

SINTEF Building and Infrastructure confirms that

VICONNECT WC-Element Scandinavien built-in cistern

has been found to be fit for use in Norway and to meet the provisions regarding product documentation given in the regulation relating to the marketing of products for construction works (DOK) and regulations on technical requirements for building works (TEK), with the properties, fields of application and conditions for use as stated in this document

1. Holder of the approval

Sanitärtechnik Eisenberg GmbH
In der Wiesen 8
07607 Eisenberg
Germany

2. Product description

VICONNECT WC-Element Scandinavien built-in cistern (art. no. 92230900) consists of an installation frame with cistern and brackets for pipes and WC pan, see Fig. 1. The cistern consists of the front cover with flush button, an inlet valve and outlet valve. The cistern is delivered preinstalled with 3 litre and 6 litre flushing volumes. The cistern is isolated to avoid condensation. Table 1 shows components belonging to the system. The WC pan is not a part of the approval.

Table 1

Component specification for VICONNECT WC-Element Scandinavien

Component	Material	Test method
Installation frame	Powder coated steel	SS 820200
Cistern housing	PP	EN 14055
Cistern isolation	PS expanded	SS 820200
Cistern inlet valve	POM, PP og ABS	EN 14124
Cistern outlet valve	PP, ABS, PE og PC	EN 14055
Shut-off valve	Brass	EN 13828
Pipes and fittings	PE og PP	-
Threaded bolt for WC fixation	Zinc plated steel	SS 820200

3. Fields of application

VICONNECT WC-Element Scandinavien built-in cistern can be used in bathrooms and toilet rooms when concealed installation of the cistern is preferable. The system will fulfil the requirements regarding maintenance, exchangeability of the cistern, water leakage safety and detection of possible water leakages when installed as described in Chapter 6.



Fig. 1
VICONNECT WC-Element Scandinavien built-in cistern (art. no. 92230900)
(Source: Sanitärtechnik Eisenberg GmbH)

4. Properties

Load-carrying capacity

It is documented that the installation frame including WC pan withstand a load of 400 kg.

Exchangeability and maintenance through the front cover opening

It is possible to exchange, regulate and maintain the cistern's inlet and outlet valves through the front cover opening. The shut-off valve for the water supply inside the cistern is accessible through the front cover opening also.

Internal overflow

The cistern outlet valve has an internal overflow. Possible water leakages from the cistern inlet valve or shut-off valve drains through the internal overflow and into the WC pan for visible detection.

Acoustic characteristics

The built-in cistern's acoustic characteristics depends on the structure of the surrounding walls, the drain opening, fixation of the installation frame and waste water pipe. The noise levels from technical installations shall be in accordance with limit values given in TEK and NS 8175.

5. Environmental aspects

Substances hazardous to health and environment

The product contains no hazardous substances with priority in quantities that pose any increased risk for human health and environment. Chemicals with priority include CMR, PBT or vPvB substances.

Effect on indoor environment

The product is not regarded as emitting any particles, gases or radiation that have a perceptible impact on the indoor climate, or to have any significant impact on health.

Waste treatment/recycling

The product shall be sorted as metal and residual waste. The product shall be delivered to an authorized waste treatment plant for material and energy recovery.

Environmental declaration

No environmental declaration (EPD) has been worked out for the product.

6. Special conditions for use and installation

General design consideration

Regulations on technical requirements for building works (TEK) require built-in cisterns to be installed in such a way that leakages shall be easily discovered and not damage other installations or building parts.

TEK requires that the built-in cistern be easily accessible after installation.

TEK requires that a possible water leakage from the built-in cistern shall lead to an automatic shut-off of the water supply in toilet rooms.

Projecting of built-in cisterns in wet room

SINTEF Building and Infrastructure recommends that the wet room membrane be located behind the cistern in such a way that leakage water doesn't result in wetting of neighboring constructions. See Fig. 2.

SINTEF Building and Infrastructure recommends a drain opening in the lower part (underneath the WC pan) of the front wall construction in such a way that leakage water can run down to the floor gully freely. See Fig. 2.

SINTEF Building and Infrastructure recommends that the cistern, included the installation frame, must be easily accessible for exchanging from inside the room it is installed in by installing a removeable moisture-resistant building board in front of the built-in cistern. The moisture-resistant building board shall be removable without damaging the membrane layer.

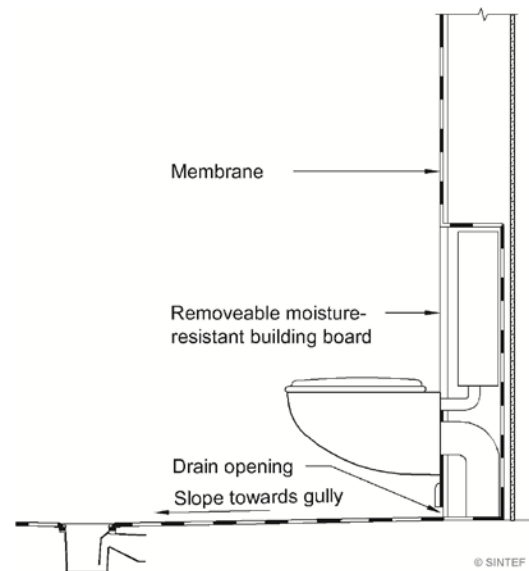


Fig. 2 Principle sketch – Installation in wet room (Source: SINTEF Building and Infrastructure)

Projecting of built-in cisterns in toilet room

SINTEF Building and Infrastructure recommends that built-in cistern in toilet room without floor gully and watertight floor, must be installed in prefabricated cassette with watertight surface (membrane) or in a void with watertight layer. See Fig. 3.

SINTEF Building and Infrastructure recommends that the prefabricated cassette has a tray which holds 7,5 litres of possible leakage water; the equivalent amount of water the cistern can hold.

SINTEF Building and Infrastructure recommends using a water leakage detector unit. The leakage detector unit's humidity sensing element must be installed inside the tray to obtain the best means of surveillance.

SINTEF Building and Infrastructure recommends that the built-in cisterns accessibility is done the same way as described for wet rooms.

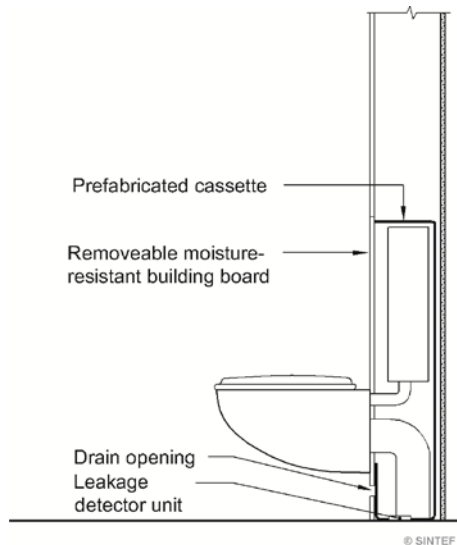


Fig. 3 Principle sketch – Installation in toilet room
(Source: SINTEF Building and Infrastructure)

Installation built-in cistern

VICONNECT WC-Element Scandinavian built-in cistern shall be installed as described in the installation instruction ref. no PM.191.63.0000.

Fixation of the installation frame

The installation frame can be fixed to the back wall, side wall or stud partitions. The installation frame should not penetrate the floor membrane. Any fixation points in floor or wall that penetrate the membrane shall be watertight.

Watertight penetrations in wet room

The waste water pipe from the WC pan and bolts for fixation of the installation frame shall be done in in such a way to maintain a watertight connection.

Connection of the WC pan

The WC pan used together with VICONNECT WC-Element Scandinavian built-in cistern shall comply with the requirements in EN 33.

Flushing requirements for WC pan

The WC pan used together with VICONNECT WC-Element Scandinavian built-in cistern shall comply with the requirements in EN 997.

Cistern water supply

The water supply to the cistern shall be guided through a protection-tube-bushing (pipe in tube system). The bushing delivered with the cistern shall be used. The bushing can be used for protection tubes with external diameter of 25 mm only.

Penetration of fire walls

Penetrating fire classified building walls or floors must not weaken the building construction's fire resistance. Penetration of fire walls shall be carried out as described in Building Research Design Sheet 520.342.

7. Factory production control

The product is produced by Sanitärtechnik Eisenberg GmbH, Eisenberg, Germany.

The holder of the approval is responsible for the factory production control to ensure that the product is produced in accordance with the preconditions applying to this approval.

The manufacturing of the product is subject to continuous surveillance by the factory production control in accordance with the contract regarding SINTEF Technical Approval.

The manufacturer has an internal quality system in accordance with ISO 9001.

8. Basis for the approval

The approval is based on a system assessment, documentation of the properties of the subcomponents, and type testing of a complete system as documented in the following test reports:

- SINTEF Building and Infrastructure. Report SBF2015F0098. Dated 3.3.2015.
- SINTEF Building and Infrastructure. Report SBF2016F0045. Dated 26.1.2016.
- TÜV. Report 7310427-02. Dated 3.5.2012
- CSTB. Report CS-15-001. Dated 20.1.2015

9. Marking

All packaging should be marked with the manufacturer's name, product name and production date. The approval mark for SINTEF Technical Approval No. 20667 may also be used.



Approval mark

10. Liability

The holder/manufacturer has sole product responsibility according to existing law. Claims resulting from the use of the product cannot be brought against SINTEF beyond the provisions of Norwegian Standard NS 8402

for SINTEF Building and Infrastructure

A handwritten signature in blue ink that reads "Hans Boye Skogstad". The signature is written in a cursive style with a blue color.

Hans Boye Skogstad
Approval Manager