

Colorado Division of Fire Prevention and Control

Fort Collins, Colorado



The names Cameron Peak, East Troublesome and Pine Gulch have eclipsed all others as the top three largest wildfires in Colorado recorded history, consuming more than 540,000 acres along with hundreds of structures. More worrisome, is the fact all three record breaking fires occurred in 2020. Colorado's perfect storm of wildfires this season made for seemingly endless days, weeks and months while greatly taxing the resources of the Colorado Division of Fire Prevention and Control (DFPC), as well as the local fire agencies involved.

Whether it's a lightning strike, poorly quenched campfire, arson or a cigarette tossed carelessly from a passing vehicle, it just takes an instant to spark a fire capable of consuming everything in its path. Fast traveling wildfires regularly place both human

and wildlife at great risk. The ever-vigilant DFPC must remain prepared at a moment's notice to assist local agencies with firefighters and resources ready to wage a ground and/or aerial assault anywhere in the state, within just hours.

A critical component in the DFPC firefighting arsenal is the foam spraying on/off road firefighting vehicles. These powerful trucks are equipped with a low-profile 850-gallon hot-dip galvanized (HDG) steel water tank. The galvanized tank design provides a deck on top for mounting the compressors, pumps, hose reels, toolboxes, and additional storage. These specially equipped trucks convert the onboard water supply to a fire-suffocating foam, which the deck pumps can spray as far as 250 feet to the target hot spot.

The DFPC's previous steel water tank design relied on an epoxy coating to protect the water tanks internal and external surfaces from corrosion. As with any paint system, periodic maintenance is required to prevent corrosion from setting in. Over time, delamination of the tanks' internal epoxy →

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lining would produce floating debris capable of plugging-up and disabling the critical foam spraying pumps, thus compromising the trucks' primary function. With maintenance costs soaring to keep these water tanks protected and operational, the decision was made to begin utilizing a much more costly stainless steel version to overcome the corrosion and floating debris problems.

Unfortunately, within just a few years the stainless steel tanks began to develop cracks and leaks which also reduced the effectiveness of these critical go-anywhere vehicles. The DFPC eventually abandoned the stainless steel experiment altogether. In 2001 the DFPC redesigned the tank, choosing carbon steel once again to better handle the rugged terrain and this time selecting hot-dip

galvanizing to provide maintenance free protection for all internal and external surfaces. The DFPC moved forward cautiously, changing out just a few tanks each year while monitoring the effectiveness of the new design and HDG protection.

Hot-dip galvanized wildland fire truck water tanks have been a game changer for our fleet.

It has been 19 years since the first galvanized water tank rolled into action and the DFPC considers the decision in 2001 to be a complete success. With approximately 100 hot-dip galvanized water tanks now in service, the DFPC has experienced zero issues

with rust, cracking or clogged pumps, effectively eliminating the out-of-control maintenance costs associated with the previous tank designs.

As stated by DFPC's Logistics Branch Chief, Matt O'Leary, "Hot-dip galvanized wildland fire truck water tanks have been a game changer for our fleet of Federal Excess Personal Property (FEPP) fire trucks. HDG steel water tanks provide measurable benefits in strength, durability, longevity, and cost. Our HDG low profile water tank is tough, time and time again it has held up against the most extreme wildland fires in Colorado's history."

Hot-dip galvanizing made it possible to overcome the rust, cracking and maintenance concerns with a cost-effective, long-term solution that has strengthened the DFPC's ability to focus on the mission at hand. The DFPC has consulted other States and fire agencies on this tried-and-true HDG tank design. The all-encompassing success of these hot-dip galvanized tanks provides a powerful testimonial for any other organizations that may be experiencing a costly, corrosion related problem. Could the incomparable advantages of hot-dip galvanizing help solve your corrosion problem? ■

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