Rapport
Report

NORSK AKKREDITERING TEST 006

Oppdragsgiver *Client*	**Utførende enhet/lab.** *Department/laboratory responsible*
FOAMGLAS® Albertkade 1 3980 Tessenderlo Belgium	Kiwa Teknologisk Institutt as Materialteknologi Oslo Pb 141 Økern 0509 Oslo

Rapportnr. *Report no.*

3400-17-026739

Tittel *Title*

Testing in accordance with ISO 20340:2009-04-01 Second edition, Ageing Procedure, Annex A.

Dato *Date*	**Utarbeidet av** *Prepared by*	**Godkjent av** *Approved by*	**Innleveringsdato for prøve** *Date of receipt of test object*
05.01.2018	Kristian Kaltenborn Kristian A. Kaltenborn	Hege Krogh Hege Krogh	June 2017 **Prøvetaking utført av Kiwa TI** *Sampling by Kiwa TI* Nei *No*
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Photo no.4: A photograph of panel no.3, cross section, appendix 1, page 2.

1. Summary

Kiwa Teknologisk Institutt AS received 3 samples of FOAMGLAS® Terostat Insulation system for exposure testing in accordance with ISO 20340:2009-04-01, Second edition, Ageing Procedure.

Foamglas® Terostat insulation system:
Size for testing, approx.: 145 mm x 70 mm x 14 mm

The ageing test was performed from June 6th 2017 to November 27th 2017.

Production and pre-treatment procedure of the exposed and unexposed FOAMGLAS® Terostat Insulation system panels, were carried out by the client. All samples were cut in two and sealed together with Terostat.

Accreditation – Saltspray method
The test was executed under accreditation granted by Norwegian Accreditation, accreditation no TEST 006 and was based on test requirements specified in method Natural Salt Spray Test in accordance with ISO 9227.

2. Reference documents

Kiwa Teknologisk Institutt, Materials Technology has tested FOAMGLAS® Terostat Insulation system in according to ISO 20340:2009-04-01, Second edition, Ageing Procedure.

3. Test methods

The pre-qualification testing has been performed in accordance with the standard ISO 20340: 2009-04-01 Second edition, Ageing Procedure.

All test standards are either ISO- or ASTM-standards and the testing have been performed in full accordance with the requirements given in these standards and with the quality system of the laboratory.

Test regime, Ageing Procedure acc. to ISO 20340:2009-04-01 Second edition.

- UV-A ISO 11507: 2007 72 h
- Salt Spray ISO 9227 72 h
- Low-temperature exposure at -20±2ºC 24 h
  One cycle, total time 168 h

  Total time, 25 cycles à 168 h **4200 h**

Acceptance Criteria

1. Blistering ISO 4628-2 Rating 0
2. Cracking ISO 4628-4 Rating 0
3. Flaking ISO 4628-5 Rating 0

After the ISO 20340 ageing procedure, the insulation product has good visual results regarding colour- and gloss-retention.

4. Results

The FOAMGLAS® Terostat Insulation system has no visual defects after exposure.

The below mentioned weight test was measured before, during and after the ageing procedure.

4.1 Weight:

The weight of insulation samples was measured in front of test start and after 25 weeks of exposure: In between weight was measured after 6, 9, 19 and 23 weeks.
After exposure all 3 panels were subjected to climate room at 23±2°C and 50±5% RH for 3 days.

	Start	6 W	9W	19W	23W	25W	After exposure		3 day after exposure	
Panel No.	6/6	18/7	8/8	16/10	13/11	28/11	29/11	1/12		
1	63,18	63,07	63,05	63,04	63,03	63,01	62,83	62,80	0,38	0,60%
2	75,19	75,04	74,99	74,96	74,93	74,91	74,75	74,72	0,46	0,62%
3	76,27	76,17	76,12	76,11	76,05	76,03	75,89	75,81	0,46	0,60%

5. Comments and conclusions

The 3 insulation test panels were exposed in accordance with ISO 20340:2009-04-01, Second edition. Ageing Procedure (UV resistance / cyclic salt spray / low-temperature exposure).

- The FOAMGLAS® Terostat Insulation system has no visual defects after exposure.
- The 3 exposed panels have lost weight limited to approximately 0,3% just after (1 hour after) 25 weeks of exposure and 0,6% 3 days later in climate room at 23±2°C and 50±5% RH.