




CONSTGLASS



Table of results



### 1-Pilot object

Pilot object	Canterbury Cathedral NXVII C2	
Picture		<p><b>Identification of the panel:</b> NXVII C2 internal face in transmitted and reflected light</p> <p><b>Treatment:</b> <b>Product:</b> Microcrystalline wax no: 1129 and Polythene A Wax; re-treatment with Paraloid® B72</p> <p><b>Application:</b></p> <ul style="list-style-type: none"><li>• Wax applied with a brush in dilution with white spirit. Application of wax early to mid-1980s in situ as temporary consolidant of severely flaking painted decoration. No cleaning was carried out prior to application of wax. The wax was not polished (unlike CAN nII 7). Window remained unprotected until 1992.</li><li>• Re-treatment with Paraloid® B72 in 1992.</li><li>• Fractures bonded with Silicone Rhodia® CAF 3 in 1992.</li></ul>





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**Phase-contrast tomography on Synchrotron**

Dummy samples were made to replicate the glass and consolidation methods used using Microcrystalline wax and polythene A wax with a coating of Paraloid® B72. The thickness of the wax coating (made in 3 layers) and Paraloid® B72 were increased and coloured with raw umber powder pigment for 2 samples.

Sample **CAN 1a**: Paraloid® B72 mixed with pigment



Sample **CAN 1b**: Wax mixed with pigment



Results found that the Paraloid® B72 had merged with the surface of the wax, therefore there is no risk of delamination of the Paraloid® from the wax.





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<p><b>Chemical Composition</b></p> <p><i>If there is wax present that is significantly different from the microcrystalline wax or polythene A?</i></p> <p>To determine if the same mixture was used on all windows.</p>  	<p><b>SEM/EDX</b></p>	<p>Wax shavings were carefully removed under the microscope and sent to the Fraunhofer institute. Results found that Microcrystalline wax no: 1129 and Polythene A wax are present in the wax shavings taken from this panel (unknown ratio).</p>
<p><b>Organic component composition</b></p>	<p><b>FTIR</b></p>	
<p><b>Microbiology</b></p>	<p><b>Metabolic activity and taxonomical description of microorganisms</b></p>	<p>CAN NXVII D2 (in situ):</p> <ul style="list-style-type: none"> <li>- low metabolic activity (ATP 190 RLU/25 cm<sup>2</sup>);</li> <li>- isolated microorganisms: <i>Engyodontium album</i> (fungus) and bacteria (medium contamination).</li> </ul> <p>CAN NXVII 3 (in storage):</p> <ul style="list-style-type: none"> <li>- low metabolic activity (ATP 200 RLU/25 cm<sup>2</sup>);</li> <li>- isolated microorganisms: <i>Aspergillus fumigatus</i> (fungus) and bacteria (medium contamination).</li> </ul>
<p><b>Reversibility</b></p>	<p><b>Test studies Elimination</b></p>	<p>The wax coating was removed mechanically with scalpels under optical microscope in 1992. Where adhesion was good the wax coating was thinned down mechanically, but not completely removed. No new reversibility test was carried out in 2009, as the unstable condition of the painted decoration was of concern.</p>
<p><b>Re-treatability</b></p>	<p><b>Test studies Re-treatability</b></p>	<p>Paraloid®-B72 in acetone dilution was applied in 1992 to consolidate flaking paint. This was often applied onto remaining wax coatings. Application of Paraloid®-B72 with brush. Easy application and good immediate adhesion.</p>