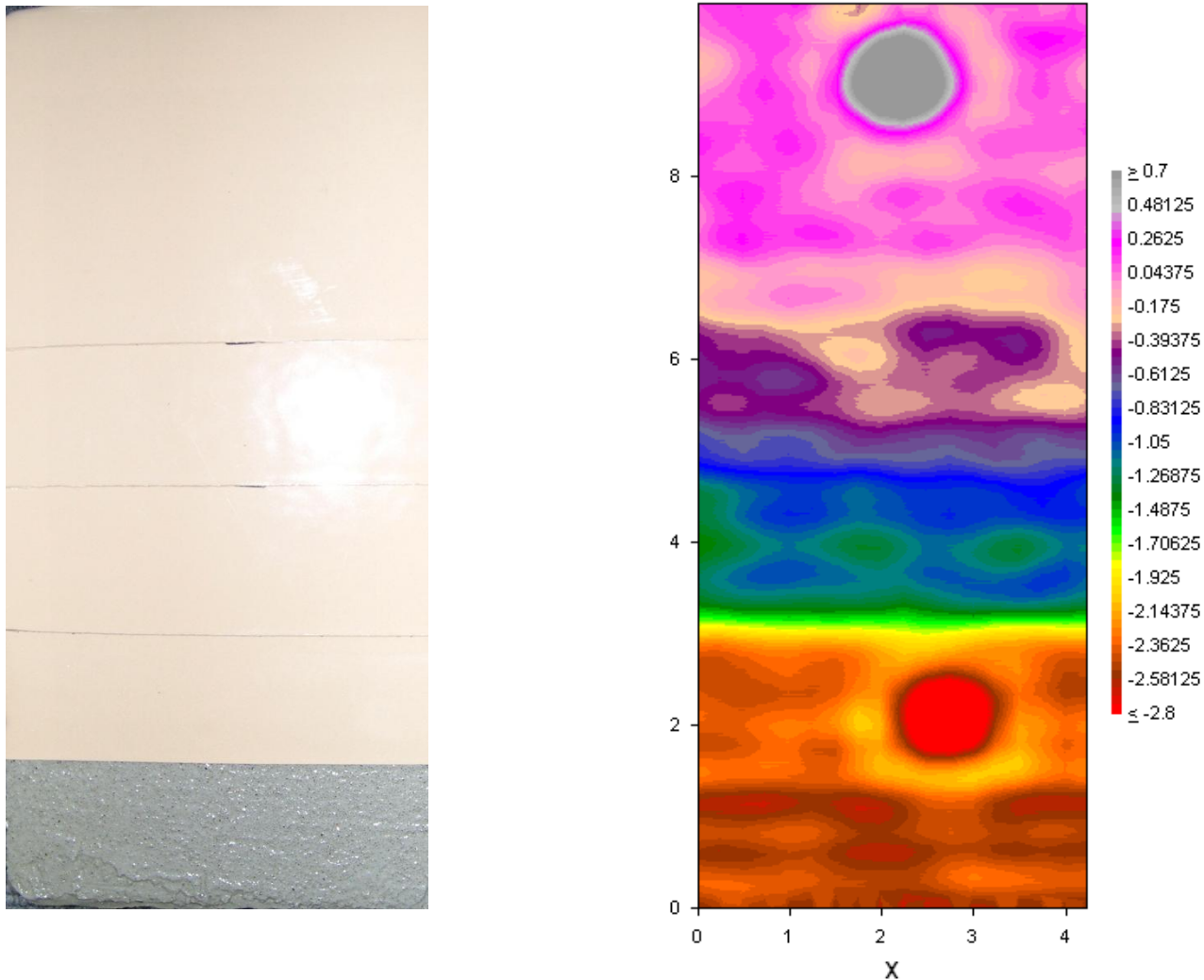


# Coating Thickness Detection Using Evisive Scan™ Imaging Technology



# Photograph & Scan of Concrete Coupon with Polyurea Coating Step Wedge



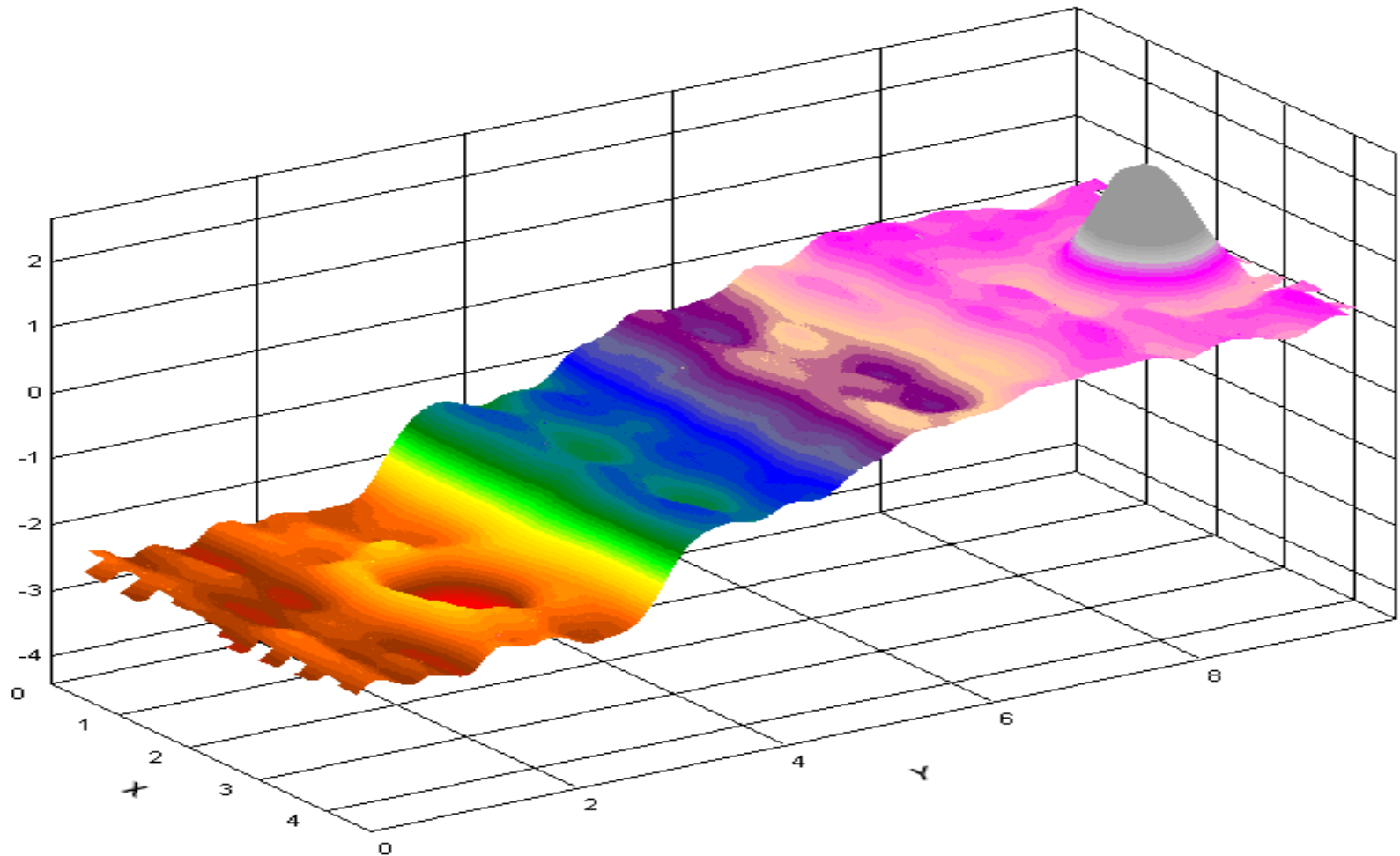
At left is the step wedge, composed of a concrete slab approximately 1.5" thick, coated to different thicknesses with Polyurea spray-on coating. Note the presence of reinforcing steel (rebar) in the concrete beneath the coating in the scan at right. The color gradient in the scan reflects thickness changes in the coating.

# Photograph of Concrete Coupon with Polyurea Coating Step Wedge



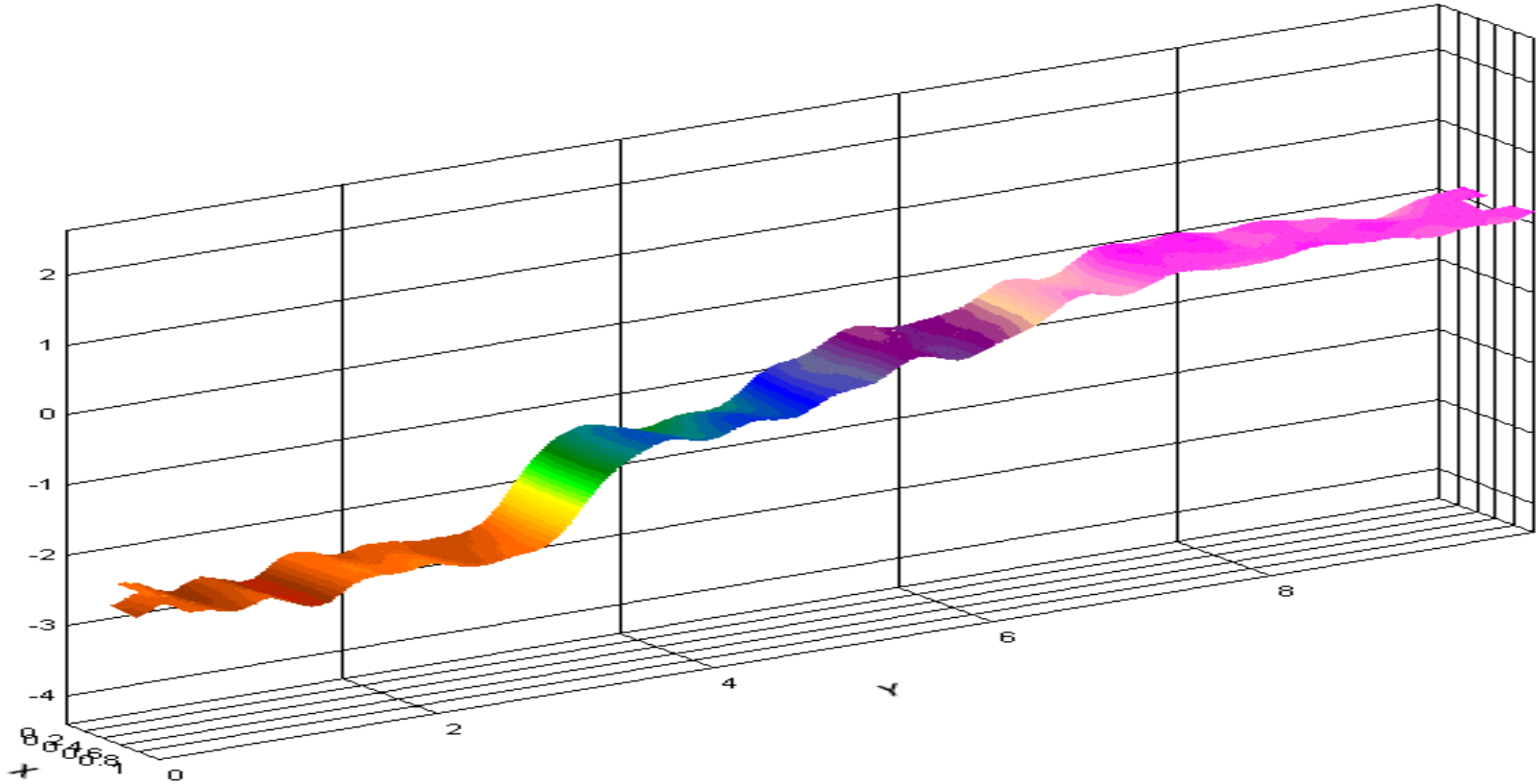
Above is a perspective view of the step wedge coupon. The different thicknesses can be seen clearly here. Due to accumulation of coating material on the edges of the coupon, these areas were not scanned.

# Scan of Concrete Coupon with Polyurea Coating Step Wedge



Above is the scan data, presented in perspective. The round indications in the first and fourth step are rebar beneath the coating. In order to develop a calibration curve for the coating, a “slice” without rebar is chosen.

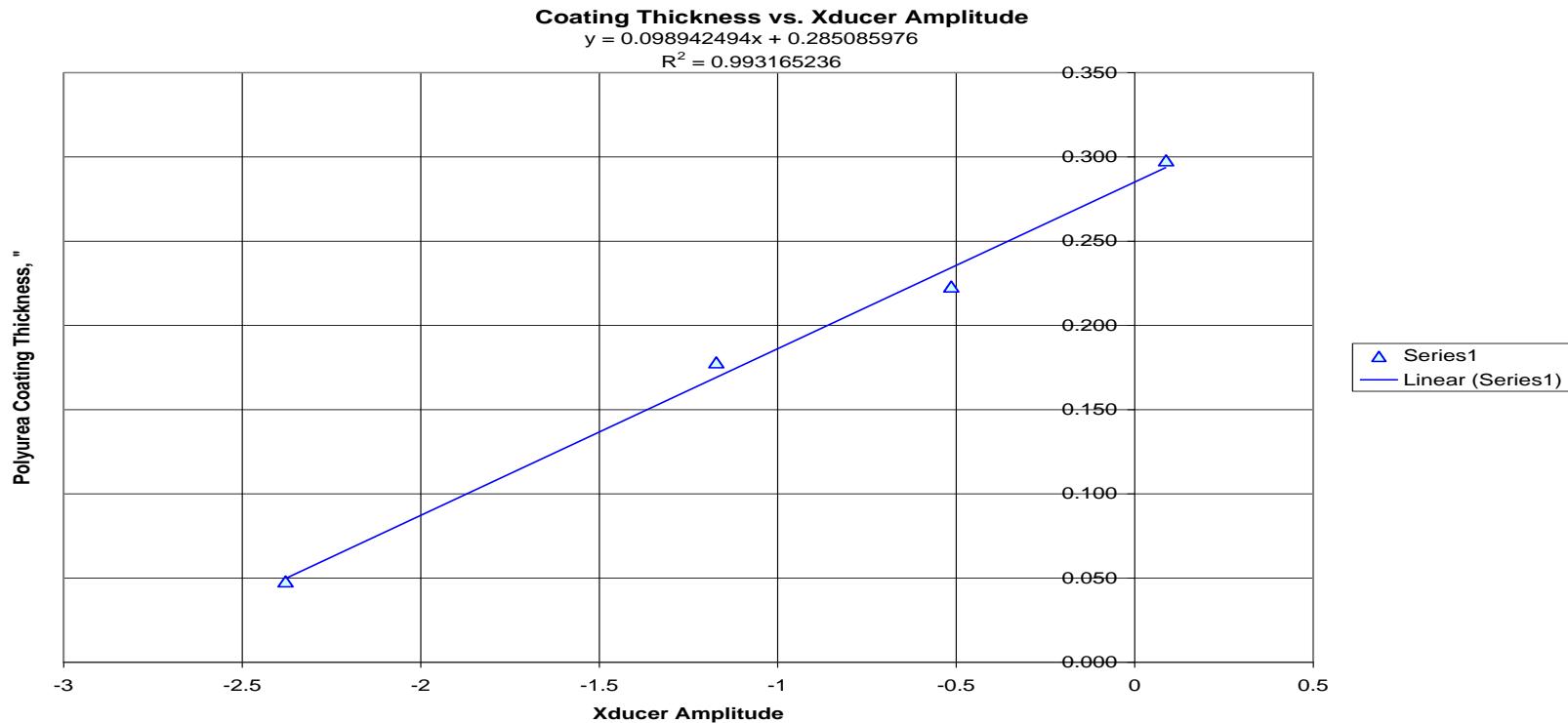
# Scan of Concrete Coupon with Polyurea Coating Step Wedge



Above is the “slice” of the data used to develop the calibration curve. The scanning software permits any region to be selected and an average over any selected area can be automatically computed. This permits the simultaneous determination of minimum, maximum and average coating thickness.

# Calibration Curve developed from Concrete Coupon Step Wedge

Evisive Scan Xducer Amplitude	Measured Coating Thickness	Calculated Coating Thickness	Difference, "	Difference, %
-2.448	0			
-2.37845	0.048	0.049756201	0.0018	3.658752387
-1.17148	0.178	0.169176823	-0.0088	-4.956840939
-0.51357	0.223	0.234272079	0.0113	5.054744106
0.08802	0.298	0.293794894	-0.0042	-1.411109288



Above is the calibration curve which was developed using the measured thickness and averaged data from the scan software. This curve allowed computation of the actual thickness from the scan data to within 0.011". When variations in the "actual" thickness are corrected for, the curve is accurate to within 0.005".





Defense and Aerospace Applications

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