

## Test Report

### Outgassing of thermal insulation material in solar-thermal flat plate collectors with antireflex glass

**Test procedure:**

- Similar to in-use conditions, sample is heated from one side. All test are carried out with 2 samples.

**Sample size:**

- Diameter about 80 mm, thickness for the test max. 40 mm

**Test design:**

- Heating from one side in an insulated metal container with condensate trap

**Test duration:**

- 150 hours

**Test temperature:**

- Surface temperature  $T_o$  of the thermal insulation on the heated side stabilized to: 220°C , tolerance - 0°C / + 5°C

**Manufacturer (comissioner):**

- SAINT-GOBAIN ISOVER G+H AG, Dr.-Albert-Reimann-Str. 20, D-68526 Ladenburg, represented by Mr Dirk Ottstadt

**Designation of the test specimen:**

- ISOVER ULTIMATE, mineral wool

**Delivery of the test specimen:**

- March 2004

**Test date:**

- Beginning 1st April 2004

**Test specimen description:**

- see technical data of the manufacturer

### Results:

The mineral wool mat ISOVER ULTIMATE (delivery March 2004) does not lead to any visible precipitation at the condensation trap of the test equipment. No significant change in the spectral transmittance is observed (see following table and the graphs in the appendix).

Sample	Solar transmittance		
	Reference	After exposure	Change
1	0.951	0.951	0.000
2	0.951	0.951	0.000

**Table 1:** measurement of solar transmission

### Judgement:

The tested thermal insulation ISOVER ULTIMATE (delivery March 2004) is suitable for single glazed, ventilated solar thermal flat plate collectors with antireflex glass with stagnation temperatures up to 220°C. No condensate precipitation resulting in significant performance changes is to be expected.



Rapperswil, 21<sup>st</sup> April 2004

Felix Flückiger

