Test Report

on the watertightness of a sealing system in a wood basin construction with penetrations

Tested material type:	**Strip-shaped sealing**: both sides non-woven, highly tear-resistant and water-vapour retarding sealing membrane
Description:	**LITEX Membranduk**
Client:	**LITEX AS** **Pindsleveien 4** **N-3204 Sandefjord**
Date of order:	23.03.2017
Report no.:	79031702.001
Sampling:	Sent by the customer to the research institute on 15 May 2017: - sealing sheet: **LITEX Membranduk** - sealing tapes: **LITEX skjøtebånd gummiert NBR** and **Kaubit type NGVV** and **LITEX Membrantape** - sealing corners: **LITEX hjørnemansjett utvendig NBR / LITEX hjørne-mansjett invendig NBR** and **Kaubit outside / inside type NGVV** - wall and floor collars: **LITEX rørmansjettmm 40mm** and **LITEX slukmansjett universal / LITEX slukmansjett Purus line / LITEX rørmansjett 65mm** - waterproofing slurries: **2-Komponent lim 9 kg + 5 kg** - primer: **LITEX DS2 primer** - sealant adhesive: **LITEX Monteringslim**
Test procedure:	**ETAG 022** Guideline for European Technical Approval of watertight covering kits for wet room floors and or walls **- Part 2:** kits based on flexible sheets **Annex A** „Watertightness around penetrations and other details in wet room floors with flexible substrate“

This test report comprises 4 pages.

The test results refer to the tested material.
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SÄUREFEST DURCH SÄURE-FLIESNER

1. Brief description of the procedure:

The watertightness including details, e.g. in- and outgoing corners as well as penetrations in the floor, is tested by exposing the floor of a wooden basin, covered with the sealing system to inspect to head of water. Afterwards the installation is exposed to a series of dynamic loads and alternating influences from hot and cold water by spraying. Finally the floor is again tested with a head of water.

2. Description of the sealing system:

- **LITEX Membranduk** (version with or without fleece-free edge zone)
  both sides non-woven, highly tear-resistant and water-vapour retarding sealing membrane

- **LITEX skjøtebånd gummiert NBR**
  fleece-laminated elastic sealing tape made of NBR rubber

- **Kaubit type NGVV**
  both sides fleece-laminated elastic sealing tape made of NBR rubber with fabric backing

- **LITEX Membrantape**
  fleece-laminated elastic sealing tape made of butyl

- **LITEX hjørnemansjett utvendig NBR / LITEX hjørnemansjett innvendig NBR**
  elastic sealing corner made of NBR rubber with fabric backing

- **Kaubit outside / inside type NGVV**
  both sides fleece-laminated elastic sealing corners made of NBR rubber with fabric backing

- **LITEX rørmansjettmm 40mm** and **LITEX slukmansjett universal / LITEX slukmansjett Purus line / LITEX rørmansjett 65mm**
  elastic wall and floor collar made of NBR rubber with fabric backing

- **2-Komponent lim 9 kg + 5 kg**
  hydraulically hardening, 2 components, elastic waterproofing slurries

- **LITEX DS2 primer**
  solvent-free, ready-to-use polymer dispersion

- **LITEX Monteringslim**
  adhesives and sealants based on silane-modified polymers

The following were also included as accessories for water drainage and/or proof of connectivity:

- **Floor drain made of plastic with round clamping ring** (Joti K-sluk 50)
  vertical/horizontal shower drain

- **Floor drain made of plastic with oval clamping ring** (Purus line)
  vertical/horizontal shower drain

- **Floor drain made of stainless steel with round clamping ring**
  (Blücher Shower Drain Circle 150)
  vertical/horizontal shower drain

3. Execution:

For the installation of floor drains and pipe penetrations, cut-outs were cut into the bottom of the wooden container. The wooden container was lined by an employee of the LITEX AS company in the premises of the research institute.

The three above-described floor drains and two HT pipes made of plastic (diameter DN 50 mm and DN 110 mm) were used in the prepared recesses. The entire wooden construction was then primed with **LITEX DS2 primer**.

After drying, the installation of the **LITEX Membranduk** sealing membrane with **2-Komponent lim 9 kg + 5 kg** sealing slurry, which was applied with a notched trowel, was carried out in the floor area. The sealing collar for the floor drains and the pipes were glued with **LITEX Monteringslim** below and in the edge area.

The installation of the **LITEX Membranduk** sealing membrane with **2-Komponent lim 9 kg + 5 kg** was carried out in the wall area. 5 joints, edge to edge and one joint with 10 cm overlap. The one jointing area of the sealing sheets (without non-void-free edge zone) one joint, on the wall surface were overworked with the **2-Komponent lim 9 kg + 5 kg**. Joints between sheets with fleece-free edge zone were covered with the sealing tape type **LITEX Membrantape.**

The sealing corner for the outer and inner corners (of the type **LITEX hjørnemansjett utvendig NBR / LITEX hjørnemansjett innvendig NBR**) were glued with **LITEX Monteringslim** below and in the edge area. Sealing tapes (type **LITEX skjøtebånd gummiert NBR** and **Kaubit type NGVV**) and sealing corners (type **Kaubit outside / inside type NGVV**) were glued to the floor-to-wall and wall-to-wall joints with **2-Komponent lim 9 kg + 5 kg** sealing slurry.

All joints and transitions were once again overworked with **2-Komponent lim 9 kg + 5 kg** finally.

Beginning after a hardening period of 7 days (23°C/50% rel. hum.), the installation was successively loaded as follows:

- Filling the basin with water (H = 100 mm) for 24 hours
- Exposing dynamic load by a sand bag (30 kg), falling 3 times from 0.45 m in five different places
- Filling the basin with water (H = 100 mm) for 24 hours
- Spraying the installation in the transition area to the gullys
  - hot water (90 ± 3°C) 0.3 l/sec for 60 sec
  - pause 60 sec
  - cold water (10 ± 3°C) 0.3 l/sec for 60 sec
  - pause 60 sec

  The cycle was repeated 100 times.
- Spraying the installation over the details (corners, pipe penetrations, floor-wall transitions, etc.) from 9 nozzles
  - hot water (60 ± 3°C) for 60 sec
  - pause 60 sec
  - cold water (10 ± 3°C) for 60 sec
  - pause 60 sec

  The cycle was repeated 1.500 times.
- Filling the basin with water (H = 100 mm) for 7 days

During the whole test period the wood basin construction was controlled for any signs of water penetration.

4. Test result:

Over the entire testing period no signs of moisture penetration into the wood construction were determined. **The tested sealing system was found to be watertight against the imposed loads.**

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Großburgwedel, 07.09.2017
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