

SINTEF Technical Approval

TG 20518

SINTEF confirms that

Eurocomponents Mono-Light

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.
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2. Product description

Eurocomponents Mono-Light is a system of prefabricated bathroom modules to be placed in a building structure as separate units. The bathroom modules are waterproof and have ceramic tiles on floor and walls. They are equipped with sanitary installations and piping installed, ready for connection to the water and drainage systems (see figure 1 and 2). The modules are produced in different sizes and with sanitary equipment customized to the individual building project. A 5 m² bathroom module weights approx. 2500 kg.

Table 1. show product specifications for the most important components and materials incorporated in the modules. A detailed description of the module construction is filed in "Standard construction details for Eurocomponents prefabricated bathroom modules relating to SINTEF Technical Approval No. 20518". This collection of construction details constitutes a formal part of the approval, and the updated version filed at SINTEF Building and Infrastructure applies.

Ventilation and electrical installations are not assessed, nor part of this approval.

Floor

The floor is a reinforced concrete slab with a liquid waterproofing membrane applied and ceramic tiles on top, as illustrated in figure 2. The bathroom modules may be equipped with electric heating cables or pipes for hot water system for floor heating.

The floor has a slope of min. 1:100. The shower area has a slope of min. 1:50. The height difference from the gully grate and the floor waterproofing membrane at the door opening is min. 25 mm. The modules can have gully sentric in the shower area or design gully close to the wall.

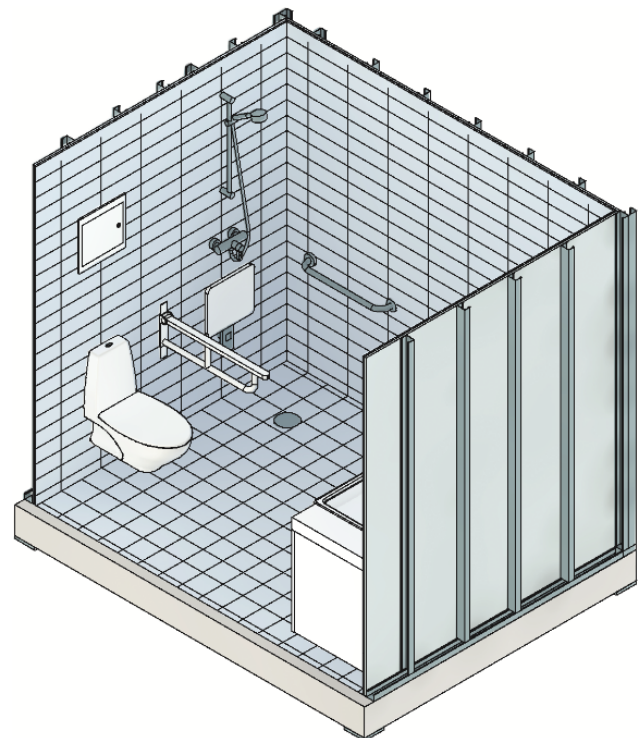


Fig. 1
Overview image of Eurocomponents Mono-Light.

Walls and ceiling

The walls consists of steel profile studs with 15 mm Fermacell fiber gypsum boards. The inside is covered with Mapei WPS waterproofing membrane system and ceramic tiles. The ceiling consists of painted 15 mm Fermacell fiber gypsum boards on steel profile studs.

Installations

Properties for all piping and sanitary fittings installed in the modules are documented by separate product certificates or approvals. Water supply is based on a pipe-in-tube system with a distribution box located in the module wall or ceiling. All pipe penetrations in walls are sealed with appropriate water proofing parts.

SINTEF is the Norwegian member of European Organisation for Technical Assessment, EOTA, and European Union of Agrément, UEAtc

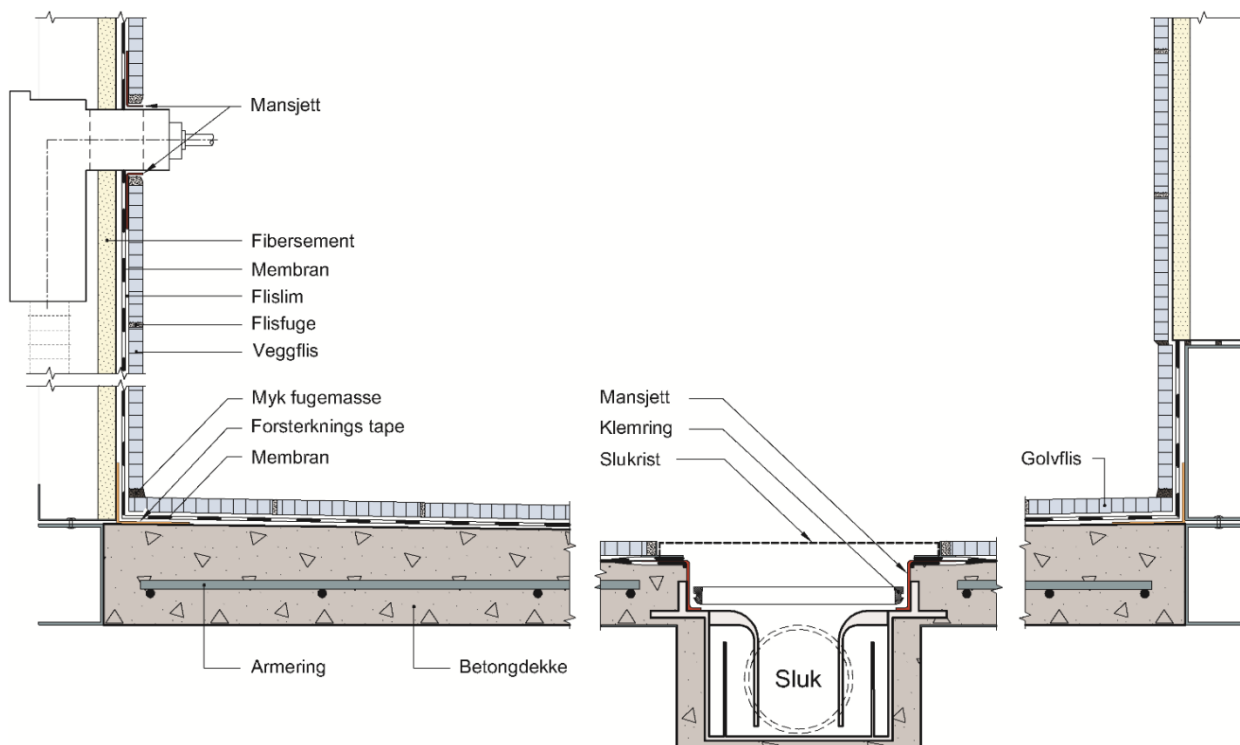


Fig.2
Cross section shows the structure of the modules

Tabell 1
Materialliste

Component	Spesification
Concrete slab	CLS mix design, Italcementi SPA
Reinforcement in floors	Mesh 150 x 150 mm, Ø 5 mm Rebars: Ø 8 mm
Wall and ceiling steel profile studs	Galvaniserte stålprofiler 1 mm. DX51D Z 140 MAC
Wall and ceiling boards	Fermacell Gypsum fibreboard. type GF-W2; Wall 15 mm, ceiling 15 mm
Waterproofing liquid membrane	Mapei Mapegum WPS, SINTEF TG 2402
Ceramic tiles	According to EN 14411
Tile adhesive	Mapei Keraflex Maxi S1
Tile mortar grouting	Mapei Ultracolor Plus
Elastic sealant	Mapei Mapesil AC
Gullies	Unidrain gulvavløpssystem, Corner and Line, SINTEF TG 2552, or JAFO PS75 gully, SINTEF PS 0704
Waste pipes	Geberit HDPE, SINTEF PS 0373
Pipe-in-tube system, included manifold cabinet	Uponor Tappevanntsystem PEX SINTEF TG 20013, or LK Universal pipe in tube system SINTEF TG 20312
Hand basin mixer	Sertifiserte produkter iht. EN 817 og NKB 4
Shower mixer	Sertifiserte produkter acc. to EN 817 or EN 1111
WC	Sertifiserte produkter med bolt og cistern, acc. to EN997, Insta SBC 0402 eller NT VVS 120.

3. Fields of application

Eurocomponents Mono-Light is designed for use in private homes, hotels and other buildings with equivalent conditions for the use of wet rooms, as described under clause 6. The modules can be used in buildings risk class 1-6 in fire class 1,2 and 3.

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. 2,0 kN/m². The modules are not designed to support other building elements.

Wall-mounted toilet has been tested with a 4.0 kN load according to EN 997, and wall-mounted washbasin has been tested for 1.5 kN load according to ETAG 022 (Guideline for European Technical Approval of watertight covering kits for wet room floors and or walls), Annex E.

Seat for disabled in the shower area has been tested for 2,2 kN load. Handbar has been tested with 1,2 kN load.

Water tightness

The performance of Eurocomponents prefabricated bathroom modules has been tested according to ETAG 022, Annex A and E, with satisfactory results.

Safety in case of fire

Ceramic tiles are classified Fire Class A1 according to EN 13501-1. Fermacell Gypsum fibreboard is classified A2-s1,d0.

Sound insulation

Sound insulation performance has not been determined.

Thermal insulation

Thermal insulation properties have not been determined.

Durability

Pipes and sanitary components, waterproofing and surfaces are assessed to have adequate durability

5. Environmental aspects*Substances hazardous to health and environment*

Eurocomponents Mono-Light 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

Eurocomponents Mono-Light 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

Eurocomponents Mono-Light contains no hazardous substances and is assessed as non-hazardous waste according to Norwegian Waste regulations (Avfallsforskriften). The product shall be delivered to an authorized waste treatment plant for material recovery, energy recovery or disposal according to recommendations from the Manufacturer's.

Environmental declaration

No environmental declaration (EPD) has been worked out for Eurocomponents Mono-Light.

6. Special conditions for use and installation*General*

General guidelines for use of prefabricated bathroom modules can be found in Byggforskserien 520.130

Installation

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.

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

Accessibility

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.

Sound and fire

Requirements for fire resistance, properties for internal surfaces and sound insulation of the building must be assessed and designed for each project.

Safety in case of fire

Shafts facing a module must have fire resistance according to the Guidelines for TEK and the requirements for fire class in the individual project.

Electrical wiring

Bathroom modules delivered to Norway requires electrical installations in accordance with "Regulations for low voltage (FEL) with guidance, NEK 400:2018". Installations on the outside of the module must be prepared for future repair or replacement.

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. Each module must have serial number/ ID number easily visible on the outside of the packaging.

7. Factory production control

Eurocomponents Mono-Light is produced by

Eurocomponents S.p.A.

Via Benaco 90

25080 Bedizzole (BS)

Italy

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

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

The quality system in use by Eurocomponents S.p.A. is certified by the Swiss Association for Quality and Management System SQS according to ISO 9001:2008, Certificate No. DCT_2136_12/923_15_Q.

8. Basis for the approval

The evaluation of Eurocomponents Mono-Light is based on reports owned by the holder of the approval.


9. Marking

The product is to be marked with producer name, product name and production date. The approval mark for Technical Approval No. 20518 shall be used, visible inside the module after installation, i.e. in the pipe-in-tube manifold cabinet.

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

A handwritten signature in blue ink, reading "Susanne Skjervø". The signature is written in a cursive style with a large initial 'S'.

Susanne Skjervø
Approval Manager