BINDING (OF A RELIGIOUS BOOK) - ROMANIA

Artefact name	Binding (of a religious book)
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Url	/artefacts/1577/

The object



Credit HE-Arc CR, C.Degrigny

Fig. 1: Binding (of a religious book) representing the Annunciation scene (back side and spine). Dimensions: L=47cm; l=30cm + W spine: 8cm.

Description and visual observation

Description of the artefact	Back plate and spine of a binding (of a religious book) depicting the scene of the Annunciation. The metal sheets (fixed by rivets) are embossed and the back plate have four fixing holes. Deformed, locally torn, abraded on the reliefs, heavily tarnished but showing a yellowish metallic appearance and traces of greenish and whitish compounds in hollows.
Type of artefact	Religious object

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Origin	Museum collection of Timisoara diocese, Timişoara, Timiş, Romania
Recovering date	None
Chronology category	None
chronology tpq	----
chronology taq	----
Chronology comment	
Burial conditions / environment	Indoor atmosphere
Artefact location	Museum collection of Timisoara diocese, Timişoara
Owner	Museum collection of Timisoara diocese, Timişoara
Inv. number	TMSC.DECK 001
Recorded conservation data	No record but evidence of cleaning residues

Complementary information

None.

Study area(s)



Credit HE-Arc CR, C.Degrigny

Fig. 2: Location of areas observed: white compound (white arrow) and dark-red (dark-red arrow),

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Fig. 3: Location of areas observed: light green compound (light green arrow) and dark green (dark green arrow),

Credit HE-Arc CR, C.Degrigny



Fig. 4: Location of the top part of the back side with indication of XRF analyse (red circle),

Credit HE-Arc CR, C.Degrigny

Binocular observation and representation of the corrosion structure

The schematic representation below gives an overview of the corrosion structure(s) encountered on the back side of the binding from a first visual macroscopic observation.

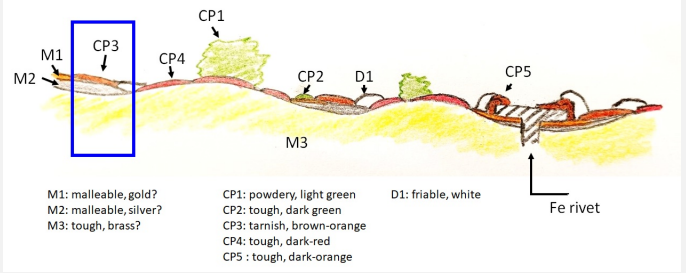


Fig. 5: Stratigraphic representation of the back plate of the binding by macroscopic observation, with indication of the corrosion structure used to build the MiCorr stratigraphy of Fig. 4 (blue rectangular),

Credit HE-Arc CR, C.Degrigny.

MiCorr stratigraphy(ies) – Bi

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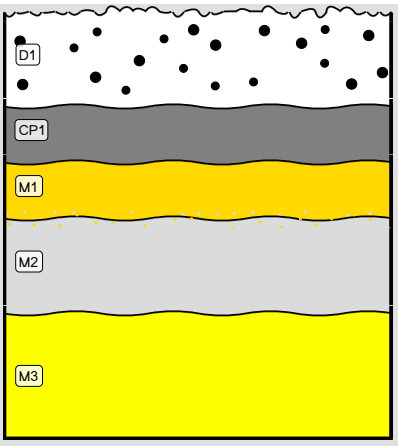


Fig. 6: Stratigraphic representation of the corrosion structure of the back side of the binding observed macroscopically under binocular microscope using the MiCorr application with reference to Fig. 4. The characteristics of the strata, such as discontinuity, are accessible by clicking on the drawing that redirects you to the search tool by stratigraphy representation, Credit HE-Arc CR, C.Degrigny.

Sample(s)

Description of sample

Alloy	None
Technology	None
Lab number of sample	
Sample location	None
Responsible institution	None
Date and aim of sampling	

Complementary information

None.

Analyses and results

Analyses performed:

Non-invasive approach

XRF with handheld portable X-ray fluorescence spectrometer (Bruker Tracer® 5i). Alloys 2 mode, acquisition time 30s.

Non invasive analysis

XRF analysis of the back side of the binding was carried out on one representative area (Fig. 4).

Results of the area observed indicate that the metal sheets are made of brass. The presence of Ag and Au seems to validate the hypothesis made in Fig. 5 and represented on the stratigraphy of Fig. 6.

Elements (mass %)	Cu	Zn	Ag	Au	Si	Al	Mg	S

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	%	+/-2σ	%	+/-2σ	%	+/-2σ	%	+/-2σ	%	+/-2σ	%	+/-2σ	%	+/-2σ	%	+/-2σ
1	54	0.3	29	0.2	3	0.1	2	0.1	7	0.2	3	0.5	2	0.5	1.5	0.04

Table 2: Chemical composition of the surface of the back side of the binding at one representative point shown in Fig. 4.
Method of analysis: XRF, National Museum of Banat, Timisoara, Romania.

Metal

As mentioned in the previous paragraph, the metal sheets are made of brass which has been silvered and then gilded. There is not enough information to determine whether they have been fully or partially coated.

Microstructure None

First metal element Cu

Other metal elements Zn, Ag, Au

Complementary information

None.

Corrosion layers

As mentioned before, the metal surface is heavily tarnished. Greenish compounds can be found locally, while and whitish compounds are usually found in hollows.

Corrosion form Passive

Corrosion type Silver tarnishing

Complementary information

None.

MiCorr stratigraphy(ies) – CS

Synthesis of the binocular / cross-section examination of the corrosion structure

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None.

Conclusion

The back plate and spine of the binding are made of brass sheets, silvered and gilded. They are heavily tarnished and it is supposed greenish and whitish compounds in hollows.

References

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