal to the number of bedrooms in the home + 1.
- The table assumes a boiler heating time of between 1 and 8 hours (the daily storage). The volume of the boiler may be reduced by 1% (once) for each minute that the heating time is shorter than 1 hour. The heating time should be measured as the time needed to heat water from 10°C to 55°C (in case of a heat pump exclusive of the electrical element).
- The maximum time needed to heat water to 55°C is 8 hours.
- If the heating time exceeds 8 hours, the volume of the boiler must be 50% greater.

Explanation of these assumptions:

- The volumes are such that they should meet the reasonable hot water demand of a household.
- The volumes are based on one shower daily per person for approximately 8 minutes using 6 l/min at a water temperature of 38°C.
- The figures for baths are based on bathtubs with a capacity of 200 litres filled with 114 litres of mixed water.
- If it is known in advance that the home will be fitted and handed over with bathroom fixtures that use more than the usual quantities of hot water (such as large bathtubs and rain showers), the hot water capacity must be increased accordingly.
- A second bathroom has no consequences for the minimum capacity of the boiler, as the capacity has been calculated on the basis of the number of persons.

## Article 3 Ventilation

In addition to the ventilation requirements set out in Chapter 3, Sections 3.6 and 3.7, of the Buildings Decree<sup>8)</sup> and the corresponding Bbl ventilation requirements<sup>8)</sup>, the following rooms must be fitted with natural/mechanical ventilation systems with the capacity mentioned:

- Room with space for a washing machine and/or tumble dryer: 7 dm<sup>3</sup>/s
- Storeroom (not being a staircase cupboard): at least 7 dm<sup>3</sup>/s.

The sound level of the ventilation system is determined on the basis of the minimum ventilation capacity required for a room in accordance with the Buildings Decree<sup>8)</sup> and/or the Bbl<sup>8)</sup>.

## Notes

- 1) GIW-ISSO publication 2008 can serve as a guideline for the SWK requirements set out in Articles 1 and 2 of this supplement.
- 2) Third party supplies of heat and/or hot (tap) water (such as district heating) and heating and/or hot tap water systems supplied and installed by third parties (such as energy companies) do not come under the Contractor's responsibility and are not covered by the guarantee.
- 3) The installation of a heat emission system in any room is a matter to be agreed between the parties. The presence of a heating system in a House/Individually owned unit and/or in a communal area is not a minimum requirement under the Buildings Decree/Bbl and/or the applicable SWK regulation.
- 4) Any reference to ISSO publication 51 is a reference to the version of this standard as in force three months prior to the date of the application for the environmental and planning permit that has been obtained. The minimum capacity of the heat generator is the value calculated in accordance with ISSO publication 51 including the reserves for heat losses that do not occur always or simultaneously. In case of sustainable heat generation account must also be taken of the anticipated influence of source temperatures (air and brine/water) to be expected in the Netherlands.

- 5) Does not apply to thermostatically controlled mixer taps.
- 6) NEN 1006 provides the following with respect to the hot water temperature:
  - a) The temperature at the mixer or draw-off point in a home system without circulation must be at least 55°C in case of use in accordance with the design conditions.
  - b) The temperature at the mixer or draw-off point in a home system with circulation and in a communal pipe network must be at least 60°C in case of use in accordance with the design conditions.
  - c) In case of hot tap water facilities and hot tap water systems with circulation, the temperature of water in the return pipe/s must be at least 60°C in case of use in accordance with the design conditions.
- 7) If there are two or more bathrooms, the values mentioned for bath and shower also apply to simultaneous use of a maximum of two draw-off points for the bath and/or shower facilities situated in separate rooms, unless this is expressly excluded.
- 8) The Buildings Decree and the Bbl are available on the government website [www.rijksoverheid.nl](http://www.rijksoverheid.nl).