Technical Approval

SINTEF Building and Infrastructure confirms that

Drybox

meets the provisions regarding product documentation given in Norwegian building regulations, with properties, fields of application and conditions as stated in this document

1. Holder of the approval

Aloys F. Dornbracht GmbH & Co. KG
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2. Manufacturer

Aloys F. Dornbracht GmbH & Co. KG, Iserlohn, Germany

3. Product description

Drybox are prefabricated installation boxes intended for mounting and hiding of mixing taps inside the wall framing, see Figure 1. Only the handle/lever that regulates the water flow and temperature will be visible for the user of the tap. Drybox can be used in showers or in connection with bathtubs and wash basins. The liquid membrane used as waterproof layer for wet room walls is not a part of the system. Pipe in tube system is not a part of the system, except the bushing which is a part of the product system. Table 1 shows the Drybox's main components.

Table 1
Product specification for Drybox, see Fig. 1

No.	Component	Article no.	Material specification
1	Metal frame	09172011990	Steel with yellow chrome
2	House of tap included gasket	0411110460090	ABS / EPDM
3	Front cover with locking pins	0411022390090	Steel
4	Front frame	0411022390090	Steel
5	Bushings for outer protection tube	0924042530090	PA 6
6	Collar	09140315790	PE-LD
7	Mixing tap (Concealed part)	3570797090 3580697090 3580797090 3580897090	Brass

4. Fields of application

Drybox can be installed in all kind of buildings included accessible dwelling units and universally designed buildings if mounted as described in Chapter 7. Drybox can be mounted in wet zones in wet rooms as described in Chapter 7 Special conditions for use and installation. Then Drybox will meet the requirements regarding exchangeability and maintenance, water tightness and leakage detection as given in Norwegian building regulations.

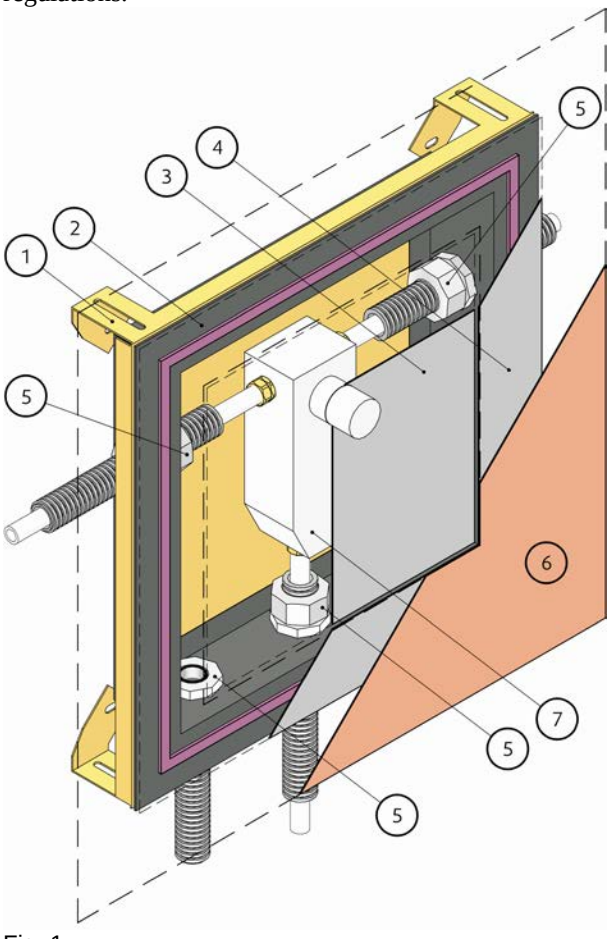

Fig. 1
Drybox

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5. Properties

Water tightness

Watertight connection between Drybox and wall in wet zones with liquid membrane has been documented through testing in accordance with ETAG 022 "*Guideline for European Technical Approval of Watertight Covering Kits for Wet Room Floors and Walls*", Annex F, with satisfactory results.

Water tightness of bushings for outer protection tubes is documented through testing in accordance with NT VVS 129 "*Pipe in tube systems*".

Exchangeability and maintenance

Exchangeability and maintenance of mixing taps and inner PEX-pipes after installation is made possible without damaging or breaking of the watertight layer. The mixing tap, fittings and pipes can be replaced easily through a front cover with locking pins. However, some of the wall tiles need to be removed in this operation.

Leakages from mixing tap, fittings or pipes inside Drybox will be drained out of the box and to the floor gully through a drain pipe, see Figure 2.

Technical specifications of mixing valves

Mixing taps from Dornbracht intended for use inside Drybox can be used only; see Table 1. The taps in Table 1 comply with requirements in NS-EN 200 or NS-EN 817. Marking and determination of heavy metals (lead and cadmium) comply with requirements in NKB 4.

Safety against scalding

Mixing taps from Dornbracht have temperature limitation to avoid scalding (higher temperature than 38 ºC) in buildings like kindergarten, welfare houses and buildings for physically disabled/handicapped persons.

Acoustic characteristics

Mixing taps from Dornbracht are classified in acoustic groups in accordance with EN ISO 3822. The acoustic group for a specific mixer can be provided by making an inquiry to Dornbracht.

6. Environmental aspects

Substances hazardous to health and environment

The surface layer (passivation) of some metal parts of the Drybox contains the following hazardous chemical with priority: 100 mg/m^2 of Cr (VI).

The remaining parts do not contain hazardous substances with priority in quantities that pose any increased risk for human health and environment. Chemicals with priority include CMR, PBT and 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.

Effect on soil, surface water and ground water

The product is judged to not release compounds to drinking water in amounts that can cause taste, odour or be dangerous to the health.

Waste treatment/recycling

The product should be sorted as metal waste or residual waste on the building/demolition site. The product shall be delivered to an authorized waste treatment plant for material recovery (metal parts) and energy recovery (non-metal parts).

Environmental declaration

No environmental declaration according to ISO 21930 has been worked out for the product.

7. Special conditions for use and installation

Installation

The manufacturer's installation instruction, version 01030697050 issued June 2011, should be used. Figure 2 shows Drybox mounted in a wet zone.

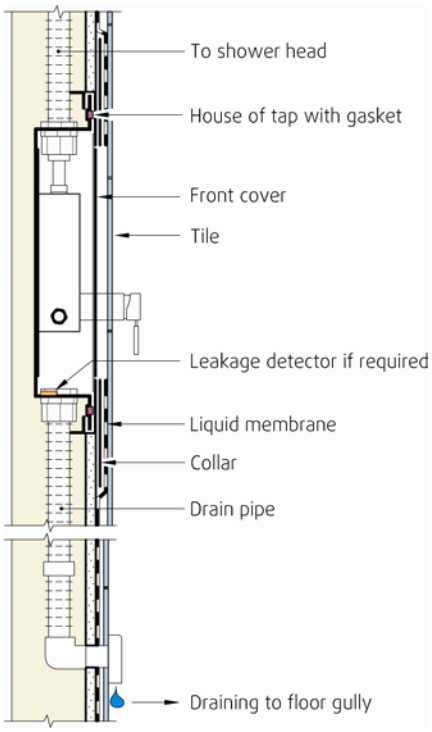

Fig. 2
Mounting of Drybox in wet zones

Installation – Accessible dwelling units

Drybox's service panel must be mounted in a working height between 0,8 m and 1,1 m above the finished floor level in accordance with Norwegian building regulations.

Installation – Universally designed buildings

Drybox's service panel must be mounted in a working height between 0,8 m and 1,1 m above the finished floor level. Mixing taps for use in showers or in connection with wash basins must be single handled. Taps for use in showers must be a thermostatic mixing valve. The handle/lever must have a visible colour contrast to both wall and floor in accordance with Norwegian building regulations.

Liquid membrane

Liquid membrane used as watertight connection between wall and Drybox in wet zones must have a SINTEF Technical Approval or similar documentation.

Pipe in tube system

Pipe in tube system used for water supply to Drybox must have a SINTEF Technical Approval or similar documentation. The Drybox bushings can only be used together with outer protection tubes with 25 mm outside dimension.

Penetration of fire walls

Pipes penetrating fire classified building walls or floors must not weaken the building construction's fire resistance. If pipes do penetrate fire classified building walls or floors, then a well-documented construction solution, as described in Building Research Design Sheet 520.342, must be used. If Drybox is installed in a fire classified building wall, then the fire resistance of the wall must not be weakened.

8. Factory production control

Drybox is subject to supervisory factory production and product control according to contract between SINTEF Building and Infrastructure and Aloys F. Dornbracht GmbH & Co. KG concerning Technical Approval

9. 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 report:

- SINTEF Building and Infrastructure. Test report no. 3B040915 Testing of Drybox cupboard for built-in mixing valves in accordance with ETAG 022 and NT VVS 129, dated 07.06.2011.
- Danish Technological Institute. Test report no. 347814B Testing of single-lever mixer taps Dornbracht type 3580897090+36812710
- Danish Technological Institute. Test report no. 347814F Testing of two-handle mixer taps Dornbracht type 3570797090+36717785

10. Marking

All packaging should be marked with the manufacturer's name, product name and production date. The approval mark for SINTEF Technical Approval No. 20272 may also be used.

Approval mark

11. 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

12. Technical management

Project manager for this approval is Bjørn-Roar Krog, SINTEF Building and Infrastructure, dep. Energy and architecture, Oslo.

for SINTEF Building and Infrastructure

Hans Boye Skogstad
Approval Manager