CONSTGLASS

Araldite® coating

Pilot objects	BURGDORF	FRESH MATERIAL
Bay (date)	Vestry south of the choir Panel of fragments	samples: Ugent/Aral/1 Ugent/Aral/Kontur/1 LBW/Aral/1 LBW/Aral/2 LBW/Aral/3
Exposure - protective glazing	South	-
Composition of the product	Araldite® binder AY103 by 100 parts Hardener HY951 by 9 parts (Astorit AG, Einsiedeln).	epoxy resin (bisphenol-A) with hardener (cyclic aliphatic amine)
Application: date (age of product) ; studio ; protocol	1971, Konrad Vetter, treatment description	2008 Cologne Cathedral (protocol), application 1 time
Morphology		
Direct observation	Observation of the consolidant: We observe today that the resin used for fracture mending and back plating has sometimes heavily yellowed, is bristled and partly looses adhesion. We identified 8 phases of epoxy deterioration and detachment process in back-platings with Araldite®.	good and stable
SEM observation	-	-
Desktop Xrays tomography	-	-
Synchrotron tomography	The plating glass has been detached; its surface seems to have been smoother than the surface of the original. The crack in the epoxy layer occurs at the border between parts of different thickness. This confirms an observation on larger samples: The effect could be due to shrinking, but also to the different mechanical stresses due to thermal expansion (glasses, but especially the resin itself). In the crack, the well adhering epoxy infill has stripped off a part of the adjacent glass – evidence for the risks of de-restoration.	-
Chemical behaviour		
FTIR	-	-
Raman spectroscopy		-
Mechanical behaviour		
	-	stable
Contamination		
Fungi	-	high
Bacteriae	-	no
Active infestation		
Biological activity	-	high
Microbiological susceptibility		
		considerably under moist conditions
Reversibility		
Product 1	-	-
Re-treatability		
Product 1	In this case, we don't re-treat the panel.	-
General observations		

		-
Recommendations		
Safety/healthy	Mask, glove and air exhaust for safety application.	-
Preparation	Araldite® binder AY103 by 100 parts, hardener HY951 by 9 parts (Astorit AG 8840 Einsiedeln). Hardening at 22 ^{0}C during 24h.	-
Application	Single fractures were scotch taped on the painted surface. Then the crack was opened for inserting the Araldite®. The remaining Araldite® was removed with acetone. Doubling method: A thin carrier glass was cut and sometimes reheated in a plaster mould taken from the original fragment. Araldite® was poured on the carrier glass, the fragment was then put on top and left under pressure with a weight, for 24 hours/22 °C. The resin coming out all around the doubled glass has been removed with a sharp blade after 6-7 hours.	-
Future conditions of conservation	Type of Araldite® 2020 still used for single fractures.	-