

SINTEF confirms that

BerryAlloc Wall&Water

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

Alloc AS
 Fiboveien 26
 4580 Lyngdal
www.berryalloc.com

2. Product description

BerryAlloc Wall&Water is a watertight wall panel system based on plywood panels coated with high-pressure laminate. The panels consist of 7 sheets of wood, glued with waterproof adhesive according to EN 636-3. The front of the panels is covered with 1,1 mm high-pressure laminate, and the backside is covered with a 0,2 mm thick transverse balancing layer.

Panel thickness is 10 mm. Standard dimensions are 2400 mm x 600 mm. The density is approx. 700 kg/m³. Tolerances are shown in table 1.

The long sides of the panels are profiled as shown in fig. 1, with an integrated locking profile.

Extruded aluminium installation profiles and BerryAlloc Wall&Water Sealant, Bostik Silmax Byggfug 2620 and Casco AquaSeal are part of the system.

Table 1
Tolerances for production of Alloc bathroom panel

Property	Requirement	Test method
Length	± 1,0 mm	EN 324-1
Width	± 0,5 mm	
Thickness	± 0,4 mm	
Squareness	≤ 1,0 mm	Diagonal deviation
Edge straightness	Max 0,8 mm	EN 324-2
Lipping tongue/groove	≤ 0,15 mm	-

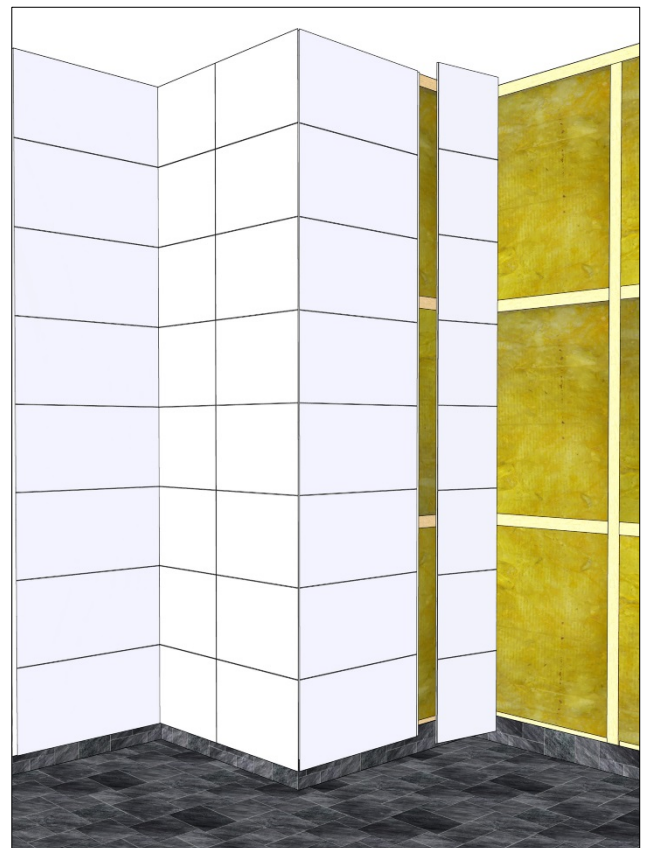


Fig. 1
BerryAlloc Wall&Water panel system

3. Fields of application

The panels can be fixed directly to the wall frames or battens, constructional boards, concrete-, brick-, and wooden walls, included walls below ground level. BerryAlloc Wall&Water can be used on walls in sanitary rooms as a waterproof lining. The panels can also be used in cloakrooms, washrooms, laundries, purification facilities, laboratories etc.

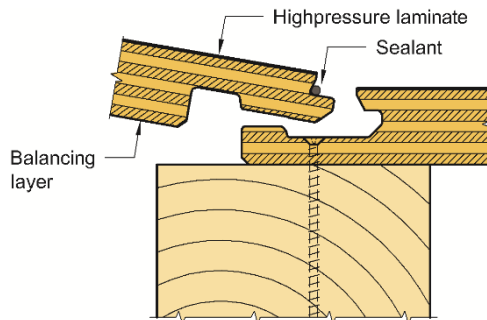


Fig. 2
Mounting principle for BerryAlloc Wall&Water.

4. Properties

BerryAlloc Wall&Water are tested according to ETAG 022, "Guideline for European Technical Approval of watertight covering kits for wet room floors and or walls", Part 3: Inherently watertight board. Properties are listed in Table 2.

Properties related to fire

BerryAlloc Wall&Water fulfils the requirements of class D-s2,d0 mounted on a underlay class A2 or higher. E.g. wall construction with wooden studs and non-flammable insulation or uninsulated.

5. Environmental aspects

Hazardous substances

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

BerryAlloc Wall&Water shall be sorted as residual waste on the building/demolition site. The product shall be delivered to an authorized waste treatment plant for energy- or material recycling. Non-cured sealant is to be treated as hazardous waste (according to Avfallsforskriften).

Environmental declaration

BerryAlloc Wall&Water has an environmental product declaration (EPD) according to EN 15804 ref EPD nr. NEPD-1292-416-EN, <http://epd-norge.no/>

Table 2
Properties for BerryAlloc Wall&Water

Property	Result	Test method
Water vapour transmission, highpressure laminate, S_d – value ¹⁾	15,3 m	EN 12572
Watertightness at 1,5 bar water pressure for 7 days	Passed	EN 14891, Annex A.7
Watertightness at penetrations in wall ²⁾	Passed	ETAG 022 Annex E
Bridge building capacity: - tensile strength - shear strength	2 mm – passed 2 mm – passed	ETAG 022 Annex B
Dimensional changes in panel plane associated with changes in relative humidity: Width, 30 – 85 % RH Length, 30 – 85 % RH Width, 85 – 30 % RF Length, 85 – 30 % RF	1,5 mm/m 1,1 mm/m -1,3 mm/m -1,1 mm/m	EN 318
Swelling of thickness after 24 hours immersion in water	3,5 %	EN 317
Tensile strength perpendicular to the plane of the board	1,8 N/mm ²	EN 319
Resistance to axial withdrawal of screws	1200 N	EN 320
Modulus of elasticity in bending: - longitudinal direction - cross direction	1051 Nmm/mm 1184 Nmm/mm	EN 310
Bending strength, EI: - longitudinal direction - cross direction	590 KNmm ² /mm 600 KNmm ² /mm	EN 310
Resistance to scratches	Passed	ETAG 022, Annex C
Cleaning ability	Passed	SS 92 36 14
Formaldehyde release	0,9 mg/(m ² x h)	EN 13986

¹⁾ Test conditions: 93 % RH / 50 % RH at 23 °C

²⁾ Penetrations: Copper pipes Ø 15 mm and wall boxes Ø 46 mm

6. Special conditions for use and installation

Storage and conditioning

BerryAlloc Wall&Water shall be stored under dry conditions on a levelled substrate, front side to front side for surface protection. The panels shall be stored at room temperature for 2 days prior to installation.

Underlying base

The underlying base for installation of BerryAlloc Wall&Water shall comply with the requirements for directional- and surface-tolerances given in NS 3420-1, tolerance class PB.

Installation on timber framework

The studs spacing shall be max. c/c 0,6 m, and horizontal battens shall have spacing max. c/c 0,8 m. Extra noggings are required when installing heavy objects i.e. washstand.

The panels shall be fixed to the studs/battens by screws, spacing c/c 200 mm, as shown in fig. 1. Place no screws closer than 20 mm from the top or bottom of the panel. Power tools must be used with caution not to damage the panels.

Installation on tile and concrete

When installing on concrete or brick walls the panels shall be fixed to vertical and horizontal battens with dimensions min. 23 mm x 48 mm. The battens shall be installed with the wide side facing the wall. Distance between battens shall be as described above for frame work walls.

Optionally, base-, corner- and jointprofile can be fixed directly to the underlying base using adhesive Bostik Maxi Bond. Panels are then mounted by horizontal strings of adhesive c/c 600 mm, and a screw at the topp and bottom. This method requires that the underlying base is dry ($R_f < 85\%$ / $CM < 2\%$), permits adhesion and in compliance with required direction- and surface deviations. For instruction, see BerryAlloc document La-1710-1EN.

Wet areas

All tongue/groove- and profile joints in wet areas shall be sealed with BerryAlloc Wall&Water Sealant, Bostik Silmax Byggfug 2620 eller Casco AquaSeal. Waterproofing vertical joints are performed as illustrated in fig. 2. Ample quantity sealant shall be applied so excess mass seep out in the full lenght of the joining panels/profiles as they are pressed towards eachother. Excess sealant is to be wiped of immediately. Assembly and sealing, using products listed in Table 3, must be performed according to manufacturer's instructions.

Table 3
Approved sealants to BerryAlloc Wall&Water

Sealant
BerryAlloc Wall&Water Sealant
Bostik Silmax Byggfug 2620
Casco AquaSeal

Penetrations in wet areas

Waterproof installation of wall boxes must follow one of the methods:

- Collars that are delivered with the wall box are glued to the surrounding panel using BerryAlloc Wall&Water Sealant, Bostik Silmax Byggfug 2620 or Casco AquaSeal. Se fig. 3.
- Wallboxes are installed using tightening ring delivered with the wallbox. See fig. 4.

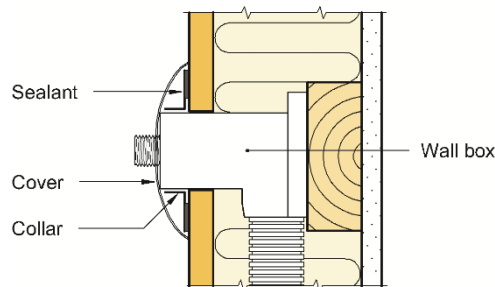


Fig. 3
Pipe penetration with collar glued to the surrounding panel

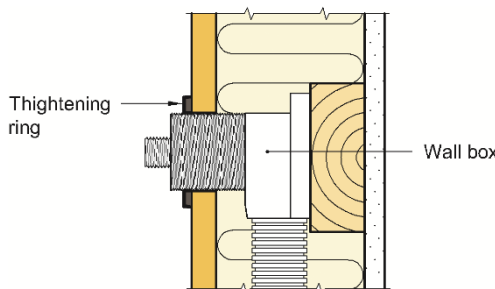


Fig. 4
Pipe penetration with tightening ring

Vapour-barrier

BerryAlloc Wall&Water complies with requirements to water vapour resistance for walls with restricted or no heating on the oposite side. Any existing water vapour barrier must be removed before panels are mounted.

Cleaning/maintenance

BerryAlloc Wall&Water can be cleaned with a wet cloth or a mild detergent without abrasives.

7. Factory production control

The product is produced by Alloc AS, Lyngdal, Norway.

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

The manufacturer has a quality system which is certified by Bureau Veritas according to ISO 9001:2008, certificate No. NL014750-1.

8. Basis for the approval

- The approval is based on properties documented in the following reports:
- SINTEF Byggforsk. Measurement of Water vapour Resistance on Alloc Wall & water baderomspanel with integrated barrier. Rapport 3D8206.05/585
- SINTEF Byggforsk. Prøving av vanntetthet for Alloc Wall & Water baderomspanel ved bruk av fugemassen "Bostik Silmax Byggfug 2620". Rapport 3B052219 av 08.03.2012
- SINTEF Byggforsk. Measurement of Water Vapour Resistance on Wall & Water Bathroom panel "Dekorlaminat" and "Sperrelaminat". Rapport 3D0373-57 av 08.11.2011.
- Casco Adhesives AB Analysentrum. Formaldehyde emission by gas analysis. Alloc Wall & Water bathrooms panel. Rapport av 18.01.2005.
- Norges byggforskningsinstitutt. Prøving av rengjørbarhet for baderomspanel, Alloc. Rapport KO 6880-505 av 01.02.2005.
- VTT Technical Research Center of Finland. Silmax Construction Sealer. Emission measurement. VTT-S-03811-07 av 23.4.2007.
- Assesment report 130010-16, dated 30.11.2017, RISE Fire Research AS (prev. SINTEF NBL as)
- Assesment report 102010.02/06.224, dated 27.09.2006, RISE Fire Research AS (prev. SINTEF NBL as)
- Test report 102010.25/06.210, EN 13823:2002, dated 22.09.2006, RISE Fire Research AS (prev. SINTEF NBL as)
- Test report 102010.35/06.225, EN ISO 11925-2:2002, dated 22.09.2006, RISE Fire Research AS (prev. SINTEF NBL as)

9. Marking

The product shall be marked with the manufacturers name, product name and date of production. The marking may be fixed directly on the panels and/or on the packaging. The approval mark for Teknisk Godkjenning; TG 2410 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

Hans Boye Skogstad
Approval Manager