

ANALYTICAL RESULTS – OBJECT 12

PARTNER:	UNITO - CCR
TYPE OF WORK:	Painted Bench (Object 12)
COUNTRY:	Italy
CITY:	Turin
ADDRESS:	Piazza Galimberti
OWNER / CUSTODIAN:	Municipality of Turin
ARTIST:	Pao
TITLE OF THE WORK:	No title
YEAR OF EXECUTION:	2010
MATERIALS:	Spray painting on concrete

SAMPLING POINTS LOCATION





TABLE OF ANALYTICAL RESULTS

	Name of the sample	Original materials	No original materials	Pigments / dyes		Organic binders		Type of support*		Other**	
				Identification methods	Results	Identification methods	Results	Identification methods	Results	Identification methods	Results
1	White paint layer	x		ATR-FTIR SEM-EDS	Calcite, talc, Ti white	ATR-FTIR Py-GC/MS	Styrene-modified alkyd			ATR-FTIR	oxalates
2	Pink paint layer	x		ATR-FTIR SEM-EDS	Calcite, silicates, Ti white	ATR-FTIR	Alkyd			ATR-FTIR	oxalates

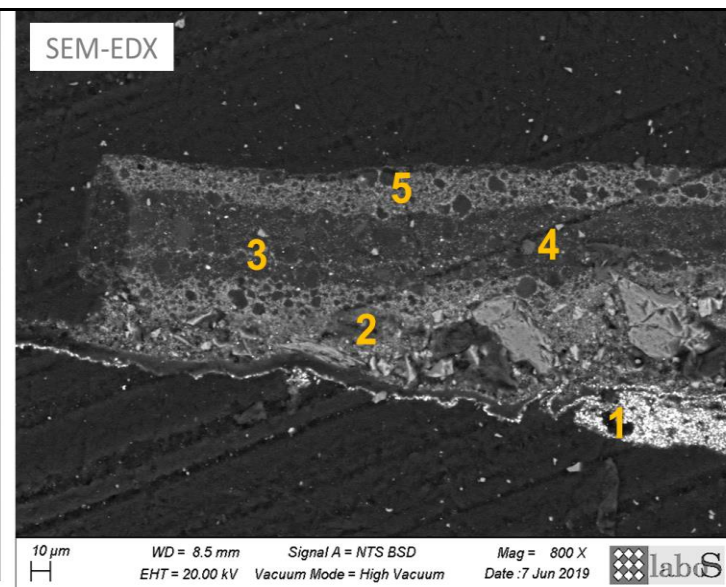
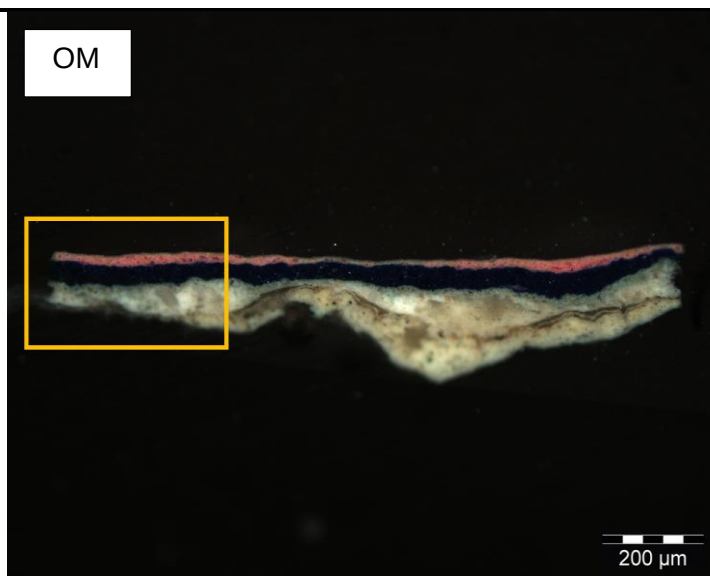
3	Blue paint layer	x		ATR-FTIR SEM-EDS	dolomite, silicates	ATR-FTIR	Alkyd			ATR-FTIR	oxalates
4	Light blue paint layer	x		ATR-FTIR	Calcite, silicates, Ti white	ATR-FTIR	Alkyd			ATR-FTIR	oxalates
5	Brown paint layer	x		ATR-FTIR	Calcite, silicates	ATR-FTIR	Alkyd			ATR-FTIR	oxalates
6	Green paint layer	x		ATR-FTIR	Calcite, silicates	ATR-FTIR Py-GC/MS	Alkyd (main) Poly BMA (secondary)			ATR-FTIR	oxalates
7	Yellow paint layer	x		ATR-FTIR	PY74, calcite	ATR-FTIR	Possibly Alkyd				
8	Black paint layer	x		ATR-FTIR	Calcite, silicates	ATR-FTIR Py-GC/MS	Alkyd			ATR-FTIR	oxalates
9	Cross Section	x									

* mortars, stone, metal ect.

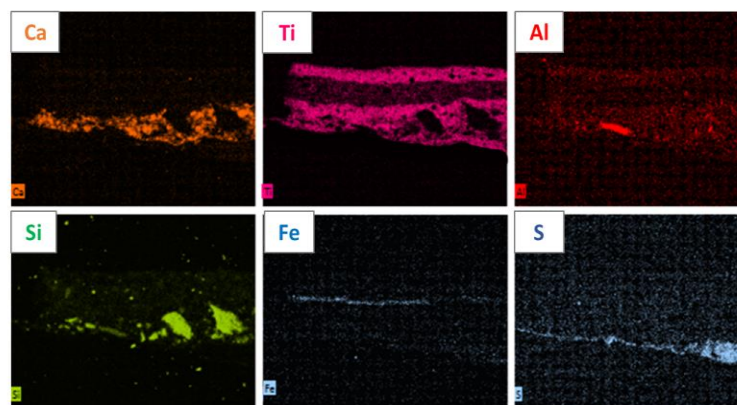
** Additional research or analyzes, for example: aging tests, colorimetry, pH...

STRATIGRAPHY OF THE MICROSAMPLES

Sample n°: OBJ12_9

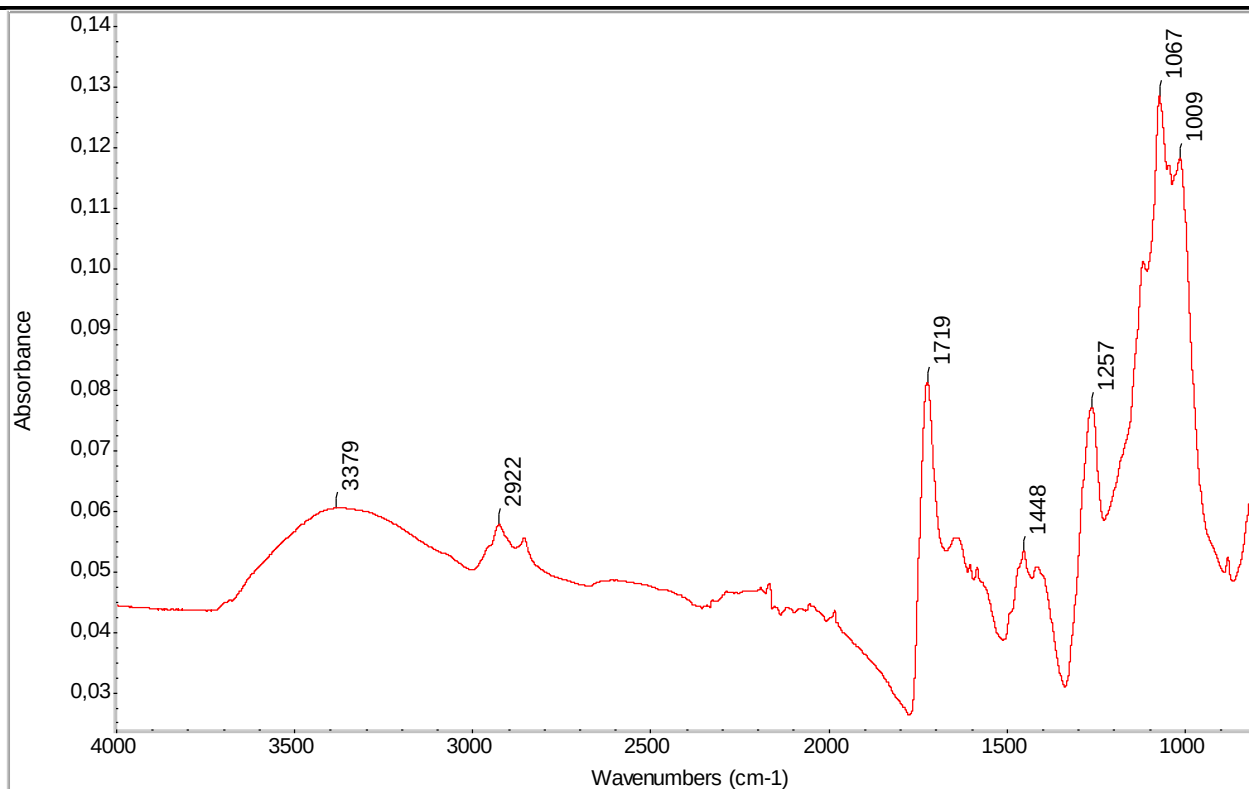


1 – white	Barium sulfate
2 – white	Si, Ca, Ti
3 – black?	Fe, Ti, Si
4 – blue	Organic? Si, (Ti)
5 – pink	Ti, + (Al) silicate inclusions



FOURIER-TRANSFORM INFRARED SPECTROSCOPY (FTIR)

Sample n°: OBJ 12-1

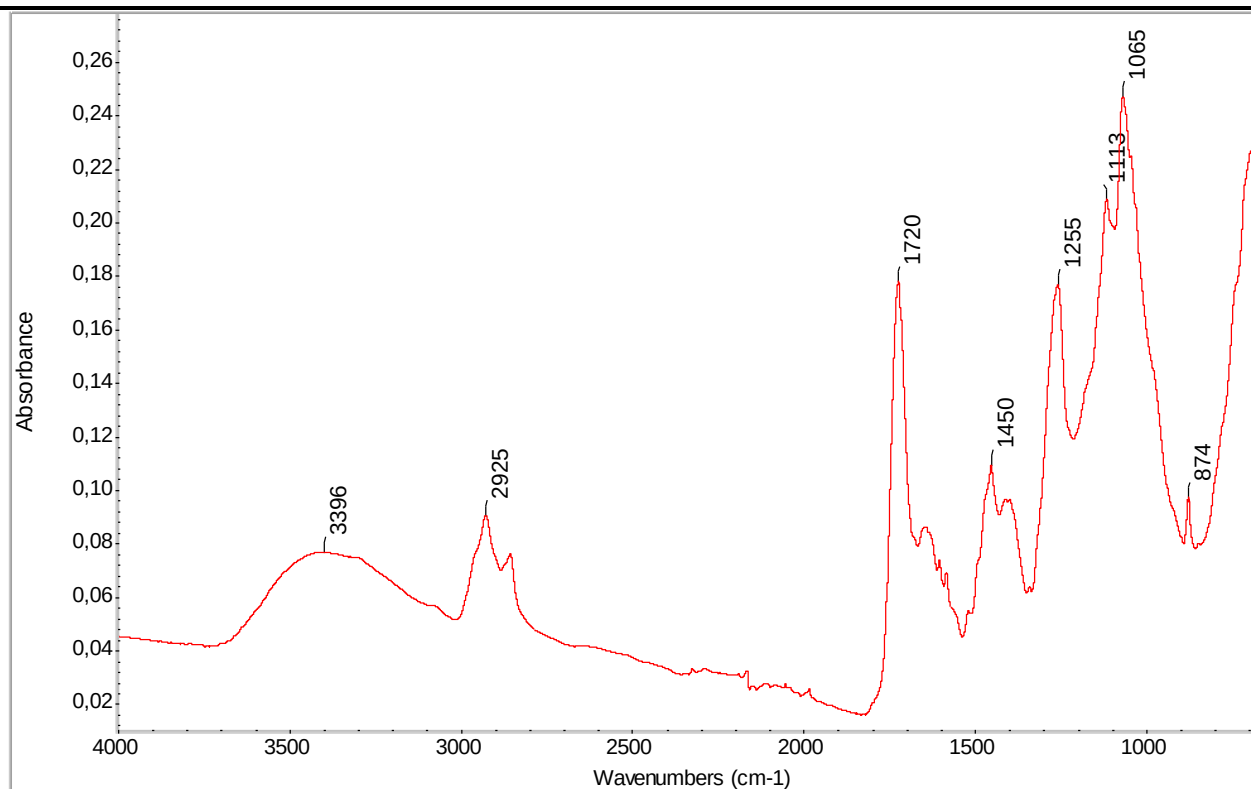


ASSIGNMENTS:

Alkyd: 2922 cm⁻¹, 2855 cm⁻¹, 1719 cm⁻¹,
1602 cm⁻¹, 1584 cm⁻¹, 1499 cm⁻¹, 1448 cm⁻¹,
1257 cm⁻¹, 1067 cm⁻¹, 1040 cm⁻¹

Titanium White : < 600 cm⁻¹

Sample n°: OBJ 12-2

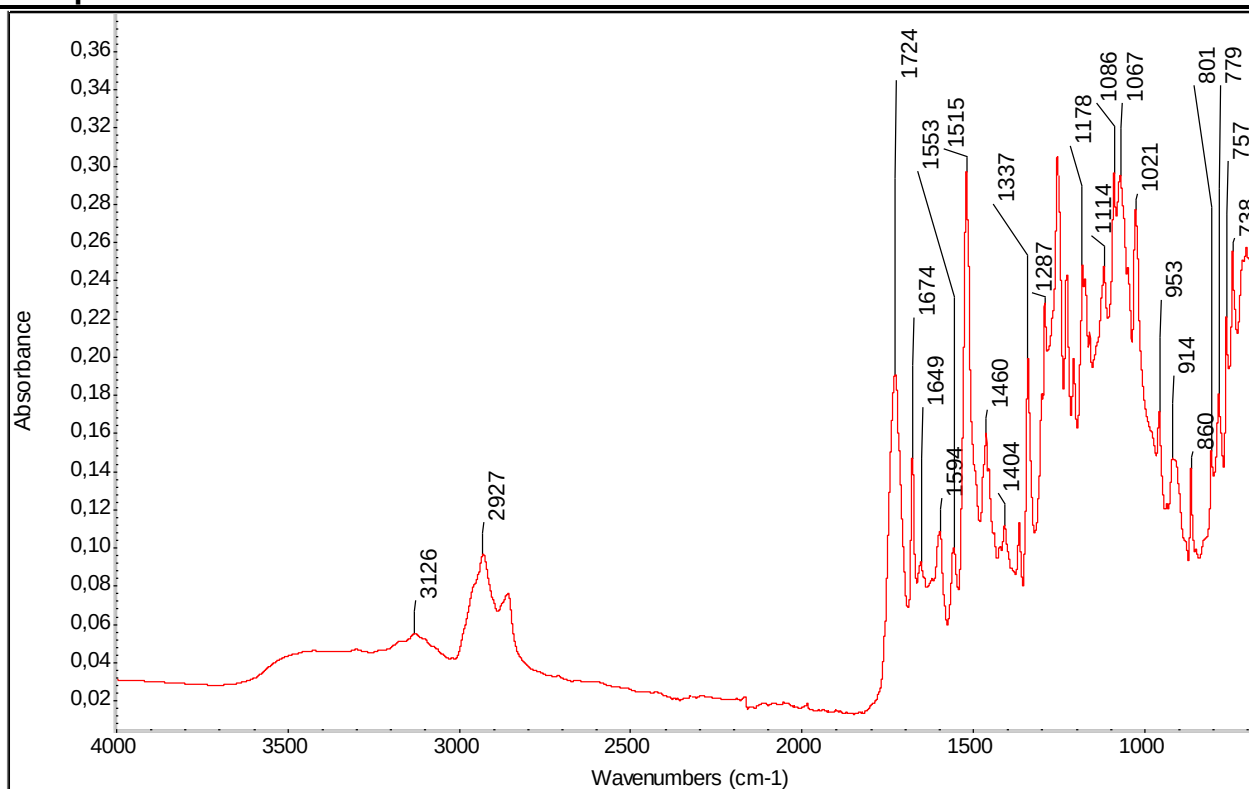


ASSIGNMENTS:

Alkyd: 2925 cm⁻¹, 2857 cm⁻¹, 1720 cm⁻¹,
 1605 cm⁻¹, 1584 cm⁻¹, 1450 cm⁻¹, 1396 cm⁻¹,
 1113 cm⁻¹, 1065 cm⁻¹, 1042 cm⁻¹

Silicates: 900-1200 cm⁻¹

Sample n°: OBJ 12-7



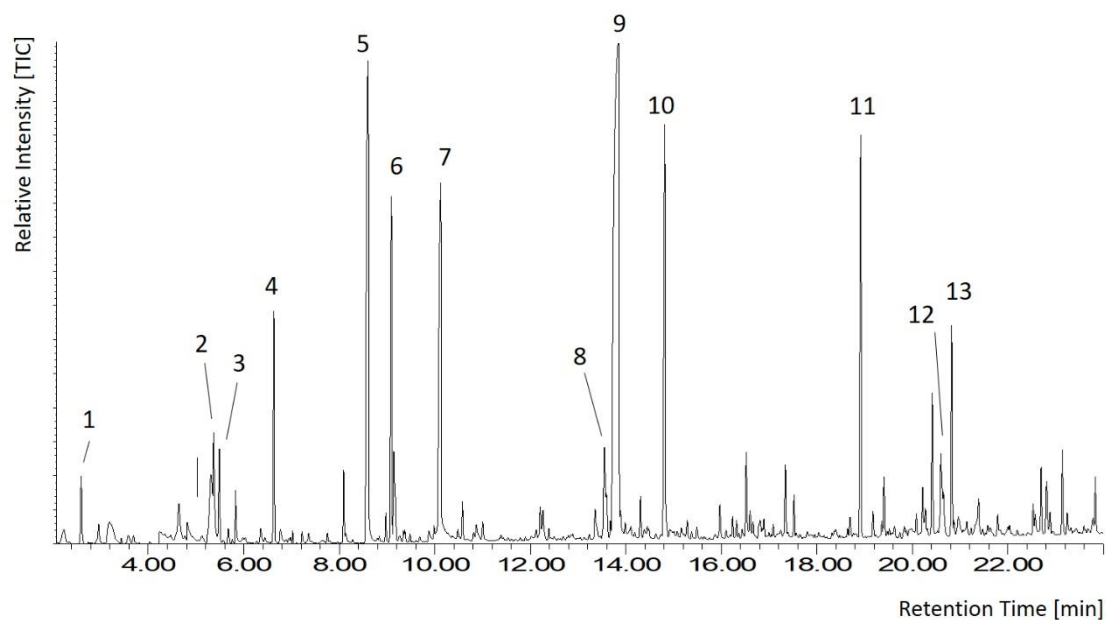
ASSIGNMENTS:

Alkyd: 2957 cm⁻¹, 2870 cm⁻¹, 1725 cm⁻¹, 1600 cm⁻¹, 1583 cm⁻¹, 1492 cm⁻¹, 1465 cm⁻¹, 1260 cm⁻¹, 1116 cm⁻¹, 1065 cm⁻¹, 742 cm⁻¹, 702 cm⁻¹

PY74: 1673 cm⁻¹, 1593 cm⁻¹, 1515 cm⁻¹, 1459 cm⁻¹, 1419 cm⁻¹, 1405 cm⁻¹, 1360 cm⁻¹, 1287 cm⁻¹, 1250 cm⁻¹, 1222 cm⁻¹, 1204 cm⁻¹

PYROLYSIS-GAS CHROMATOGRAPHY/MASS SPECTROMETRY

Sample n°: OBJ 12-6



Peak N.	Assignment	Rt (min)
1	methyl methacrylate	2.6
2	1,2,3-trimethoxy-propane	5.3
3	1,3-dimethoxy-2-propanol	5.4
4	butyl methacrylate	6.6
5	benzoic acid, methyl ester	8.6
6	1,3-dimethoxy-2,2-bis(methoxymethyl)-propane	9.1
7	3-methoxy-2,2-bis(methoxymethyl)-propanol	10.1
8	octandioic acid, dimethyl ester	13.5
9	dimethyl phthalate	13.8
10	nonandioic acid, dimethyl ester	14.8
11	hexadecanoic acid, methyl ester	18.9
12	octadecenoic acid, methyl ester	20.6
13	octadecanoic acid, methyl ester	20.8

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