

Lead-free would have saved Arctic explorer Franklin

The Swiss firm SERTO Ltd is the first to supply, at the request of its customers, tube unions in unleaded brass. The lead values of the products with no lead content fall below the stringent limit values of the American NSF. The brass is either washed out at the media contacting points or the brass tube unions are manufactured of brass which is completely free of lead.

"We have found a way to supply our customers with large and small series of tube unions in unleaded brass", product manager Richard Marzari reports. The Swiss firm SERTO Ltd now manufactures on request any of the tube unions from its product line in unleaded brass, thus complying with the world's most exacting demands for safer tube unions without lead. Lead is extremely toxic. In 1848, for example, Franklin's Arctic expedition died primarily because of lead poisoning from tinned foods, the tins having been sealed with lead solder that leached into the food.

Already below the 2013 limit values

SERTO already falls short of the 2% maximum lead content required by the German DIN 50930-6 norm in brass M and brass G alloys. The new products even comply to the most stringent of guidelines, the American ANSI/NSF 61. According to this, a litre of normalised water may contain no more than 11 ppb (parts per billion) of dissolved lead. In other words, SERTO already meets the 0.010 mg/l value required by 2013. The German drinking water ordinance of 2003, section 2, §6 (2), which stipulates a value of less than 0.025 mg/l, is also satisfied.

The Swiss manufacturer is able to create and guarantee lead-free products using two different methods. For large series, the parts from the brass M and brass G series are effectively manufactured of unleaded brass (CuZn40V). Unleaded brass is however much more difficult to process than leaded brass because it becomes considerably more difficult to machine bar stock with lower lead contents. Despite the 25% longer manufacturing time and the significantly more expensive raw material, SERTO is able to maintain moderate prices for larger quantities.

Economical solution

For small series, the media contacting components are washed out in a special process, using a low

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alkaline detergent as well as ultrasound and ultrapure water. Particularly for fittings and smaller series, this process represents the most cost effective alternative. The part remains the same, production time is neither increased nor are additional tools necessary.

Compression ferrules are supplied exclusively in lead-free CuZn40V, since the volume is economically proportionate. It is also possible, of course, to replace existing pipe unions. Only the parts which come into contact with the medium must be processed or newly manufactured, nuts or valve handwheels from the standard product range can continue to be used.

Food industry is a large customer

SERTO first introduced the pipe union with the patented and time-tested radial mounting on the market in 1952. Today the SERTO Group has approx. 150 employees and global sales in the order of 45 million Swiss francs (ca. 32 mil euros). Among its loyal customers are chemical and pharmaceutical companies, manufacturers of ozone generators, medical equipment, vehicles or wafer steppers. The tube unions of unleaded brass are largely implemented in drinking water treatment, in the food industry or in the manufacture of coffee machines for restaurants. Due to the small dimensions of its unions, SERTO holds a large market share worldwide.

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