

## Testing of Joramark BOX300 according to ETAG 022 Annex F

Request by: Joramark Oy

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**Order** Telephone conversation between Hannu Hyttinen and Jouni Rautiainen

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**Task** **Testing of Joramark BOX300 according to ETAG 022 Annex F**

**Samples** The customer delivered Joramark products presented in table 1 to VTT Expert Services Ltd on September 9, 2015. Ulf Alén delivered the Casco products on September 30, 2015.

*Table 1. The samples for testing.*

Product	Quantity	Marking
Casco Waterproofing tape 3647	1 roll, 100 mm x 15 m	-
Casco Wetstop KL-tape 3798	1 roll, 120 mm x 30 m	-
Casco Primer 3698	1 L	41591249001
Casco Aquastop 3635	5 L	51397253001
Joramark Front plate	4 pcs	70101
Joramark Hatch	4 pcs	70102
Joramark Edge plate	4 pcs	999
4,2 x 16 KFR Screw	60 pcs	76034



*Picture 1. The waterproofing reinforcement tapes used in the tests.*

The test results relate only to the sample tested.

**Testing period** 30.9. – 23.10.2015

**Performance of the task** Four gypsum boards size of 550x600 mm were primed with Casco Primer. The BOX300-hatches were attached in the holes in the centre of the test boards. The edges of the BOX300 hatches were cleaned, grinded and sealed with Casco waterproofing reinforcement tapes (picture 1). Two layers of Casco waterproofing membrane were applied.

The representative of the customer Ulf Alén (Oy Sika Finland AB) participated in the preparation of test specimens.

The water tightness of the test specimens were tested according to ETAG 022 annex F “Water tightness around penetrations and other details in wet room walls with flexible substrate”. The test specimens were subjected to 3000 water spray cycles:

Hot water spray (60±3°C) for 60 s  
 Pause for 60 s  
 Cold water spray (10±3°C) for 60 s  
 Pause for 60 s

After the test, the membranes and the reinforcement tapes were opened. The test specimens were examined visually for leakage using methylene blue -powder mixture. The moisture contents of the gypsum boards were measured after the test by weighing.

**Test results**

The test results are presented in tables 2–3. Pictures of test specimens after testing are shown in appendix 1.

*Table 2. The test results of ETAG 022 annex F tests.*

Product / Structure	Wet consumption	Result
BOX300 + Casco Waterproofing tape 3647	<u>Specimen 1</u> Primer <b>88 g/m<sup>2</sup></b> Waterproofing <b>1675 g/m<sup>2</sup></b>	ETAG 022 Annex F, <b>Watertight</b>
	<u>Specimen 2</u> Primer <b>79 g/m<sup>2</sup></b> Waterproofing <b>1717 g/m<sup>2</sup></b>	ETAG 022 Annex F, <b>Watertight</b>
BOX300 + Casco Wetstop KL-tape 3798	<u>Specimen 3</u> Primer <b>77 g/m<sup>2</sup></b> Waterproofing <b>1838 g/m<sup>2</sup></b>	ETAG 022 Annex F, <b>Watertight</b>
	<u>Specimen 4</u> Primer <b>75 g/m<sup>2</sup></b> Waterproofing <b>1879 g/m<sup>2</sup></b>	ETAG 022 Annex F, <b>Watertight</b>

The test results relate only to the sample tested.

*Table 3. Moisture content after the test.*

Specimen no.	Under the edge of the reinforcement tape	Under the waterproofing membrane
1	0.3 %	0.3 %
2	0.3 %	0.3 %
3	0.3 %	0.3 %
4	0.3 %	0.3 %

**Conclusions**

The BOX300 hatch was watertight with two different Casco waterproofing reinforcement tapes.

Espoo, October 27, 2015



Hannu Hyttinen  
Product Manager



Miia Jumpponen  
Technical Expert

**Appendices**

Appendix 1. Test specimens after testing

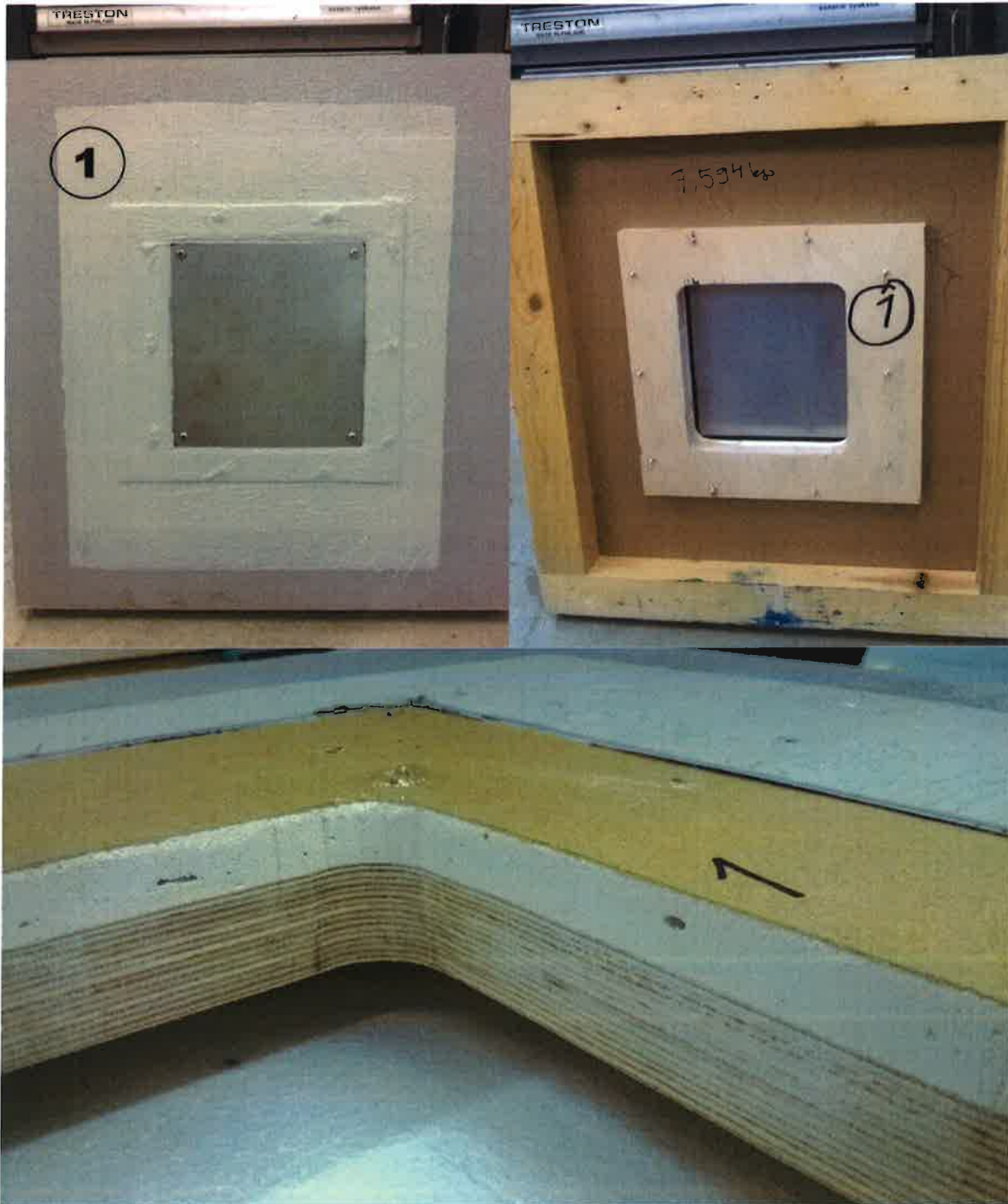
**Distribution**

Customer  
Archive

Original  
Original

The test results relate only to the sample tested.

The test specimens after testing:



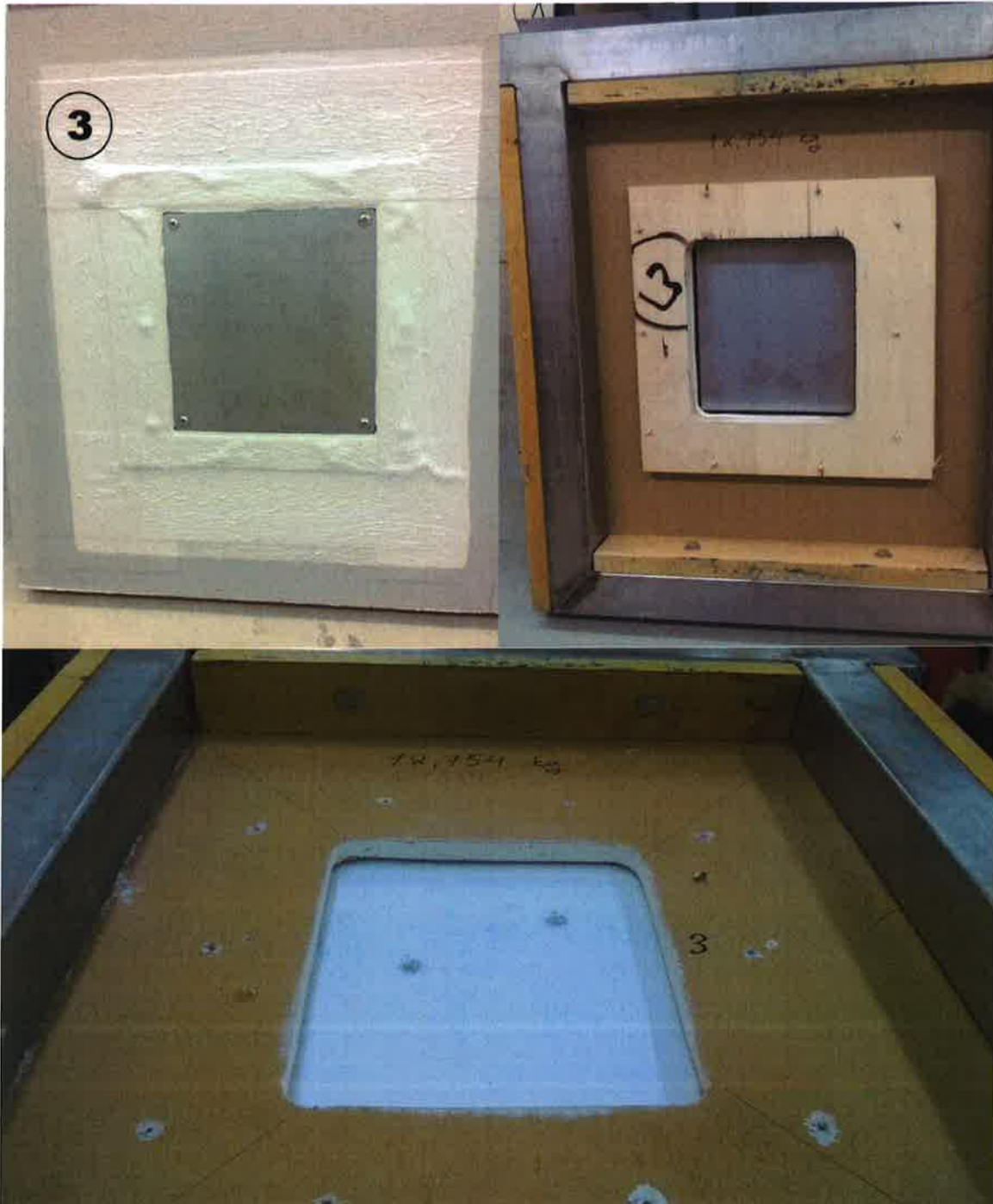
*Picture 1. Test specimen no. 1 after testing.*

The test results relate only to the sample tested.



Picture 2. Test specimen no. 2 after testing.

The test results relate only to the sample tested.



*Picture 3. Test specimen no. 3 after testing.*

The test results relate only to the sample tested.

APPENDIX 1



Picture 4. Test specimen no. 4 after testing.

The test results relate only to the sample tested.

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