






**CONSTGLASS**



**Silicone edge bonding and back plating**



Pilot objects	CHARTRES			CANTERBURY
Bay (date)	37, Aisle (ca 1205-1215) The Christ's Passion	42, Aisle (ca 1205-1215) Virgin Mary's death and Assumption	50, West facade (ca 1145-1155) Jesus childhood and public life of the Christ	SXXVIII 8h
Exposure - protective glazing	North, between 2 buttress	South	West	South
Composition of the product	Silicone CAF 3 :mixture of polydimethylsiloxanes, silica and curing agents	Silicone CAF 3	Silicone CAF 3	Silicone CAF 3
Application: date (age of product); studio protocol	1988 (21 years) ; Alliou	1988 (21 years); Petit	1976 (33 years); Gaudin	1975-78 (35 years)
<b>Morphology</b>				
<b>Edge bonding</b> : Direct observation	No visible alteration of the silicon (flexible), good adherence between two edges, partial loss of adherence on the surface of some pieces	No visible alteration of the silicon (flexible), good adherence between two edges	No visible alteration of the silicon (flexible), good adherence between two edges	Excess silicone remains on the surface of the glass. it appears firm and translucent. No visible deterioration since application
<b>Back plating</b> : Direct observation	-	No visible alteration of the silicon (flexible), good adherence between two edges, light milky aspect of the recent glass	No visible alteration of the silicon, light milky aspect of the recent glass	
SEM observation	-	-	-	
Desktop Xrays tomography	good adherence of the glue on the edge of healthy glass	-	-	
Synchrotron tomography	-	-	-	
<b>Chemical behaviour</b>				
FTIR	-	-	-	
Raman	-	-	-	
<b>Mechanical behaviour</b>				
	good maintaining when hand strain in different directions ?	good maintaining when hand strain in different directions	good maintaining when hand strain in different directions	
<b>Contamination</b>				
Fungi	None	None	None	
Bacteriae	None	Not foreseen	None	
<b>Active infestation</b>				
Biological activity	Low	Low	None	
<b>Microbiological susceptibility</b>				
	-	-		
<b>Reversibility</b>				
Product 1	Mechanical removal and scouring with a rubber		-	
<b>Re-treatability</b>				
Product 1	Silicone without acetic acid: good adherence		-	
Product 2	Araldite® 2020, epoxy resin: good adherence		-	
<b>General observations</b>				
<b>Good flexibility, good adherence, good reversibility</b>				

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<b>Recommendations</b>		
Safety/healthy	Slightly irritating to eyes, respiratory system and skin. On contact with humidity: irritating vapors are released. Combustible. Ventilation, manipulation with gloves. Work outside or in a well-ventilated room.	Gloves should be worn.
Preparation	Make sure surfaces to be bonded are cleaned and free from grease.	Make sure surfaces to be bonded are cleaned and free from grease.
Application	Edge bonding: apply along break edges before placing firmly together. Back plating: after placing face to face ancient and new glasses together, apply along the edges.	Apply along break edges before placing firmly together.
Future conditions of conservation	No need for a re-treatment	No need. No treatment necessary. The window from which the panel is has externally ventilated protective glazing