



( Improved Sherardizing Vapor Deposition)

## Sample Work Handling Report

<b>Customer:</b>	DISTEK NA	<b>Date:</b>	2011/07/05
<b>Process:</b>	SST DIN EN ISO 9227	<b>Report No.:</b>	
<b>Author:</b>	L. Plate	<b>T-No./Sample No.:</b>	C
<b>BTT:</b>	F&S		

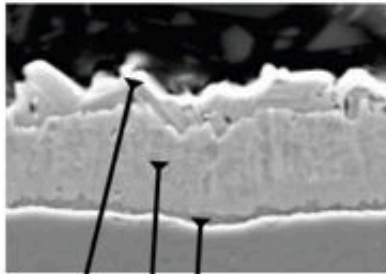
**This report contains the corrosion results of a steel Q panel coated with *ArmorGalv*<sup>®</sup> thermal diffusion and Black Topcoat after being subjected to the BMW DYCO system with rock cannon and then subjected to salt spray testing per SST DIN EN ISO 9227**



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This report contains the corrosion results of a steel “Q” Panel coated with **ARMORGALV**® thermal diffusion and a Black Organic Topcoat after being subjected to the **BMW DYCO** test system, whereby rocks are “shot” at the panel from a cannon at 100 kilometers per hour and then subjected to salt spray testing per SST DIN EN 9227. This simulates what will happen to undercarriage parts that are subjected to ongoing contact with road debris during use.

**1. BASECOAT: *ArmorGalv*® Thermal Diffusion 25µ:**



Phase	Formula	Iron Content	Space Group	Lattice Parameter
Zeta (ζ)	FeZn13	5.9 – 10,1 %	C 2/m monoclinic	a = 10.86 Å b = 7.61 Å c = 5.06 Å
Delta (δ)	FeZn11 – FeZn6.67	8.1 – 13.2 %	P63mc hexagonal	a ≈ b ≈ 12.8 Å c ≈ 57.1 – 57.6 Å
Gamma (Γ)	Fe5Zn21 – Fe4Zn9	18 – 55 %	F43m (I43m) cubic	a = 17.98 Å (a ≈ 8.95 – 8.99 Å)

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## *Environmentally Friendly* Thermal Diffusion Galvanizing Process

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- 2. TIE-COAT:            **ARMORGALV<sup>®</sup>** Cr (reach compliant)
- 3. TOPCOAT:            **ARMORGALV<sup>®</sup>** BLACK SL

### TEST RESULTS

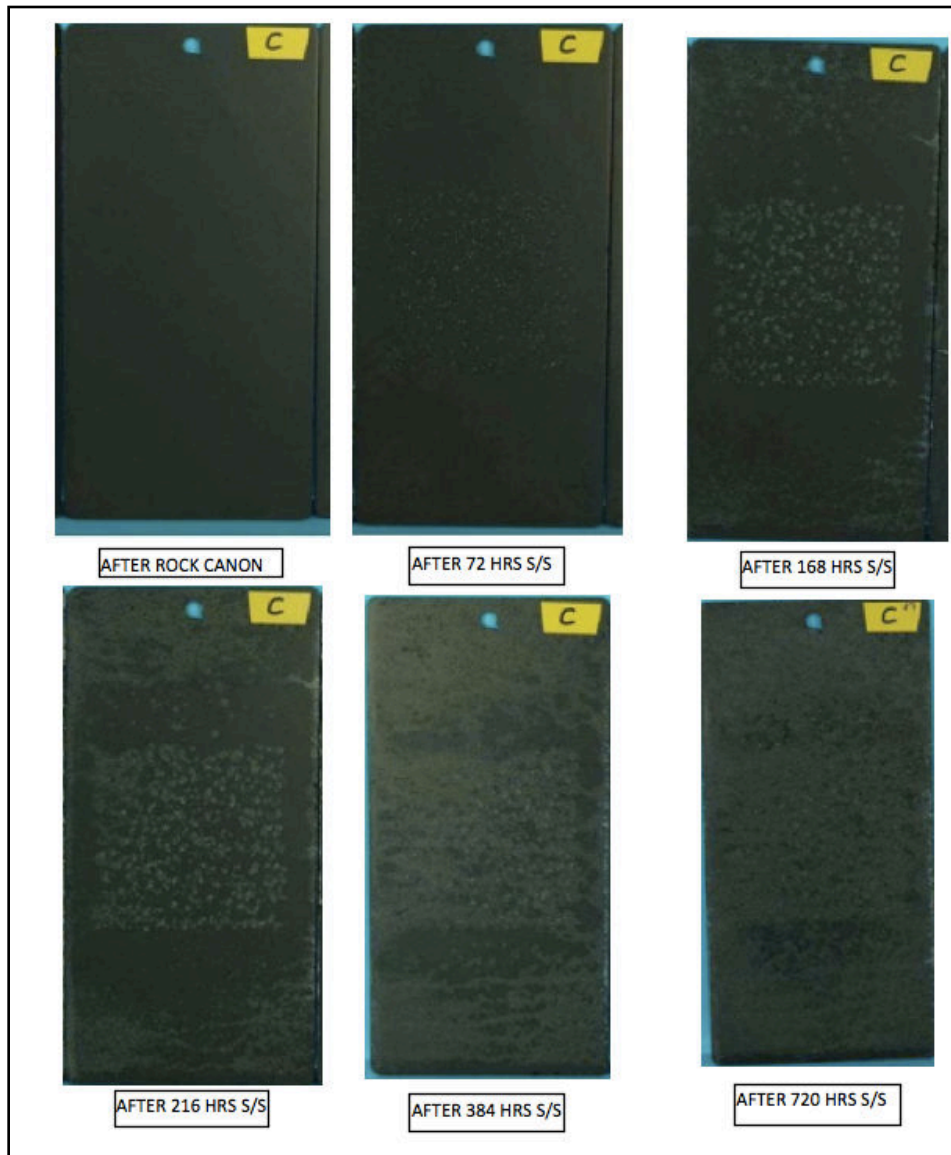
FIRST WHITE RUST	RED RUST SPARKLES	TEST END @ 1008 HRS
168 HOURS	NONE	SOME WHITE RUST ONLY

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### PHOTO DOCUMENTATION DETAILS



1800 Touhy Avenue; Elk Grove, IL 60007 Plant: 847-640-1600 Sales: 617-566-0058

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AFTER 1008 HOURS S/S

The salt spray testing was stopped at 1,008 hours with no signs of red rust.

If you refer to the above structure of the **ArmorGalv**<sup>®</sup> coating at the beginning of this report it will explain why the **ArmorGalv**<sup>®</sup> coating resisted the impact of the DYCO BMW CANON TEST so well. The Gamma and Delta phases have become integrated with the steel surface by inter-diffusion and can not be easily physically removed from the original substrate.

Therefore this coating system seems very well suited for areas of a vehicle that will be impacted by road debris.