SINTEF Technical Approval

TG 20797

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Revised:
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Valid until 01.11.2026
Provided listed on
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SINTEF confirms that

AQUA 22MECH NORDIC

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

Cersanit S.A.
Al. Solidarnosci 36
25-323 Kielce
Poland
www.cersanit.com

2. Product description

AQUA 22MECH NORDIC consists of an installation frame with cistern, for wall-mounted WC pans. The product is designed for concealed installation, see Fig. 1. The cistern has two flush volumes. The water from the cistern shall provide adequate cleaning of the WC pan, and ensure that toilet paper and faeces are flushed through the water trap and into the wastewater system. Table 1 shows the systems components. WC pans are not a part of the approval.

Table 1
Component specification for AQUA 22MECH NORDIC

Component	Material	Test method
Installation frame	S253 steel	SS 820200
Cistern	PP	EN 14055
Cistern inlet valve	POM-C	EN 14124
Cistern outlet valve	PP	EN 14055
Shut-off valve	Brass	EN 1213
Wastewater pipes and fittings	PP	-
Front panel	PP	-

3. Fields of application

AQUA 22MECH NORDIC built-in cistern can be used in bathrooms and toilet rooms when concealed installation of the cistern is preferable. When installed as described in Chapter 6, the system will fulfil the requirements regarding maintenance, exchangeability of the cistern, water leakage safety and detection of possible water leakages.

4. Properties

Load-carrying capacity
It is documented that the installation frame, including WC pan, withstand a load of 400 kg.

Fig. 1
Aqua 22MECH NORDIC
Figure: Cersanit S.A.

Exchangeability and maintenance through the front cover opening
It is possible to replace, 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 also accessible through the front cover opening.

Internal overflow
The cistern outlet valve has an internal overflow. Water leakages from the cistern inlet valve or shut-off valve drains through the internal overflow and into the WC pan.

Acoustic characteristics
The built-in cistern's acoustic characteristics depend on the structure of the surrounding walls, the drain opening and fixation of the installation frame and wastewater pipes. The noise levels from technical installations shall be in accordance with limit values given in TEK and NS 8175 *Acoustic conditions in buildings — Sound classification of various types of buildings*.

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Entreprise register: NO 919 303 808 MVA

Table 2
Properties of AQUA 22MECH NORDIC

Property	Value
Full flush volume [1)]	5,1 litres
Reduced flush volume [1)]	3,0 litres
Overflow – safety margin	≥ 20 mm
Horizontal distance between WC-pan fastening bolts	c/c 180 mm ± 1 mm c/c 230 mm ± 1 mm
Height adjustment range for WC-pan fastening bolts	Min. 330 mm Max. 530 mm
Distance between inlet and outlet for WC-pan	135 ± 3 mm
Shut-off valve thread dimensions	½" male
Condensation protection	The cistern has outside insulation of expanded polystyrene to prevent condensation
Connecting dimensions wastewater pipe	Ø 110 mm
Sideways adjustment range of installation frame, to compensate for floor slope	200 mm/m
Load-carrying capacity	≥ 4000 N

[1)] Flush volume is adjustable

5. Environmental aspects

Substances hazardous to health and environment
AQUA 22MECH NORDIC 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
AQUA 22MECH NORDIC 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
AQUA 22MECH NORDIC 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 issued for AQUA 22MECH NORDIC.

6. Special conditions for use and installation

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

SINTEF recommends that the wet room membrane be located behind the cistern in such a way that leakage water does not result in dampening of neighbouring constructions. See Fig. 2.

TEK requires that the built-in cistern be easily accessible for replacement and maintenance after installation.

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

SINTEF recommends that the cistern, including the installation frame, must be easily accessible for replacement from inside the room it is installed in. This can be accomplished 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. See Fig. 2

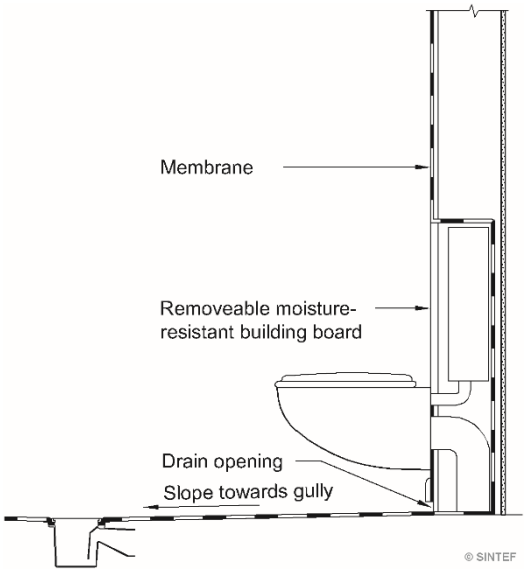

Fig. 2
Principle drawing – Installation in wet rooms

Design considerations for dry rooms
SINTEF recommends that built-in cisterns in dry rooms, for example toilet rooms without floor gully and watertight floor, are installed in a prefabricated watertight cassette or in a space with watertight membrane. See Fig. 3.

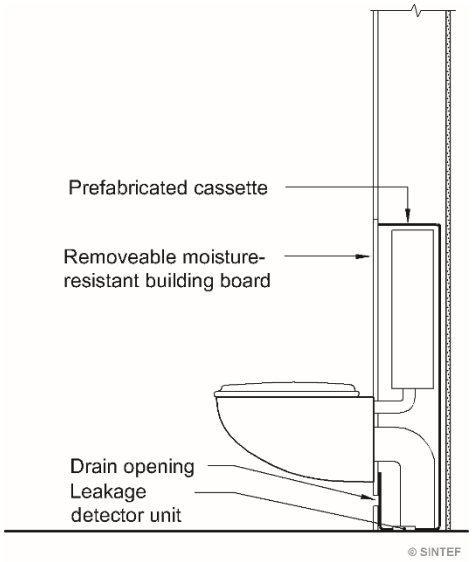

Fig. 3
Principle drawing – Installation in dry rooms
SINTEF recommends that the prefabricated cassette has a tray which can hold, at minimum, the same amount of water as the cistern; i.e., 5,1 litres.

TEK requires that leakage from the built-in cistern shall cause an automatic shut-off of the water supply.

SINTEF recommends using a water leak detector unit with automatic shut-off valve for this purpose. The leakage detector unit's humidity sensing element must be installed inside the tray to obtain the best means of surveillance. See Fig. 3.

To ensure accessibility of the built-in cistern in dry rooms, SINTEF recommends the same solution as for wet rooms.

Installation
The built-in cistern shall be installed in accordance with the manufacturer's installation instructions.

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 wastewater pipe from the WC pan and bolts for fixation of the AQUA 22MECH NORDIC installation frame shall be installed in such a way as to maintain watertight penetrations. A waterproof membrane system with SINTEF Technical Approval shall be used.

Connection of the WC pan
The WC pan used with AQUA 22MECH NORDIC built-in cistern shall have connecting dimensions in accordance with EN 33 *WC pans and WC suites - Connecting dimensions*.

Flushing requirements for WC pan
The WC pan used with AQUA 22MECH NORDIC built-in cistern shall have a SINTEF Product Certificate or similar documentation. AQUA 22MECH NORDIC may be used with shower toilets.

Cistern water supply
The water supply to the cistern shall be installed 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.
Where pipes for drinking water or wastewater penetrate a fire cell or fire section, a documented construction design shall be used, for example as described in Building Research Design Sheet 520.342.

7. Factory production control

AQUA 22MECH NORDIC is produced by Cersanit S.A., Al. Solidarnosci 36, 25-323 Kielce, Poland.

The holder of the approval is responsible for the factory production control in order to ensure that AQUA 22MECH NORDIC is produced in accordance with the preconditions applying to this approval.

The manufacturing of AQUA 22MECH NORDIC is subject to continuous surveillance of the factory production control in accordance with the contract regarding SINTEF Technical Approval.

The manufacturer has an internal quality system certified in accordance with ISO 9001 and an environmental quality system certified in accordance with EN ISO 14001.

8. Basis for the approval

The evaluation of AQUA 22MECH NORDIC is based on reports owned by the holder of the approval.

The evaluation of design and technical solutions are based on recommendations given in SINTEF Building Research Design Guides.

9. Marking

AQUA 22MECH NORDIC shall be marked with the manufacturer's name, product name and production date. The approval mark for SINTEF Technical Approval TG 20797 may also be used.

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

Hans Boye Skogstad
Approval Manager