

Copper in History

Answers

1. Copper alloys, such as bronze, hardly corrode at all and have survived for over 2000 years, even under the sea. They have always been highly-valued alloys. For historians, this has advantages and disadvantages. What are these?

Many objects that survive are in very good condition. However, over the centuries, many objects will have been melted down to be recast as new objects.

2. What properties of brass make it suitable for manufacturing watches and clocks?

Brass is resistant to corrosion, especially at sea. It is also soft enough to be cut and engraved with hand tools, leaving a sharp edge. Brass is also non-magnetic and will not exert unwanted forces on wheels and springs, however small.

3. List all the properties of bronze that make it suitable for the huge valve on the right hand side of page 2.

Bronze is very tough, strong, hard and resistant to corrosion, anti-fouling and can be cast into complex shapes.

4. What was the turning point in the history of science and technology that led to a huge increase in the use of pure copper?

By far the greatest extension in the use of copper resulted from Michael Faraday's discovery of electromagnetic induction in 1831 and the subsequent development of the electrical engineering industry, including the invention of the electrical telegraph in the early nineteenth century, which involved sending electrical signals along copper wire.

It was possible for the first time to transmit almost instant messages across continents and under oceans with widespread social and economic impacts.

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