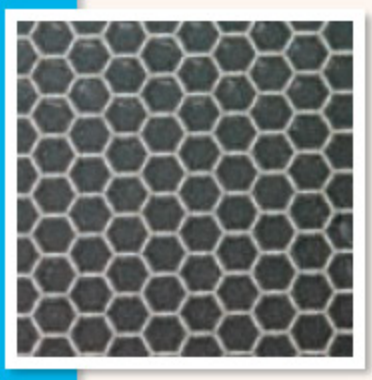
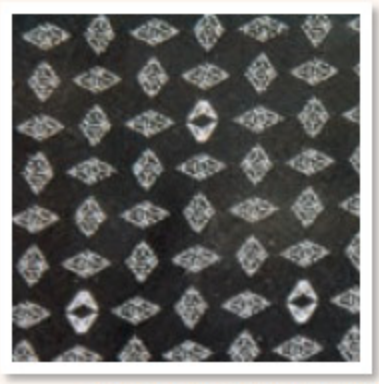


SOLAS A TAPE

ACR PATCH



3M REFLECTIVE TAPE

The three reflective materials that were tested are designed to reflect light, not radar signals. PS was curious to see whether there was any merit to the belief that some of these tapes do enhance radar returns. For the test, each tape was affixed to a 4-inch square trihedral radar target (above, covered with tin foil test sample).

In Search of Perfect Returns

Each target was mounted on a rotating platform at the height of the radar antenna in an anechoic chamber. The strength of the reflected signal was recorded on a strip chart while the target was rotated through 180 degrees. The measurements were made at 9.4 GHz using horizontal polarization for transmission and reception (the middle of the X-band marine radar spectrum). Calibration runs were made with a calibration target before, after, and during the complete set of individual tests. The peak radar cross-section (RCS) was obtained from each strip chart and tabulated as shown in the table below. The first data column shows the measured peak RCS in square meters and the second column shows the measured RCS divided by the "ideal" RCS calculated for the benchmark target. A ratio of 1.0 means that the test target is a perfect radar-reflecting material. Zero means that the material did not reflect radar at all.

PS TEST RESULTS — LIGHT REFLECTIVE TAPE

TARGET MATERIAL	MEASURED PEAK RCS (M^2)	MEASURED PEAK÷ BENCHMARK	PRICE (PER SQ. IN.)
3M SCOTCH BRAND TAPE	3.9 meters^2	0.98 meters^2	9 ¢
ALUMINUM FOIL	3.4 meters^2	0.85 meters^2	4 ¢
ACR PATCH	0.81 meters^2	0.2 meters^2	30 ¢
SOLAS-A TAPE	0.0051 meters^2	0.0013 meters^2	27 ¢
PLAIN FOAM BOARD	0 meters^2	N/A	N/A

The 3M brand reflective tape came closest to the benchmark, and at 9¢ per square inch, it is the cheapest of the three tapes.