

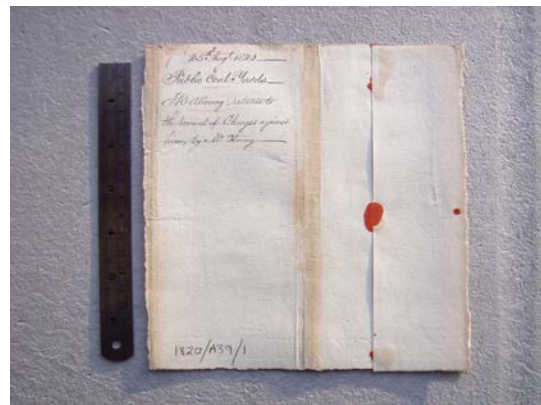
## Wax and wafer seals on the CSO–RP manuscripts

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The manuscript letters of the Chief Solicitors office registered papers were mainly written on good quality cotton or linen paper, occasionally thin tissue copy papers and acidic papers made from mechanical wood pulp are included. The majority of the collection is written in stable carbon ink, although iron gall ink has been used. During this period the use of envelopes was not common, correspondence was often written on a single sheet which was folded and then closed with a seal (see photograph 1 & 2).



Photograph 1: Folded sheet - 1820-G1-1



Photograph 2: Attachment of two sheets with seals - 1820-A39-1

These closing seals are known as wax seals, however they are not only made from wax, but include resin and coloured pigments, often red or black[1] (see photographs 3 & 4).



Photograph 3: Red resinous-wax seal -1820-G21



Photograph 4: black resinous-wax seal - 1818-129

The other type of seal found throughout the collection is known as a wafer seal. E. O'Loughlin describes wafer seals as "thin, flat, baked adhesive discs made from starch, binders and pigments"[2]. Commonly used between the seventeenth and nineteenth centuries, the wafer seals were dampened and applied to paper which resulted in the two sheets becoming glued together once dried. In this collection most of the wafer seals are red, with or without a grey metallic layer. However it is also common to find black wafer seals, and on occasion some that are green, yellow or without pigment altogether (see photographs 5, 6, 7 & 8). They are small in diameter, and vary between 1.3 and 3cm in size, the wax seals tend to be larger and range from 1.2cm to 6cm in diameter.



Photograph 5: red wafer seal - 1820-B147 DT2



Photograph 6: red wafer seal with a grey layer - 1820-B14

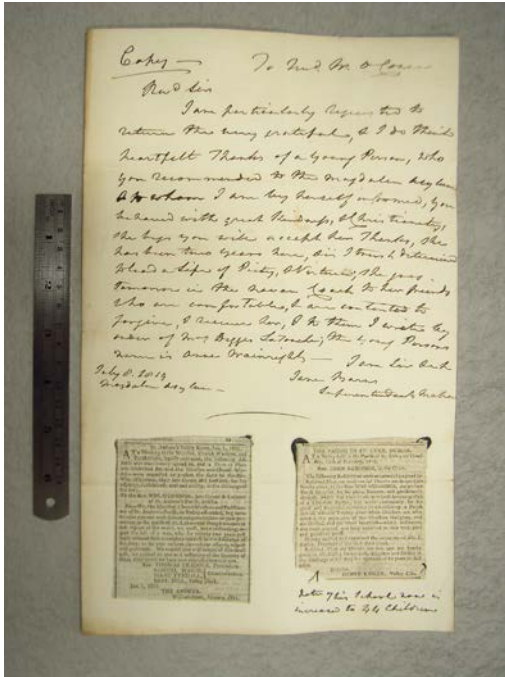


Photograph 7: black wafer seal - 1820-B102 AT

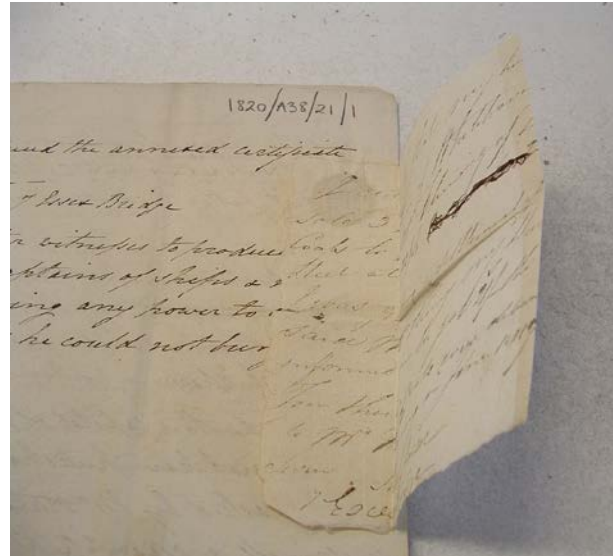


Photograph 8: green wafer seal - 1820-B1 AT

Both types of seals have a range of purposes such as identifying the writers or signatory of the document, grouping two connected papers together (like a clip or staple –), or closing and sealing the letters (see photograph 9, 10 & 11). In many cases wax seals are found placed on top of wafer seals, the latter was used to close paper envelopes, whilst the wax seal carried the personal insignia.



Photograph 9: Articles attached to the letter with resinous wax seals - 1820-B75



Photograph 10: Note attached to the letter with a wafer seal - 1820-A38-21-1



Photograph 11: Papers attached together with resinous-wax seals - 1820-G14-1

## Conservation Issues

Before treatment observations indicated that the seals can cause oxidization, stains and tensions within the paper support (see photograph 12). Sometimes the wax seals, through the diffusion of the binding agent, can unintentionally stick papers together. Wafer seals are often found to be mouldy (see photograph 13), whilst melted surfaces on wax seals can result in a loss of information. Both types of seals can be brittle and dusty. Finally, the two kinds of seals often obscure written information when they are applied on the text. Sometimes this is also due to the use of wafer seal as a way of attaching two papers together, which masks information and makes the handling and subsequent surrogate production difficult[3].



Photograph 12: resinous-wax seal causing tension to the paper - 1818-209-1



Photograph 13: Mouldy wafer seal -1820-D23-2 BT

A number of problems associated with the seals was also encountered during the conservation treatment. The brittleness of the seals often made handling the documents difficult, and the choice of best consolidant for these seals during repair had to be identified. The potential risk of new cracks appearing in the wax seals during flattening was also of concern, as was the possibility of the creation of new tensions within the paper. The reaction of wafer seals to humidity was also an issue; water could cause them to either separate or stick to the blotters during the pressing process. After treatment, the main consideration was to determine and provide the physical protection of the seals, in order to avoid adhesion to the paper and to prevent any further degradation during handling.

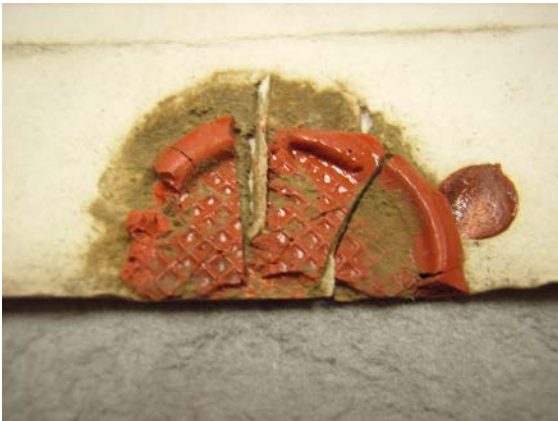
## Problem solving

Various solutions were found for the problems outlined. In cases where the text was masked, the decision was made, in consultation with the archivists, to separate the two papers. Each paper is numbered and they are kept together with an archival paper clip or inserted in an Archival Text® folder (see photograph 14).

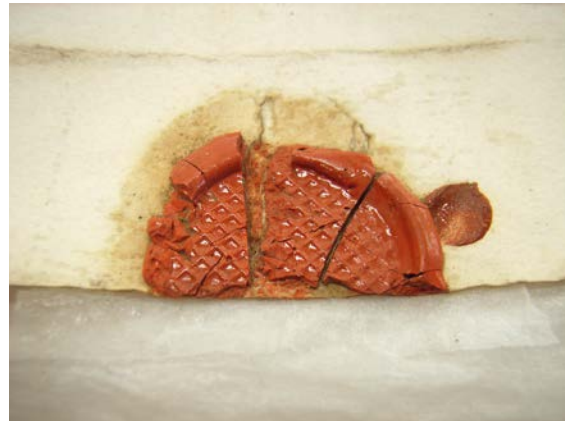


Photograph 14: Archival folder protecting seals

When a seal is mouldy or seriously brittle, the dry-cleaning method is modified by using tweezers, a brush or small pieces of Smoke sponge® latex eraser (see photograph 15 & 16).



Photograph 15: Resinous-wax seal on top of wafer seal: the wafer seal is mouldy - 1820-D31-2 BT



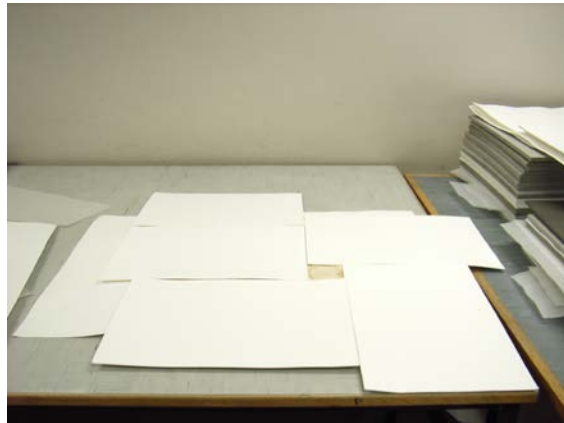
Photograph 16: After treatment - 1820-D31-2 BT

When consolidation was required, wheat starch paste and either lens tissue or Japanese paper was used to repair and reinforce the primary support. Ordinarily, wax seals are consolidated by melting the original material, adding wax, or using a synthetic glue[4], and wafer seals are consolidated with a synthetic glue activated with solvents[5]. The choice of wheat starch here was determined both by the materials and the future use of the documents. In this case, the main materials are paper and thin layers of wax or wafer seal and the simple, most minimal and least harmful treatment was needed. After physical tests, the wheat starch paste was found to provide a sufficient bond.

To avoid adhesion to the blotters during the flattening, the seals are protected by a sheet of silicone paper (see photograph 17). The process of flattening the documents with wax seals was more problematic. After some trials with various combinations of felts, different thickness of blotter, holes cut in blotters, weights and a press, the best results were found to be obtained under a press, with the document sandwiched between two thick blotters and boards on either side. If the seal is on both sides, it was found to be better to isolate the document and build a system adapted to the shape of the seal, with successive layers of cut blotters to provide both protection of the seal and support to the paper during the flattening (see photograph 18). Finally, a piece of Archival Paper® is inserted when there was a risk of adhesion between seal and paper, and the most fragile documents were housed in a Mylar® pocket.



Photograph 17: Seals protected with silicone paper before flattening



Photograph 18: Layers of blotters protected the seal

## Conclusion

The solutions described, for the documents with seals, were chosen in the context of the overall treatment and having proven their efficiency and effectiveness, they are now integrated into the conservation work on the collection.

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[1] V. Viñas, R. Viñas, *Les techniques traditionnelles de restauration : une étude RAMP*, Paris, UNESCO, 1992,  
<http://www.unesco.org/webworld/ramp/html/r8817f/r8817f0c.htm#6.%20les%20sceaux>

[2] E. O'Loughlin, "Wafer and wafer seals: history, manufacture, and conservation", in *The Paper Conservator*, n°20, 1996, p. 8.

[3] Here it has not been used as a correction of writing as found in the article of A. Low, "The conservation of Charles Dickens's Manuscripts", in *V&A Conservation Journal*, n°9, October 1993.

[4] A. Kerlo, *La conservation-restauration des sceaux en cire apposés sur parchemin*, Mémoire de master de Conservation-restauration des biens culturels, Paris 1 Panthéon-Sorbonne, Novembre 2006, p. 91 et V. Viñas, R. Viñas, *Op. Cit.*, cf. 6.3.2. Sceaux plaqués par apposition directe.

[5] E. O'Loughlin, *Op. cit.*, p. 13.