Testing Results for RUST GRIP Coating After 1000, 2000, and 5000 Hours of Exposure in Ultraviolet and Salt-Spray Chambers

Prepared for

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Southwest Research Institute

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"SWRI" redirects here. For the charity, see <u>Scottish Women's Rural Institutes</u>.

Southwest Research Institute

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Type Independent, nonprofit research and development

Founded 1947

Founder(s) Thomas Slick, Jr.

Headquarters San Antonio, Texas, United States

Revenue \$581 million (FY 2011)

Employees 3,046 (FY 2011)

Website www.swri.org

Southwest Research Institute (**SwRI**), headquartered in <u>San Antonio</u>, <u>Texas</u>, is one of the oldest and largest independent, nonprofit, applied research and development (R&D) organizations in the <u>United States</u>. Founded in 1947 by oil businessman Thomas Slick, Jr., SwRI provides contract research and development services to government and industrial clients.

The institute consists of 11 technical divisions that offer multidisciplinary, problem-solving services in a variety of areas in engineering and the physical sciences. More than 4,000^[1] projects are active at the institute at any given time. These projects are funded almost equally between the government and commercial sectors. At the close of fiscal year 2011, the SwRI staff numbered 3,046 employees and total revenue was \$581 million. The institute provided \$6.1 million to fund innovative research through its internally sponsored R&D program.

Partial listing of research areas includes space science and engineering; automation, robotics, and intelligent systems; avionics and support systems; bioengineering; chemistry and chemical engineering; corrosion and electrochemistry; earth and planetary sciences; emissions research; engineering mechanics; fire technology; fluid systems and machinery dynamics; and fuels and lubricants. Additional areas include geochemistry and mining engineering; hydrology and geohydrology; materials sciences and fracture mechanics; modeling and simulation; nondestructive evaluation; oil and gas exploration; pipeline technology; surface modification and coatings; and vehicle, engine, and powertrain design, research, and development.

SwRI initiates contracts with clients based on consultations and prepares a formal proposal outlining the scope of work. Subject to client wishes, programs are kept confidential. As part of a long-held tradition, <u>patent</u> rights arising from sponsored research are often assigned to the client. SwRI generally retains the rights to institute-funded advancements.

The institute's headquarters occupy more than two million square feet of office and laboratory space on more than 1,200 acres in San Antonio on the city's West Side. SwRI has technical offices and laboratories in <u>Boulder</u>, <u>Colorado</u>; <u>Ann Arbor</u>, <u>Michigan</u>; <u>Warner</u> <u>Robins</u>, <u>Georgia</u>; <u>Ogden</u>, <u>Utah</u>; <u>Oklahoma</u>

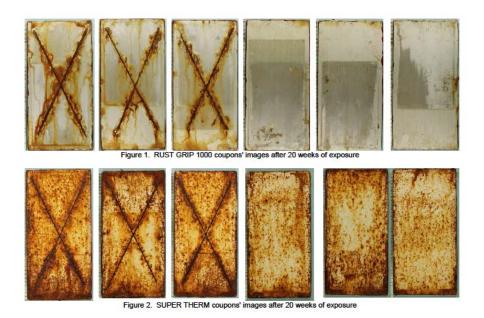
<u>City</u>, <u>Oklahoma</u>; <u>Rockville</u>, <u>Maryland</u>; <u>Minneapolis</u>, <u>Minnesota</u>; <u>Beijing</u>, <u>China</u>; and other locations. The institute also provides environmental monitoring expertise at munitions disposal sites at the <u>Umatilla Army Depot</u> at <u>Hermiston</u>, <u>Oregon</u>, and the <u>Pine Bluff Chemical Depot</u> at <u>Pine Bluff</u>, <u>Arkansas</u>.

Please find the images of the plates after 20 weeks of exposure. My assessment regarding the RUST GRIP, RUST GRIP 1000, and SUPER THERM remains same as the one after 8 weeks of exposure.

All as-received plates of RUST GRIP 1000, and MOIST METAL GRIP are rated at 10 as per ASTM D610-8. Two of the three RUST GRIP plates are also rated 10. The third RUST GRIP plate is somewhere between 9 and 10. I have also attached the eight-week image of this plate. However, if we conduct a combined analysis of the three RUST GRIP plate, the coating will be rated at 10.

The as-received plates of SUPER THERM continue to be rated at 6-P as per ASTM D610-8. This rating means that 1 percent of the plate surface has rusted. We have also reapplied the covering coating solution on the edges of all the plates. Payan

Figure 1. RUST GRIP 1000 coupons' images after 20 weeks of exposure
Figure 2. SUPER THERM coupons' images after 20 weeks of exposure



As stated from these results, the scribe plates for RUST GRIP are rated perfect 10 score.