



FUSED ARMOR, INC.

Stronger Than Stainless Steel®

No Corrosion - No Rust®

Testing Summary by Type

Rev. Jan., 2015

Test	Date	Test Site	Brief Description	Results	Comparisons	Comments
Abrasion Resistance Abrasion Wheel C07-1250.1 ASTM G 65 Procedure A Abrasion Wheel ASTM G 65 Procedure A Abrasion Wheel ASTM G 65 Procedure C	29-Aug-07	Ludwig Associates Ltd - Edmonton	Dry sand rubber wheel wear test - 2000 revolutions	0.880 gram material loss		8 mil (est.) CR300 on 1018 steel
		Ludwig Associates Ltd - Edmonton	Dry sand rubber wheel wear test - 2000 revolutions	0.723 gram material loss		10 mil CR300 LTX on 1018 steel
		Ludwig Associates Ltd - Edmonton	Dry sand rubber wheel wear test - 100 revolutions			10 mil CR300 LTX on 1018 steel
Corrosion Resistance WSA - M2P170 - A3 WSS - M2P178 - A1	5-Jan-05	Ford Central Lab. Dearborn Mich.		60 cycles no visible impact	ASTM - D160 equivalent. Equal 150K 15 yr Cat Conv	Clad low carbon and stainless steel coupons
	23-Oct-03	Ford AZ Proving Yucca, AZ	Heat and Water Quench	less than 1% surface rust		
Ductility Guided Bend Test C08-572.1 Non-Std Test	25-Mar-08	Ludwig Associates Ltd - Calgary	2" plunger (1" radius) 180° bend	Minimal stress lines only, no cracks or openings	Typical paint cracks at 5-10° bend, epoxy at 10-5° bend	6 mil FA CR300 on 4.75" 12 ga mild steel disk
Electrical Insulation Holiday Spark Test (electrical resistance)	2005	VTI		No spark through 10,000 volt (equipment limit)		
Holiday Spark Test (electrical resistance)	2008	Fluor Corporation Houston, TX		No spark through 40,000 volt (equipment limit)		Proprietary third party tests
Environmental Longevity FLTM BI 123-01	11-Nov-02	Ford Central Lab Yucca, AZ		60 cycles 10 year equivalent	No visible material loss	



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Maritime Uses Canadian Defence Corrosion Tests	17-Dec-14	DRDC Victoria, Canada	Eight year sea wall exposure	No corrosion or bio fouling		Third-party testing
Radioactivity Shielding	2008	Fluor Corporation Houston, TX		77% shielding with 8 mil cladding		Proprietary third party tests
Strength Crush Tests (load & linear displacement)	7-Aug-12	Stress Engineering Services Houston, TX	Clad 21" OD pipe 7/8" thick to determine load and linear displacement	Clad hardness from 573 HK to 681 HK Knoop Hardness Scale	Average Hardness of unclad pipe is 281 HK Knoop Hardness Scale	Fused Armor doubles pipe strength
Tensile Strength Tensile Test C07-1250.2 ASTM A370 - 06	20-Sep-07	Ludwig Associates Ltd - Calgary	Longitudinal extension to fracture point	Yield strength - 33,600 psi Tensile strnth - 62,600 psi	A106-04B std min - 35,000 psi A106-04B std min - 60,000 psi	~5 mil FA300 on 10" A106-B w/2x 1390°F furnace
Tensile Test C08-911.2 ASTM A370 - 06	12-May-08	Ludwig Associates Ltd - Calgary	Longitudinal extension to fracture point	Yield strength - 53,700 psi Tensile Strnth - 88,200 psi	A106-04B std min - 35,000 psi A106-04B std min - 60,000 psi	4.3 mil FA300 on 10" A106-B w/induction + water quench
Thermal Insulation Simulated Exhaust Pipe - Non-Std	30-Jan-07	Porcelain Indust for Ford Central Lab	1550° F simul exhaust gas in 2"x5' "S" bend exhaust pipe	Surface 188-237° F / 1" 93-137° F / 2" 89-129° F	Ford goal max 600-650° F 1" from exhaust pipe	FA Insul 300 on 18 ga 409 SS
Turbo Down Pipe	1998	University of WA		Cladding reduce external temp to 450 degree F	750 degree F unclad	
Thermal Shock Liquid Nitrogen Test C08-911.6 Non-Std	1-Sep-08	Ludwig Associates Ltd - Calgary	Submerge in liquid N ₂ 10 min & allow warm to ambient x 4	No coating separation or dis-bondment		8 mil (est.) mil FA300 & FA300X on 1018 steel - minus 321° F