INTERNATIONAL MOLYBDENUM ASSOCIATION
THE VOICE OF THE MOLYBDENUM INDUSTRY

Designing a memorial

Pittsburgh has a new memorial made of stainless steel, glass and stone. The work of art is a tribute to the citizenry of Western Pennsylvania. Its building materials are a reflection of the local surroundings and the industries that shaped the region. Thanks to the use of low-maintenance molybdenum-containing stainless steel the area will be graced with a memorial that is both beautiful and lasting.

In the first half of the 20th century, the steel industry in Western Pennsylvania was the global leader in steel production. During most of this time, the area produced more steel than all of England, France, Germany and Russia combined, hence Pittsburgh's nickname "the Steel City." Steel that was once vital to the advancement of the region and the country is now finding a new purpose in a recently finished memorial.

"The Southwestern Pennsylvania World War II Memorial" was designed by the famous artist Larry Kirkland of Washington, D.C. His works marry materials and shapes not only for their aesthetics, but also for significance to their surroundings and sustainability. For this particular piece, steel and glass were selected for their historical relevance to the region. He chose molybdenum-alloyed stainless steel as the focal point of the memorial, because it combines beauty and sustainability with strength and durability. With its highly-reflective surface, it also presents the desired "contemporary look" that the designer wanted to achieve.

Design and material challenges

The 52 tapered trapezoidal-shaped stainless steel spires (ranging from 4.45 to 8 m in height and 0.6 m by 51 mm width at the base) must bear the weight of 11 glass panels, framed in stainless steel, each weighing 200 kg. They buttress 12 triangular-shaped granite slabs etched with historical content weighing 300 kg each. The spires have 1,890 m of invisible welds and must retain their shape while bearing the weight of the stone and glass. They must also be resistant to corrosive elements introduced by the environment.

The stainless steel spires glisten in the sunlight of the new memorial.

These challenges are met with the use of 7 gauge 316L molybdenum-alloyed stainless steel.

Maintenance of the memorial

Western Pennsylvania's temperature extremes, coupled with high levels of air pollution, acid rain, and heavy use of de-icing salts during winter months, can have an adverse impact on the integrity of most building materials. This is one reason why public art projects in the area must include in their planning a provision that establishes a maintenance fund. Capital is held in an escrow account and is disbursed for the cleaning and upkeep of the art work over time.

The ability of molybdenum-containing stainless steel to stand up to corrosives allows it to be washed with ordinary tap water from the public supply. Gouges and scratches can easily be cleaned and removed with buffing. These two characteristics alone will aid in keeping maintenance costs in check. Also, because 316L is resistant to corrosives, "a properly designed and maintained memorial such as this could last a very long time," as Dr. Roy J Matway of ATI, Allegheny Ludlum Corporation stated.

A lasting tribute

The artwork stands as a tribute to the citizenry of the area. It is a reminder of their contributions, not only to the past, but the future. Because the designer and specifiers had the foresight to recognize molybdenum-alloyed stainless steel as a key component of the art piece for its strength, durability, aesthetics, and historical significance, this tribute will endure, like the Steel City itself. (Robert Bukk)