



Bronze elements are central features to many war memorials often being used for statuary and plaques. Whilst beautiful when maintained, bronze can become dull and corroded if neglected. Exposure to pollution and weathering are the main causes of corrosion.

This helpsheet is designed to offer some basic advice about the conservation of bronze. If you require further guidance, please contact the Trust's Conservation Officer.

Problems with bronze

Pollution particles from vehicle exhausts can mix with rain on the surface of the bronze which leads to corrosion. The products of corrosion sit on the surface as powdery deposits ranging in colour from pale green to turquoise. The deposits are then drawn down into stonework by more rain and can cause staining.

Cleaning bronze

Bronze must always be cleaned by a specialist as over-cleaning can lead to loss of 'patina'. This is a microscopic layer of oxidised metal on the surface of the bronze. It traditionally has been seen as attractive and protects the bronze surface. However, if corrosion and pollution are not cleaned, they can attract more pollution particles and create a damaging cycle.

Some common problems and the cleaning solutions include:

- **Dirt and pollution**
Wash with de-ionised or distilled water and ph-neutral soap using lint free cloth or natural soft bristle brush. Then rinse and dry with another cloth.
- **Grease deposits**
As above but soap may be diluted 1:1 with white spirit to remove grease. Non-caustic de-greasing gels are available.
- **Paint removal**
Non-caustic methylene chloride-based gel should be used to remove paint.
- **Stone staining**
Make a paste of 1 part ammonium chloride/ aluminium chloride to 4 parts powdered talc. Pre-wet masonry and apply paste, leaving to dry. Thoroughly wash with water. Do not touch metal with the paste.

If above methods are not successful, then steam cleaning systems can be used on bronze. One such brand name is DOFF.

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Do not use:

- all acid or alkali-based cleaning agents;
- commercially available polishes such as Brasso;
- abrasive techniques such as sanding or using metallic brushes.

Maintenance of bronze

It is important to protect bronze from corrosion and stone from the resulting stains. Today coatings include lanolin, natural waxes, synthetic waxes and acrylic lacquers.

Some suggested coatings are:

- A mix of 40% Lanolin, 7% paraffin, 53% white spirit. Replace 2-4 times per year, removing old layer with white spirit or turpentine.
- A mix of lanolin, paraffin, beeswax and turpentine.
- Microcrystalline synthetic waxes.

Even with intermediate repairs, all coating with need complete removal and replacement up to 3 years.

Conservation professionals

War Memorials Trust recommends that complicated conservation work to war memorials is carried out by a suitably qualified professional. Below are the contact details of organisations which maybe able to provide information about conservation/restoration companies.

• The Conservation Register

The Register holds detailed information on conservation/restoration businesses in the UK and Ireland. Businesses meet specified criteria which include professional accreditation and the provision of examples of previous work for satisfied clients. You can use the website or telephone enquiry service to find conservators by type of object and geographical location.

The Conservation Register, c/o Institute of Conservation, 3rd Floor Downstream Building, 1 London Bridge, London SE1 9BG, T: 020 7785 3805, E: info@conservationregister.com, W: www.conservationregister.com

• The Building Conservation Directory

The Directory holds details of professional companies and craftsmen that deal specifically with historic buildings and monuments. An A-Z list is available on their website with details of specialism areas. It also includes information on sources of funding for historic buildings and general advice for building custodians.

The Building Conservation Directory, c/o Cathedral Communications Ltd, High Street, Tilsbury, Wiltshire SP3 6HA, T: 01747 871717, E: info@buildingconservation.com, W: www.buildingconservation.com/directory.html

Please note that this helpsheet is intended to offer informal advice and is a distillation of experience. The information contained in this helpsheet is not exhaustive and other sources of information are available.