



# Carlson Testing, Inc.

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## *CEASE FIRE CORROSION AND DETERIORATION STUDY SUMMARY REPORT*

CF33 is Cease Fire's proprietary blend of dry powder agent, a main fire extinguishing component in the Cease Fire CF-800 model. In order to determine the propensity of the CF33 to induce visible corrosion or deterioration on various metal and polymeric materials, an experiment was conducted in May 2011, which exposed these elements to an amount of dry powder agent that would presumably occur from a discharge event. In this experiment, CTI exposed samples of the various materials to a 1mm thick layer of CF33 for up to a 96-hr period at 85% humidity and a temperature of 72° F.

Similar testing had been previously conducted by Quantum Laboratories on ferrous metal samples without any reported adverse effects of corrosion or deterioration. The present tests were conducted on the following polymers: polypropylene-polystyrene, polycarbonate-ABS, PVC, and high density polyethylene fiber optic cable jacketing. These tests were also conducted on the following metals: lead and copper.

Coupons of each material were prepared. One of each was labeled 'Control' and no powdered agent was placed on them. The other samples were labeled and each had a 2" wide, 1mm thick layer of powdered agent applied. The PVC polymeric cabling was prepared to produce a sample area for which powdered agent was applied by hand and visually estimated to be 1mm thick or thicker. At each time interval, the control and one of the powdered samples were removed for inspection and evaluation for signs of deterioration. Samples were evaluated at 24 hours, 48 hours and at 96 hours.

As each sample was removed from the controlled environment, it was inspected multiple times: before removal of powder, after removal by shaking and tapping, after brushing off of powder with a dry cloth, and after removal of residual powder with a cloth dampened with water. For the metal samples, additional cleaning was performed to confirm findings.

All polymer and metal samples tested showed no adverse effects of corrosion or deterioration due to CF33 dry powder agent.

Respectfully submitted,

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Special Project Dept Manager

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