

VANDENBERG SPACE FORCE BASE

FIRE PROTECTION

Case Study



Santa Barbara County Fire Department Photo

SPUN CONCRETE UTILITY POLES SURVIVE FLAMES OF THE LARGEST FIRE IN VANDENBERG SPACE FORCE BASE HISTORY

SUMMARY

Vandenberg Space Force Base (VBG), headquarters for the 30th Space Wing manages the Department of Defense space and missile testing, and places satellites into polar orbit. On September 17, 2016, the Canyon Fire sparked on its South Base, quickly and aggressively becoming the largest natural disaster in VBG history, resulting in damage to more than 12,500 acres. It was the largest of at least five Vandenberg fires within one week, where at least two of which were blamed on downed power lines.^{1,2} StressCrete spun concrete poles that were installed during earlier system hardening efforts survived the onslaught of flames due to their fire resistant qualities.

CANYON FIRE SPECIFICATIONS

Location: Vandenberg Space Force Base, Santa Barbara County, California

Dates: September 17 - 24, 2016

Burn Area: 12,518 acres

Emergency Response Team: 1,142 fire fighters from over 50 agencies, 100 fire engines and 20 aircraft^{3,4}

Infrastructure Damage: 1,600 facilities with lost power, 200 power poles, 16 miles of power lines, 95 miles of communication cables and 450 ft of water pipelines⁴

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SYSTEM HARDENING WITH FIRE PROTECTION

Decreasing the number of outages, decreasing restoration time, limiting the amount of damage to the system, protecting the most valuable and hard-to-replace assets, and keeping service on for critical infrastructure are common objectives of system hardening initiatives.⁵ The most common hardening practice for electric transmission and distribution systems is upgrading poles and structures with stronger materials.⁶ With VBG's system hardening initiatives, one practice they implemented was to upgrade some of their power poles from wood to spun concrete. Over the course of two years, they installed 181 StressCrete spun concrete poles to improve their system, having a number of hardening benefits including fire protection, should a natural disaster such as a wildfire occur on the base.



THE CANYON FIRE



Canyon Fire / Mike Eliason / Santa Barbara County Fire Department Photo
Canyon Fire as seen from the Space Launch Complex-3 / Mike Eliason / Santa Barbara County Fire Department Photo

The Canyon Fire was a devastatingly aggressive fire that spread very quickly, damaging over 12,500 acres. "Wooden power poles were burned by the blaze, with electrical and communication hanging down. Collapsed guardrails rest along the sides of Arguello Road, victim to the fast-moving flames. Nearby, newly installed concrete power poles, added in the spring, survived the onslaught of flames." indicated Lt. Col. Alex Mignery from the 30th Civil Engineer Squadron who is the designated Recovery Operations Chief.⁷

A nine-phase recovery plan was implemented with full recovery from the damage taking up to two years.^{4,7}

“Nearby, newly installed concrete power poles, added in the spring, survived the onslaught of flames.”

Lt. Col. Alex Mignery,
30th Civil Engineer Squadron



References:

- 1 https://www.noozhawk.com/article/vandenberg_afb_remains_tight_lipped_about_fire_damage
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- 3 <http://www.vandenberg.af.mil/Portals/18/documents/OAK%20CANYON%20FIRE%20UPDATE%20-%201-34.pdf>
- 4 https://www.noozhawk.com/article/vandenberg_afb_commander_canyon_fire_infrastructure_damage
- 5 <http://www.energyandinfrastructure.com/sections/columns/711-hardening>
- 6 <http://www.tdworld.com/vegetation-management/hardening-system>
- 7 https://www.noozhawk.com/article/extensive_recovery



STRESSCRETE GROUP

With manufacturing facilities in five North American locations, StressCrete Group produces an extensive line of high performance decorative outdoor lighting fixtures, decorative spun concrete and metal poles, plus pole arms and accessories, bollards and site amenities. We also manufacture a vast range of spun concrete poles for power distribution and transmission, sports lighting, high-mast lighting, and specialty poles for the electrical and communications industries.

We are a family business that operates by the core values of honesty, integrity, compassion and respect to better the lives of our employees, their families, our customers and the communities we represent. StressCrete Group services multiple market segments through two divisions:

- StressCrete Ltd., established in 1953, is the longest-operating, most experienced manufacturer of spun concrete poles in North America. With plants in Alabama, Kansas and Ontario, we offer the broadest, most diverse range of spun concrete poles and bollards in the industry, with quality second to none.
- King Luminaire Co. Inc. produces a comprehensive assortment of high performance outdoor luminaires, metal poles, pole arms and accessories, plus bollards and site amenities. With an array of state-of-the-art LED Technology and HID optical systems, and plants in Ohio and Ontario, King Luminaire is a North American leader in the outdoor lighting industry.

At StressCrete Group, we provide every customer with the highest quality innovative products and work as a team to create and maintain life-long customers through world class service.