

Copper Contributes to the Green Olympics

Advocated by the 2008 Beijing Olympic Games, the idea of “Green Olympics” is widely accepted by the Chinese citizens. The Beijing Olympic Games is dedicated to realize “being environmental-friendly, healthy and sustainable” in every aspects of its construction, purchase, logistics, accommodation, catering, etc.

One typical example is the Beijing National Stadium, also known as the Bird's Nest. Both of its domestic water and domestic hot water plumbing systems apply copper plumbing. Besides, copper plumbing is widely used in other Olympic related facilities, such as Water Cube (the National Aquatics Center), the Beijing Shooting Range Hall, and the Beijing Capital International Airport 1st Terminal Building. The total areas of copper plumbing in all the above-mentioned facilities account for over 350,000 square meters, among which, the total copper plumbing in the Bird's Nest is longer than 20,000 meters. It is the first time for our Chinese people to apply so many copper plumbs in one single building, which is also a rare case in the international architectural history. Why have the Beijing Olympic facilities attached such great importance to copper application? The main reason is that copper has many advantages. Except for the familiarized natures of good safety, reliability, durability, plasticity, anti-corrosibility, and anti-pressure, one important advantage is its natural anti-microbial capability that can kill a number of bacteria. All these made copper wildly recommended and applied in various fields.

Recently the U.S. Environmental Protection Agency (EPA) has approved the registration of antimicrobial copper alloys, with public health claims. These public health claims acknowledge that copper, brass and bronze are capable of killing harmful, potentially deadly bacteria. Copper is the first solid surface material to receive this type of EPA registration.

The EPA registration is based on independent laboratory testing using EPA-prescribed protocols. Testing under EPA-approved protocols demonstrates that copper, brasses and bronzes are effective against a number of disease-causing bacteria. “When cleaned regularly, antimicrobial copper alloys surfaces kill greater than 99.9% of (specific) bacteria within two hours, and continue to kill more than 99% of (these) bacteria even after repeated contamination,”

In China, the Chinese Center for Disease Control and Protection used to test the anti-microbial capability of several metals in 2006 and issued a comparison report accordingly. The test found that copper is obviously against E.coli, staphylococcus aureus, and mildew. While the test report indicated, “(Under certain conditions) red copper can respectively kill 100% E. coli and 100% staphylococcus aureus on its surface, while ordinary stainless steel can only respectively kill 32.28% and 17.6%. (Under certain conditions) mildew fails to grow on the red copper surface, while it can cover 60% to 100% area of the ordinary stainless steel surface.”

Actually, copper not only demonstrates its natural anti-microbial capability in building construction, it also plays important role in our daily life. For example, more and more hospitals resort to copper alloy made bed rails, intravenous (IV) stands, dispensers, faucets, sinks and work stations to help reduce the amount of disease-causing bacteria in patient rooms. Meanwhile, more and more families take the advantage of copper anti-microbial capability to safeguard their health, by using copper-tank water dispensers, copper kitchenware, copper alloy door and furniture hardware.

In a word, nowadays copper's advantages of being environmental-friendly, reliable, durable and natural anti-microbial are applied in both the public life such as the Green Olympic facilities construction and the people's ordinary daily life. Convinced by such facts, who will not believe a more promising future of copper application?

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