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Damp heat cycling

Commission

Simulation of damp environment according to IEC 60068-2-30 on self-inflating horseshoe buoys.

Test objects

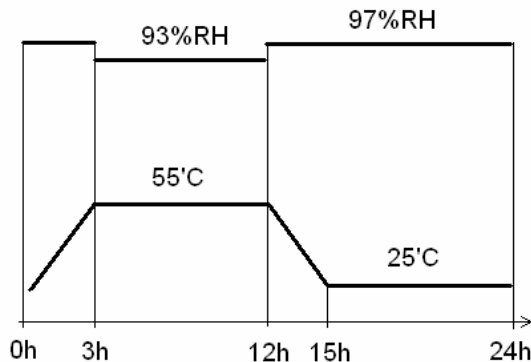
Five Wings self-inflating horseshoe buoys. The egg-shaped plastic enclosures had different holders numbered by the client:

1. Plastic clip over handle
2. Steel cage holder
3. Plastic clip over handle
4. Stowing box
5. Steel cage holder

The self-inflating horseshoe buoys are constructed to inflate when the plastic enclosure is dropped into water. The water-sensitive inflation mechanism is placed into the plastic enclosure together with a gas bottle and the inflatable buoy. Of safety reasons the construction was exposed with an empty gas bottle. The test objects were delivered to SP on December 2nd, 2005.

Test performance

The exposure was performed according to IEC 60068-2-30 – Damp Heat Cyclic, variant 1, upper temperature 55 °C. The 24 hours cycle follows this scheme:



Cycling of temperature and relative humidity

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The accuracy of the temperature is ± 2 °C and the humidity ± 2 %RH. The cycle produces condensation on the test specimens. The test objects were exposed for ten cycles. The plastic enclosures were opened regularly to check the inflation mechanism. Each time the enclosures were put in some other random orientation.

Results

After ten cycles of exposure none of the inflation mechanisms had triggered. The buoys were returned to the client for further evaluation.

**SP Swedish National Testing and Research Institute
Chemistry and Materials Technology - Polymer Technology**

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