

## ANALYTICAL RESULTS

<b>PARTNER:</b>	<b>UNITO - CCR</b>
<b>TYPE OF WORK:</b>	<b>Mural (Object 14)</b>
<b>COUNTRY:</b>	<b>Italy</b>
<b>CITY:</b>	<b>Turin</b>
<b>ADDRESS:</b>	<b>C.so Bramante</b>
<b>OWNER / CUSTODIAN:</b>	<b>Municipality of Turin</b>
<b>ARTIST:</b>	<b>VARIOUS</b>
<b>TITLE OF THE WORK:</b>	<b>No title</b>
<b>YEAR OF EXECUTION:</b>	<b>2010</b>
<b>MATERIALS:</b>	<b>Mixed paint on concrete</b>

## 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	Green paint layer background	x		ATR-FTIR	Calcite, silicates	ATR-FTIR Py-GC/MS	Styrene-Acrylic, Alkyd				
2	Red paint layer	x		ATR-FTIR	PY74	ATR-FTIR	Alkyd				
3	Pink paint layer	x		ATR-FTIR	Silicates, Ti white	ATR-FTIR Py-GC/MS	Styrene-Acrylic, Alkyd			ATR-FTIR	oxalates
4	Pale yellow paint layer	x		ATR-FTIR	PY74, Ti white, silicates	ATR-FTIR Py-GC/MS	Styrene-Acrylic, Alkyd				
5	Dark Yellow paint layer	x		ATR-FTIR	Calcite	ATR-FTIR	Styrene-Acrylic				
6	Dark blue paint layer	x		ATR-FTIR	Ti white	ATR-FTIR	Alkyd				
7	Light blue paint layer	x		ATR-FTIR	Silicates, calcite	ATR-FTIR	Alkyd				
8	Pale light blue paint layer	x		ATR-FTIR	Silicates, calcite	ATR-FTIR	Alkyd			ATR-FTIR	oxalates
9	White paint layer	x		ATR-FTIR	Talc, dolomite	ATR-FTIR	Undefined				
10	Purple paint layer	x		ATR-FTIR	PR84	ATR-FTIR	Alkyd				

10b	<b>Cross section</b>	x		See pictures below							
11	<b>Cross Section</b>	x									
12	<b>Support (probably not the concrete, but the plaster preparation)</b>	x						XRD	Quartz, calcite, Albite, Rutile, Barite		

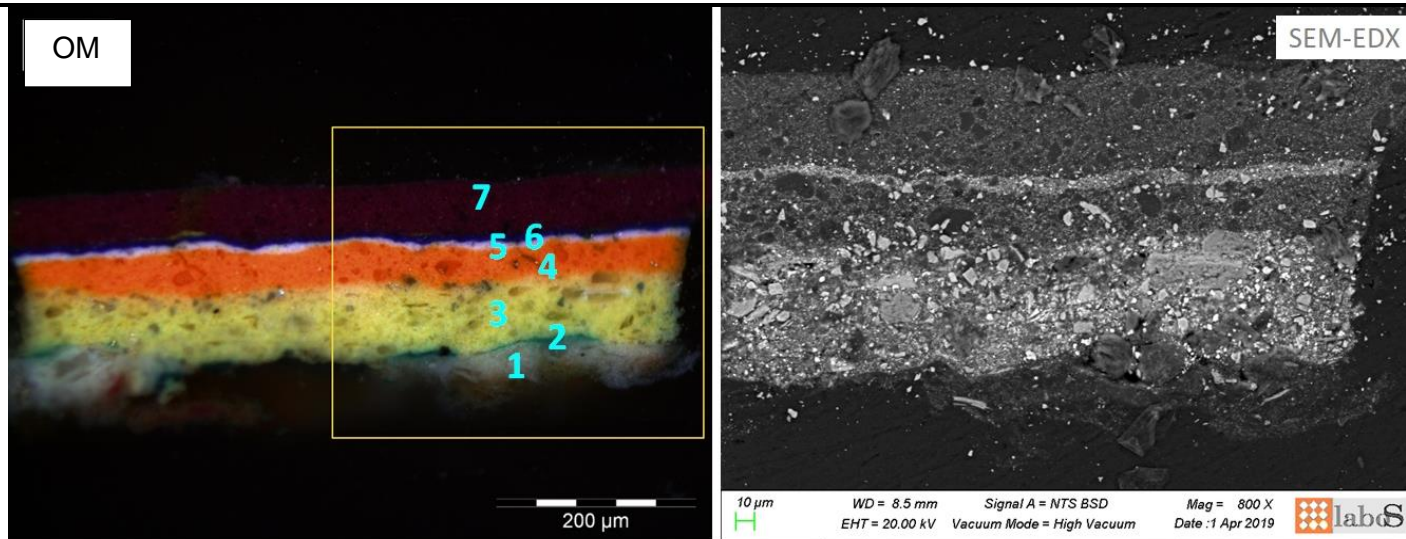
\* mortars, stone, metal ect.

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

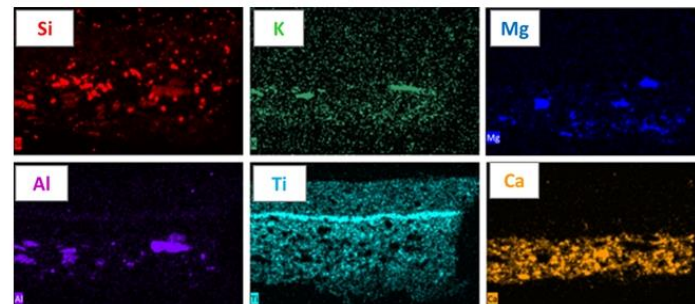


## STRATIGRAPHY OF THE MICROSAMPLES

Sample n°: OBJ14\_10

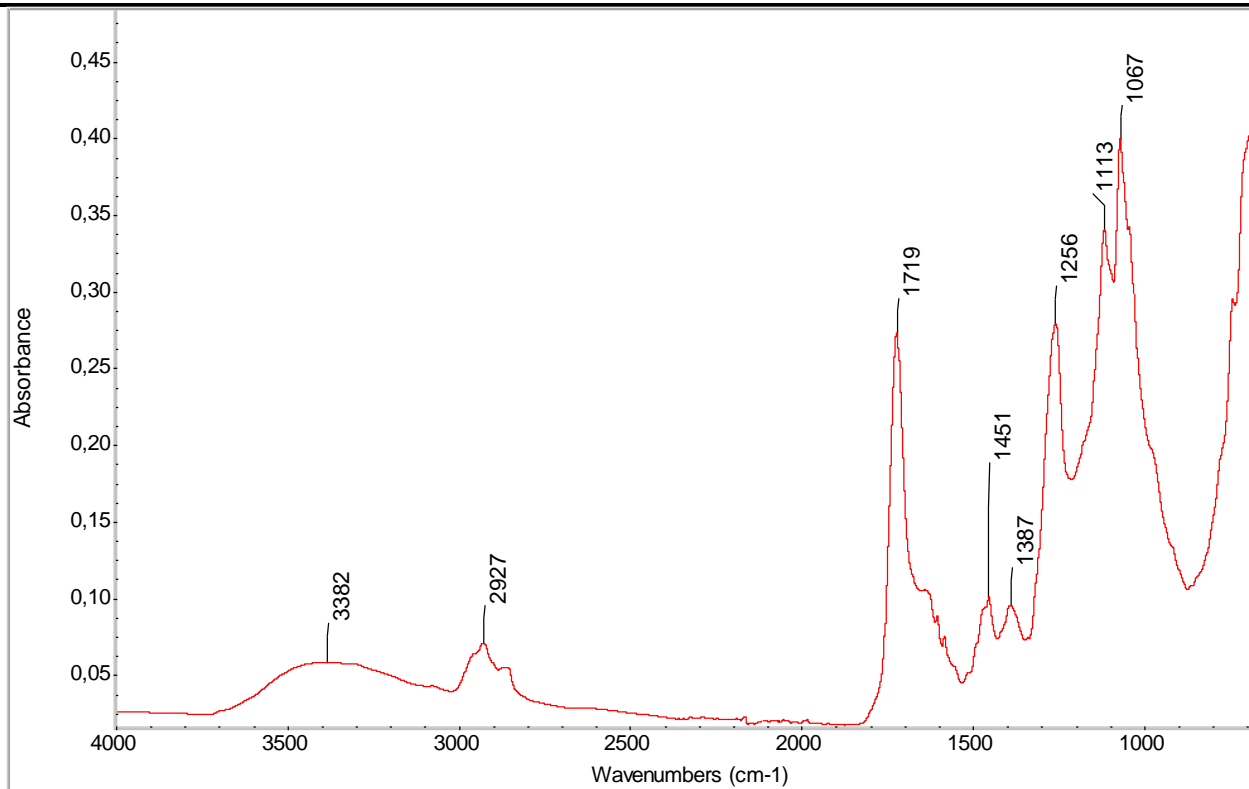


<b>1 – white</b>	Si, Ca, Ti, Mg, (Fe), (Na), (Al), (S), (Cl), (K)
<b>2 – green</b>	?
<b>3 – yellow</b>	Ti, Ca, Si, Al, Mg, K, (Fe), (Bi) + carbonate aggregates + Ca,Al-silicate aggregates
<b>4 – orange</b>	Si, Ti, (Ca) + silicate aggregates
<b>5 – white</b>	Ti, Si, Al + BaSO <sub>4</sub> aggregates
<b>6 – blue</b>	
<b>7 – purple</b>	Ti, Si, (Al), (S), (Cl) + silicate aggregates



## FOURIER-TRANSFORM INFRARED SPECTROSCOPY (FTIR)

Sample n°: OBJ 14-3



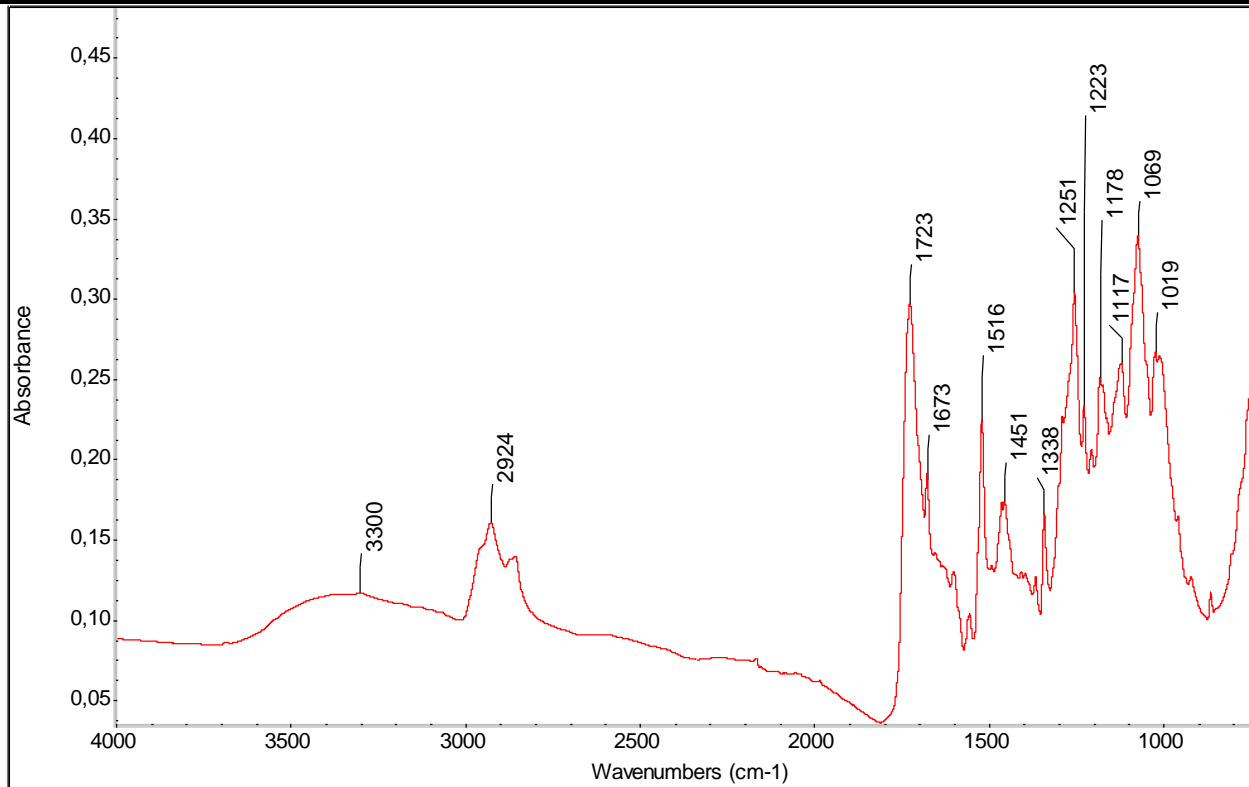
### ASSIGNMENTS:

**Acrylic:** 2927 cm<sup>-1</sup>, 1719 cm<sup>-1</sup>, 1451 cm<sup>-1</sup>,  
1386 cm<sup>-1</sup>, 1271 cm<sup>-1</sup>, 1240 cm<sup>-1</sup>, 1148 cm<sup>-1</sup>,  
1067 cm<sup>-1</sup>, 989 cm<sup>-1</sup>

**Silicates:** 900-1200 cm<sup>-1</sup>

**Titanium White :** < 600 cm<sup>-1</sup>

**Sample n°: OBJ 14-4**



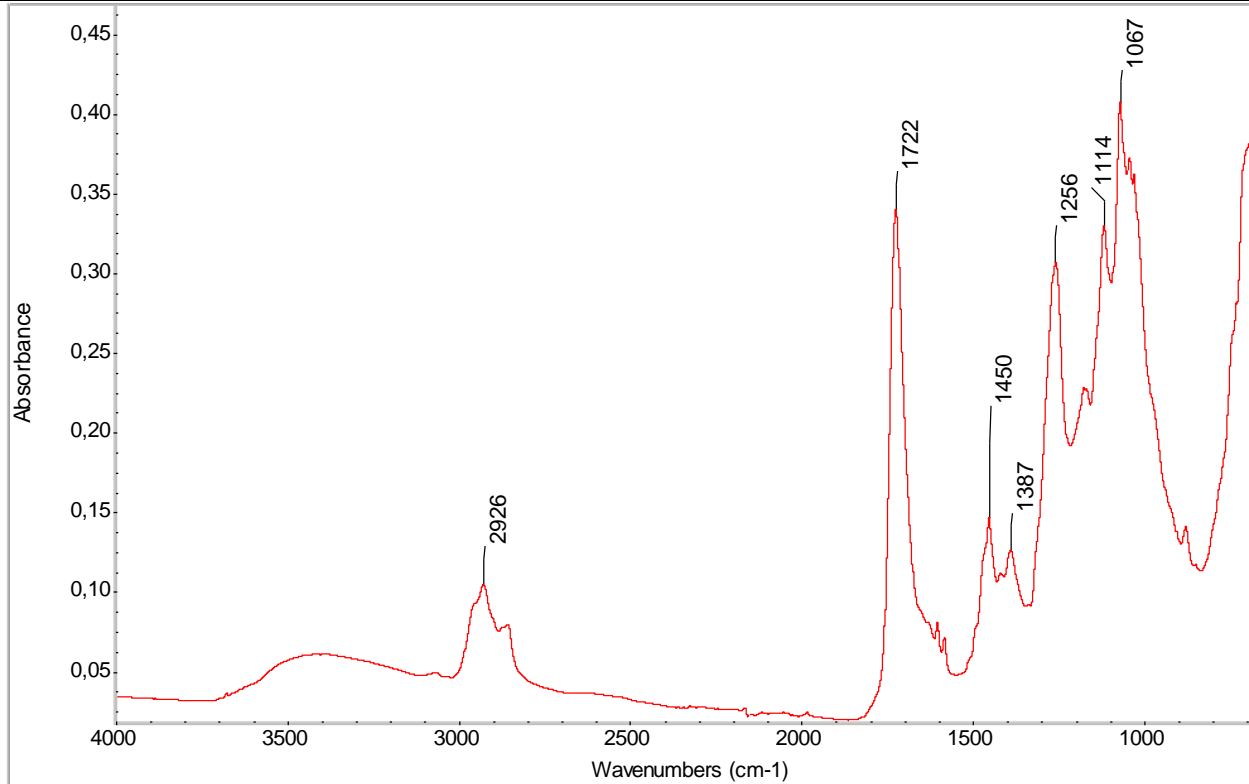
**ASSIGNMENTS:**

**Acrylic:** 2874 cm<sup>-1</sup>, 1732 cm<sup>-1</sup>, 1449 cm<sup>-1</sup>, 1386 cm<sup>-1</sup>, 1067 cm<sup>-1</sup>, 989 cm<sup>-1</sup>, 842 cm<sup>-1</sup>,

**Alkyd:** 2957 cm<sup>-1</sup>, 2870 cm<sup>-1</sup>, 1725 cm<sup>-1</sup>, 1600 cm<sup>-1</sup>, 1492 cm<sup>-1</sup>, 1465 cm<sup>-1</sup>, 1116 cm<sup>-1</sup>, 1065 cm<sup>-1</sup>,

**PY74:** 1673 cm<sup>-1</sup>, 1593 cm<sup>-1</sup>, 1550 cm<sup>-1</sup>, 1515 cm<sup>-1</sup>, 1459 cm<sup>-1</sup>, 1419 cm<sup>-1</sup>, 1405 cm<sup>-1</sup>, 1360 cm<sup>-1</sup>, 1287 cm<sup>-1</sup>, 1250 cm<sup>-1</sup>, 1222 cm<sup>-1</sup>, 1204 cm<sup>-1</sup>

**Sample n°: OBJ 14-7**



**ASSIGNMENTS:**

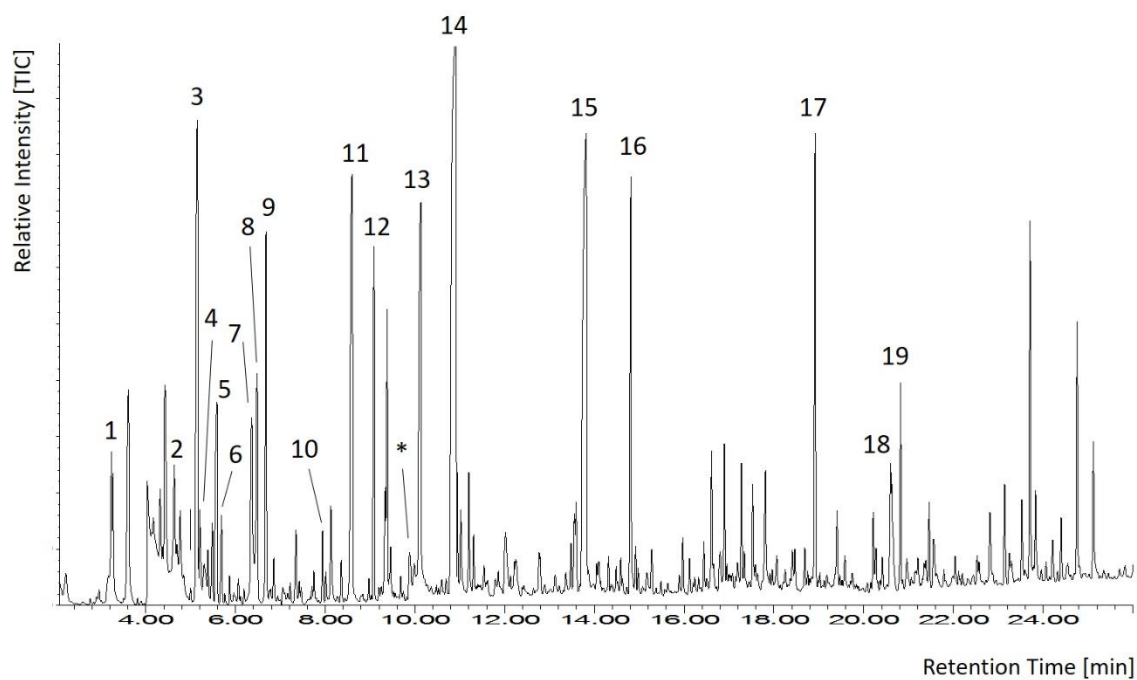
**Alkyd:** 2957 cm<sup>-1</sup>, 2870 cm<sup>-1</sup>, 1725 cm<sup>-1</sup>, 1600 cm<sup>-1</sup>, 1583 cm<sup>-1</sup>, 1260 cm<sup>-1</sup>, 1116 cm<sup>-1</sup>, 1065 cm<sup>-1</sup>

**Silicates:** 900-1200 cm<sup>-1</sup>



## PYROLYSIS-GAS CHROMATOGRAPHY/MASS SPECTROMETRY

Sample n°: OBJ 14-4



Peak N.	Assignment	Rt (min)
1	toluene	3.2
2	ethylbenzene	4.6
3	styrene	5.1
4	butyl acrylate	5.2
5	4-methoxy-1-butanol	5.6
6	(1-methylethyl)-benzene	5.7
7	2-(2-methoxyethoxy)-ethanol	6.4
8	1,1-oxybis(2-methoxy-ethane)	6.5
9	$\alpha$ -methylstyrene	6.7
10	(1-methylenepropyl)-benzene	7.9
11	benzoic acid, methyl ester	8.6
12	1,3-dimethoxy-2,2-bis(methoxymethyl)-propane	9.1
*	2-methoxy-benzenamine ( PY 74 fragment)	9.8
13	3-methoxy-2,2-bis(methoxymethyl)-propanol	10.1
14	hexandioic acid, dimethyl ester	10.9
15	dimethyl phthalate	13.8
16	nonandioic acid, dimethyl ester	14.8
17	hexadecanoic acid, methyl ester	18.9
18	octadecanoic acid, methyl ester	20.6
19	octadecanoic acid, methyl ester	20.8

This document was produced within the project ***Conservation of Art in Public Spaces (CAPuS)***.

Authors:

Moira Bertasa, Tommaso Poli, Chiara Riedo, Dominique Scalarone (University of Torino)

Paola Croveri, Chiara Ricci (Fondazione Centro Conservazione e Restauro “La Venaria Reale”)



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