SINTEF

SINTEF Certification

No. 20041

Technical Approval

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Revised latest: 02.11.2016
Valid until: 01.01.2022
Provided listed on www.sintefcertification.no

SINTEF Building and Infrastructure confirms that

Eurocomponents prefabricated bathroom module

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

Eurocomponents S.p.A
Via Benaco 90
25081 Bedizzole BS
Italy
www.eurocomponents.eu

2. Product description

General

The Eurocomponents prefabricated bathroom modules is a system of prefabricated bathrooms to be placed in a building structure as separate units. The bathroom modules are supplied with sanitary installations, light fittings and piping installed and made ready for connection to the water and drainage systems. The modules are produced in sizes and with sanitary equipment customised to each individual building project. A typical bathroom module with a floor area of 5 m^2 weights approx. 3800 kg.

Table 1 gives product specifications for the most important components and materials incorporated in the modules. A detailed description of the module construction is given in *"Standard construction details for Eurocomponents prefabricated bathroom prefabricated bathroom modules relating to SINTEF Technical Approval No. 20041"*. This collection of construction details constitutes a formal part of the approval, and the version filed at SINTEF Building and Infrastructure at all times applies.

Walls and ceiling

The wall consists of 50 mm reinforced concrete with a liquid applied waterproofing membrane and ceramic tiles on top. The ceiling consists of 50 mm reinforced concrete.
The modules are made with a hole in the ceiling or in the wall for connection to the ventilation system.

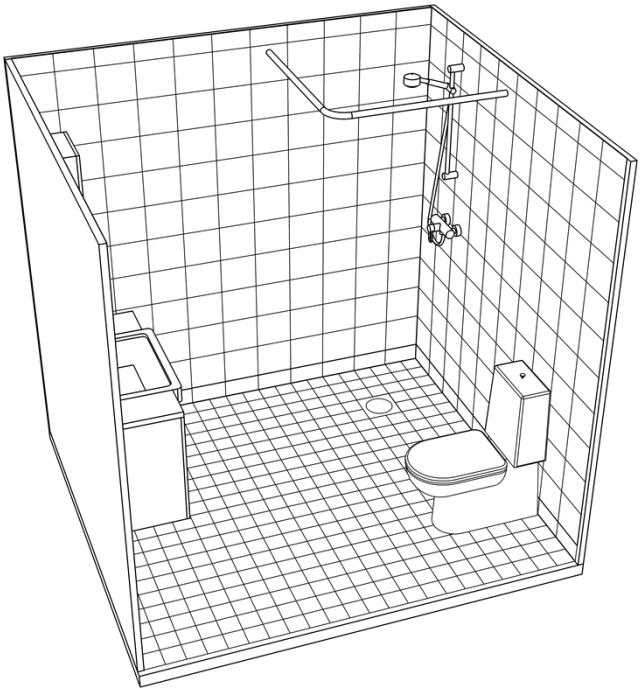

Fig. 1
Eurocomponents prefabricated bathroom modules are supplied complete with tiled surfaces and prefitted sanitary equipment.

Floor

The floor consists of a concrete slab reinforced with a steel mesh and steel rebars. The floor has a waterproof liquid applied membrane and tiles covering the concrete substrate as illustrated in figure. 2. The bathroom modules may be supplied with floor heating by electric heating cables or water pipes for district heating.
The floor has a slope of approx. 1:50 in the shower area and approx. 1:100 outside the shower area. The height difference between the floor drain grid and the membrane at the door treshhold is minimum 25 mm.

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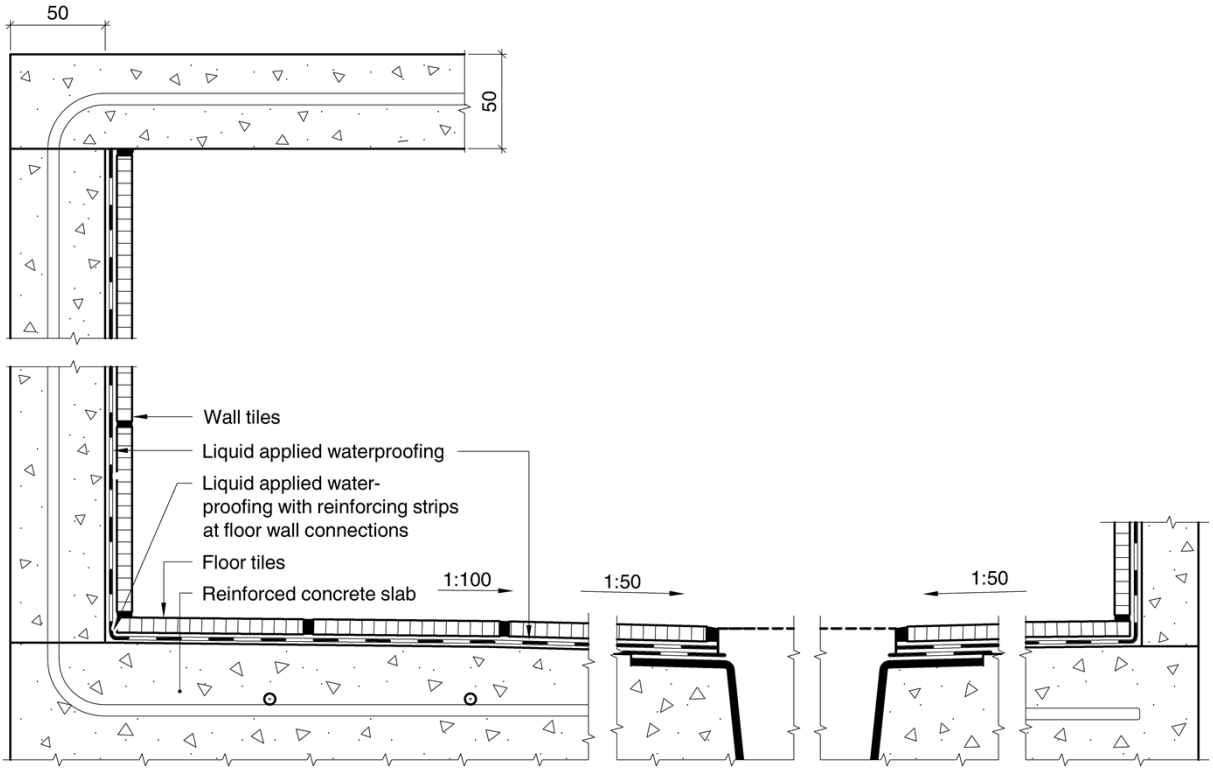

Figure 2
Principle design of floor, wall and ceiling structures.

Table 1
Product specification

Component	Specification
Concrete	C 25/30, EN 206-1
Reinforcement, floor	Mesh: 150 x 150 mm, Ø 5 mm Rebar: Ø 8 mm
Reinforcement, wall and ceiling	Mesh: 150 x 150 mm, Ø 5 mm
Tiles on floor and walls	Tiles to EN 87 and EN 14411
Tile adhesive	Mapei Keraflex Maxi S1
Waterproofing membrane	Mapei, Mapegum WPS with related components. SINTEF TG 2402
Floor gully with flange	Blücher and Vieser with flange. Certified according to EN 1253
Elastic sealant	Mapei Mapesil AC or Casco Aquaseal
Pipe-in-tube system and manifold	Uponor Tappevannsystem PEX, SINTEF TG20013
Waste pipes	Valsir PEHD, SINTEF PS 0377 Geberit Silent, SINTEF PS 0373
WC	Product certified according to EN 997
Wash basin mixer	Product certified according to EN 200 or EN 817 + NKB4
Shower mixer	Product certified according to EN 1111

Fittings

All piping and sanitary fittings used in the module have product certificates or separate technical approvals which document their properties. The water supply is a pipe-in-tube system. The distribution box and stop cock are placed on the exterior module wall. The modules are made with a hole in the ceiling for connection to the ventilation system.

3. Fields of application

The prefabricated bathroom modules can be used in dwellings, hotels and other buildings with a similar degree of utilization.

4. Properties

Load-carrying capacity

The floor structure is designed for an imposed load category A, according to Norwegian Standard NS 3491-1, i.e. 2 kN/m^2.

The wall-mounted wash-basin has been subject to a test load of 1,5 kN, as specified in ETAG 022 "*Guideline for European Technical Approval of Watertight Covering Kits for Wet Room Floors and Walls*", Annex E with a satisfactory result.

Water tightness

The performance of Eurocomponents prefabricated bathroom module has been documented through testing according to ETAG 022 "*Guideline for European Technical Approval of Watertight Covering Kits for Wet Room Floors and Walls*", Annex A and E, with satisfactory results.

Properties related to fire

The reaction to fire of interior surfaces is class B-s1, d0 according to EN 13501-1. Fire resistance is not determined.

Sound insulation

The sound insulation performance has not been determined.

Thermal insulation

The bathroom module is not equipped with thermal insulation.

5. Environmental aspects

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 that have any significant impact on health.

Environmental declaration

No environmental declaration accordingto ISO 21930 has been worked out for the Eurocomponents prefabricated bathroom module.

Substances hazardous to health and environment

The product contains no hazardous substances with priority in quantities that pose any risk for human health and environment.

Waste treatment/recycling

The bathroom module can be delivered to ordinary public waste disposal facilities at the end of the working life.

6. Special conditions for use and installation

Fundament

The bathroom modules must be installed on floors or foundations that are structurally designed for the weight of the module and its imposed load. The structure must be sufficiently rigid to prevent deformations that may cause insufficient slope towards the floor drain.

Availability

The bathroom modules, water closing valve included, must be designed and assembled in accordance with the requirements for the technical regulations under the Planning and Construction Act regarding accessibility for persons with impaired vision and mobility.

External sanitation systems

The building infrastructure design must be coordinated with the module design to ensure access to external sanitation systems (i.e. toilet cisterns) on the module outside for inspection, repair or replacement. Leakages from sanitary installations must be detected and not cause any unnecessary damage.

Electrical wiring

Bathroom modules delivered to Norway requires a declaration of conformity that electrical installations is in accordance to ”Regulations for low voltage (FEL) with guidance, NEK 400”

Installation

The modules are placed on 6 mm thick rubber pads at the corners, and must be levelled accurately in order to ensure that the floor has correct slope to the drain.

Transport and storage

During transport and storage, the modules must be placed on an even, stable foundation, and protected by packaging to prevent effects of moisture on the outside of the modules.

7. Factory production control

The product is produced by Eurocomponents S. p. A., Via Benaco 90, 25081 Bedizzole BS, Italy.

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

Eurocomponents hold ISO 9001 certificate no. DCT_2136_12/923_12_Q and ISO 14001 certificate no. DCT_2136_12/925_12_A from Asacert Assessment & Certification, Milano, Italia.

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 module as documented in the following report:

- SINTEF Building and Infrastructure. Report 3D088301 Report. Testing of prefabricated bathroom module - water tightness - for Eurocomponents S.p.A., dated 02.08.2010.

9. Marking

The product is to be marked with producer name, product name and production date. The approval mark for Technical Approval No. 20041 shall be used, visible inside the module after installation, i.e. in the pipe-in-tube manifold cabinet.

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

Marius Kvalvik

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