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Sample Work Handling Report

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

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

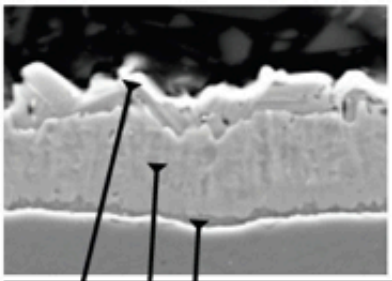
DiSTeK N.A. LLC

Environmentally Friendly
Thermal Diffusion Galvanizing Process

(*Improved* Sherardizing Vapor Deposition)

This report contains the corrosion results of a steel "Q" Panel coated with **ARMOR***GALV*® 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: Armor*Galv*® 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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2. TIE-COAT: **ARMOR***GALV*® Cr (reach compliant)
3. TOPCOAT: **ARMOR***GALV*® 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

AFTER ROCK CANON

AFTER 72 HRS S/S

AFTER 168 HRS S/S

AFTER 216 HRS S/S

AFTER 384 HRS S/S

AFTER 720 HRS S/S

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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®** coating at the beginning of this report it will explain why the **ArmorGalv®** 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.

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