



Submersion Test 2

Test Article: SKB 3i-1813-7B-C

Test Date/Time: 6/20/06 at 3:00p EDT to 6/22/06 at 7:45a EDT

Test Duration: 40 hours, 45 minutes

Test Location: Chesapeake Bay, Marine Targets Pierside, Naval Air Warfare Center, Patuxent River, Maryland

Test Agency: Atlantic Test Range, Naval Air Warfare Center, Patuxent River, Maryland

Test Engineer: Kevin S. Gish

Test Description:

The SKB case was submerged for over 40 hours in calm waters off a Chesapeake Bay pier where the water depth ranged from approximately 10.5 feet during high tide to 8 feet during low tide.

No modifications were made to the case: i.e., no holes were drilled and no fasteners attached. The cubed style foam inserts were removed from the case, but the foam insert for the lid was left installed. A sheet of newspaper was placed inside the case for easy detection of water intrusion. Silicone (dielectric) grease was liberally applied to the gasket channel on the case. The case was shut and latched.

An external 145-pound weight was tied to the handle of the case via a rope to counteract the case's buoyancy. The case and weight were slowly lowered into the water using a forklift. The weight was resting on the bottom of the bay, and the submerged case was suspended upside down in the water with the hinged side pointing upward. The hinged side of the case was estimated to be about 8.5 feet below the surface during high tide and 6 feet below the surface during low tide. 3 full tidal cycles were encountered during the period of the test.

The case and weight were slowly fished out of the water over 40 hours later using a forklift, and the exterior of the case was cleaned and dried off. An air compressor was used along the seam between the lid and bottom portion of the case to blow out any water lodged in the crevice. Some water and silicone grease came out of the seam when sprayed with air. When opened, the case was observed to be 100% dry – no evidence of water leakage was found on the foam or newspaper inside. However, a noticeable amount of depression on both sides (top and bottom covers) of the case was observed when the case was pulled from the water. The shape of the case did not quickly return, even after applying heat from a heat gun on the inside walls. However, leaving the case in the closed position outside in the hot sun helped to restore its shape. The depression in the case walls is understandable, considering the temperature decrease experienced underwater by the sealed case. Despite the noticeable depression in the case walls, the seals were not compromised.

Test Engineer: Kevin S. Gish Date: 7-19-06

#### DISCLAIMER

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