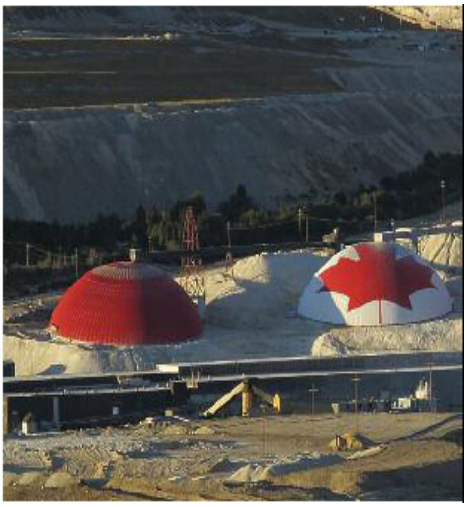
Prepainted galvanized steel covers the copper



The owner was faced with a formidable challenge last year – to beautify the stockpiles of Canada's largest open-pit copper mine. The Highland Valley Copper Mine, located in the southern interior of British Columbia, produces large stockpiles of crushed rock during its operation, and the blowing dust from these piles was a growing concern. The mine hired Triodetic in Arnprior, Ontario, to construct three massive domes (in excess of 400 metres in length from end to end) to cover the stockpiles.

HIGHLAND VALLEY COPPER MINES

BRITISH COLUMBIA

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DESIGN AND CONSTRUCTION TEAM

OWNER:
Teck Resources Limited

STEEL CLADDING SUPPLIER:
Agway Metals Inc.

STEEL DOME DESIGNER, MANUFACTURER AND INSTALLER:
Triodetic Canada

Triodetic domes are designed as double curved shells which allow great structural and cost advantages in any span: rise ratio. Less roof mass and reduced horizontal forces result in smaller support/foundation requirements.

"Achieving general acceptance of mining in the world is challenging. Our client had the vision of incorporating the Canadian flag into the design," explains Bill Vangool, Triodetic's President and Chief Engineer. "Showing the flag and reducing dust emissions was a good thing for them to do."

The domes were constructed at Triodetic's plant in Ontario, and took only three days to be assembled on site last October. Each dome required 98,825m^2 (5,000 sq. ft.) of prepainted Z275 (G90) galvanized steel cladding, using approximately 4,831m^2 (52,000 sq. ft.) and 3,995m^2 (43,000 sq. ft.) of Agway Metals 8-175 and 6-175 profiles respectively." Domes are a specialty of ours – we've been building them for over 40 years," says Vangool. "What's unique about these domes is that they were constructed on an angle, which created structural challenges, but resulted in major economies from a cost point of view for the client."

The greatest challenge was figuring out how to create the image of a flag on such a large, curved surface. To achieve the right look, panels were numbered in a complex coordinated system.

"To place the image of the maple leaf on a dome – to actually install the image of the Canadian flag on a double-curved surface – was a major challenge," says Vangool. "We had to trust that when we screwed the numbered panels into place, it would eventually look like a flag. It was an exciting but nerve-wracking process."

The prepainted galvanized steel cladding is coated with QC7437 Banner Red in the 10000 Series paint system and QC8317 White in the Perspectra Series paint system. "The cladding has a very durable finish. Steel is great for corrosion protection and it has a compact structure. It was also more cost-effective," Vangool says. "There's an inherent strength in steel and it's an easy material to work with."

The final result, Vangool says, just might be the world's largest Canadian flag. "The client was just thrilled with the results, and now people who work on site have fewer issues with volatile dust particles," he says. "I wouldn't be surprised if we receive a request for a flag from a different nation."

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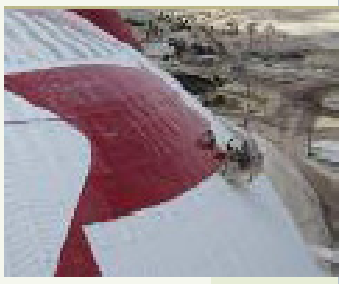
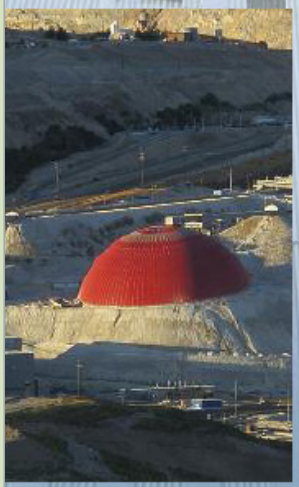


Each dome required 8,825m² (95,000 sq. ft.) of prepainted galvanized steel cladding, using approximately 4,831m² (52,000 sq. ft.) and 3,995m² (43,000 sq. ft.) of Agway Metals 8-175 and 6-175 profiles respectively.



Designed as double curved shells, to cover the stockpiles, three massive domes are in excess of 400 metres (1,312.34') in length from end to end.

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