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Qualitative analyses of some Roman brooches from Walls, Dorset

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The twelve brooches were analysed qualitatively by x-ray fluorescence (XRF); the results are given in the table. See the notes to the table for definitions of the alloy names used.

The Maiden Castle and related types were all bronzes, some containing a minor amount of zinc too. The similar brooches from Tarrant Hinton and the single example from Henley Wood were also bronzes.

The Hod Hill brooch, as with most of this type, was of brass containing a little tin. The Applied Hook brooch was also of brass.

The Dolphin brooch was of bronze while the other three brooches (Nos 3, 10 and 11) were all leaded bronzes. Leaded bronze is the normal alloy for T-shaped, south-western brooch types so No 3 conforms to the expected pattern. Although No 10 is of an unusual if not unique design, its composition is the same as most enamelled bow brooches which suggests it could have been an experiment by an innovative craftsman.

Trumpet brooches are found in a wide range of alloys so the leaded bronze of No 11 is no real surprise. Its catchplate has been repaired in antiquity with a rivetted-on metal sheet.

Two of the brooches, Nos 3 and 10 are decorated with enamel. That in the central field on No 3 is blue while that in the field nearer the foot now looks green, which may be its original colour. The enamel on No 10 is all rather badly decayed with most of the fields now appearing one shade or another of green. The variation in the colours suggests an original polychrome effect. Some of the fields appear to have had an inset (hemispherical) spot of a second colour of enamel.

Table: XRF Results

Brooch No	Alloy
1	Brass
2	Bronze/gunmetal
3	Leaded bronze
4	Bronze
5	Bronze
6	Bronze/gunmetal
7	Bronze
8	Bronze/gunmetal
9	Brass/gunmetal
10	Leaded bronze
11	Leaded bronze
12	Bronze

Notes to table:

Bronze = copper-tin alloy

Bronze/gunmetal = bronze with a detectable though minor amount of zinc too

Brass = copper-zinc alloy

Brass/gunmetal = brass with more than a trace of tin

Leaded bronze = bronze with more than a few percent of lead