

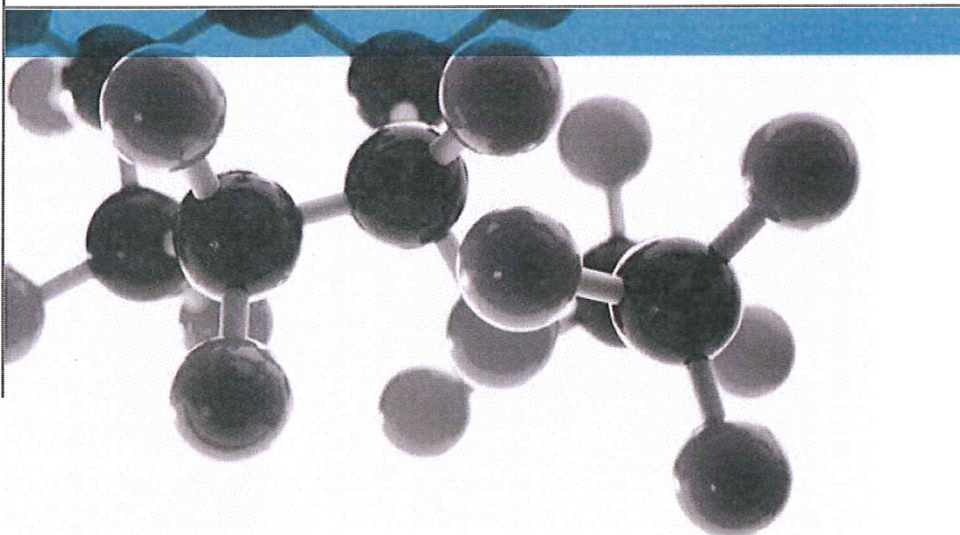
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Test Certificate

Atlas Cell Testing of Coated Samples



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A Report To: Kanat Boyacilik Ticaret As

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**Testing
Advising
Assuring**

Revision History

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1.0 INTRODUCTION

- 1.1. At the request of Kanat Boyacilik Ticaret As, Exova Coatings was instructed to carry out Atlas Cell testing on supplied coated samples.
- 1.2. Exova Coatings has tested the items supplied by Kanat Boyacilik Ticaret As, as sampled in accordance with the client's own requirements.
- 1.3. The purpose of the testing was to evaluate the performance of the supplied coated samples.

2.0 TEST SPECIMENS

- 2.1. Two specimens were received by the Laboratory.
- 2.2. Each specimen was given a unique ID in accordance with our quality system.
- 2.3. The test specimens received by the Laboratory were as follows:
 - Atlas Cell:
 - 2 x 19300 Kanepox Nova Premium panels, nominal dimensions of 200 x 200mm

3.0 TEST METHOD

- 3.1. Prior to testing, all samples had dry film thickness measurements taken in accordance with BS EN ISO 2808:2007 (eddy current method).
- 3.2. Testing was carried out in accordance with ASTM D6943-10 Method B-1.
- 3.3. At the end of the test the samples were rinsed with deionised water, allowed to dry at ambient temperature and individually photographed.
- 3.4. Following the Atlas Cell test 9 x 3.14cm² dollies were attached to each sample; 3 in the immersion zone, 3 in the vapour zone and 3 in the unexposed area. The adhesive, Scotchweld DP460, was allowed to cure at ambient conditions for 24 hours and the dollies were scored around before being pulled. Adhesion testing was performed in accordance with ASTM D4541-09e1.

4.0 TEST EQUIPMENT

- 4.1. Pixsys ATR121 Controller / Heater, serial no. CLCH07 / CLCH08
- 4.2. Elcometer 456 dry film thickness gauge, serial no. 25027/2
- 4.3. Elcometer 248.6µm and 508.9µm thickness standards
- 4.4. Pull-off adhesion tester, serial no. RN12521
- 4.5. Testo 605-H1 digital hygrometer, serial no. CLTE05

5.0 TEST CONDITIONS

- 5.1. Atlas Cell
 - Immersion medium: Iso-octane containing 15% Methyl Tertiary-Butyl Ether (MTBE) b/v
 - Panels half immersed
 - Test temperature: 40°C ± 3°C
 - Test duration: 28 days

6.0 TEST RESULTS**6.1. Dry Film Thickness**

Sample	Kanepox Coating System	Minimum (µm)	Maximum (µm)	Average (µm)	Standard Deviation
N960480-5	Nova Premium	269	326	301	16.0
N960480-6		247	278	261	6.53

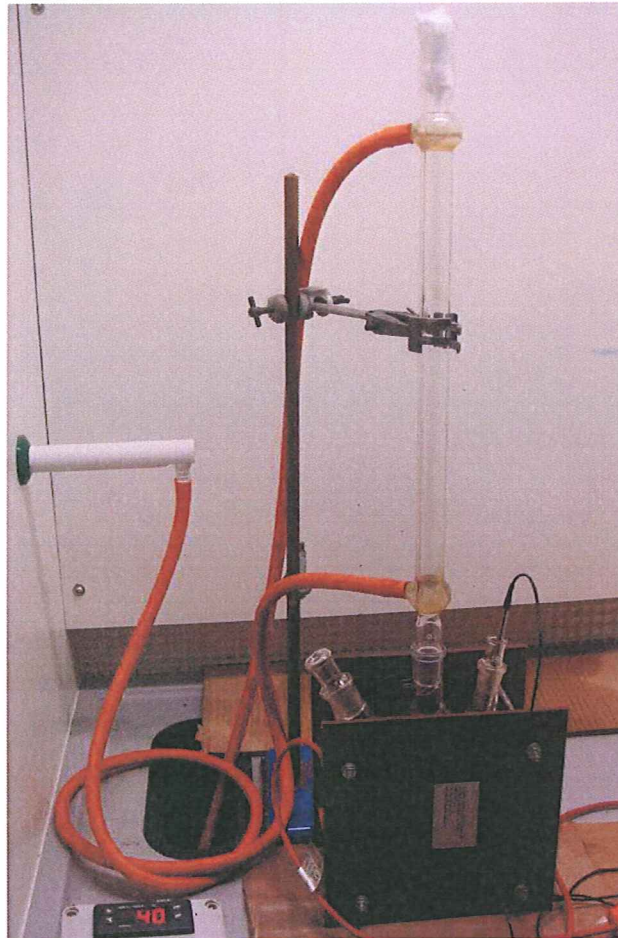
6.2. Atlas Cell / Adhesion

Sample number	Zone	Adhesion (MPa)	Failure mode
N960480-5	Vapour	12.9	40% (A/B) adhesive failure between substrate and coating 60% (B) cohesive failure within the coating
		12.6	40% (A/B) adhesive failure between substrate and coating 60% (B) cohesive failure within the coating
		12.4	5% (A/B) adhesive failure between substrate and coating 95% (B) cohesive failure within the coating
	Immersion	12.4	10% (A/B) adhesive failure between substrate and coating 90% (B) cohesive failure within the coating
		11.7	10% (A/B) adhesive failure between substrate and coating 90% (B) cohesive failure within the coating
		13.0	20% (A/B) adhesive failure between substrate and coating 80% (B) cohesive failure within the coating
	Non-exposed	12.5	10% (A/B) adhesive failure between substrate and coating 90% (B) cohesive failure within the coating
		13.1	40% (A/B) adhesive failure between substrate and coating 60% (B) cohesive failure within the coating
		12.0	20% (A/B) adhesive failure between substrate and coating 80% (B) cohesive failure within the coating
N960480-6	Vapour	12.8	5% (A/B) adhesive failure between substrate and coating 90% (B) cohesive failure within the coating 5% (B/Y) adhesive failure between the coating and adhesive
		12.1	5% (A/B) adhesive failure between substrate and coating 95% (B) cohesive failure within the coating
		12.5	5% (A/B) adhesive failure between substrate and coating 95% (B) cohesive failure within the coating
	Immersion	12.3	10% (A/B) adhesive failure between substrate and coating 90% (B) cohesive failure within the coating
		11.9	5% (A/B) adhesive failure between substrate and coating 95% (B) cohesive failure within the coating
		12.0	10% (A/B) adhesive failure between substrate and coating 90% (B) cohesive failure within the coating
	Non-exposed	12.4	10% (A/B) adhesive failure between substrate and coating 90% (B) cohesive failure within the coating
		11.8	10% (A/B) adhesive failure between substrate and coating 90% (B) cohesive failure within the coating
		12.2	5% (A/B) adhesive failure between substrate and coating 95% (B) cohesive failure within the coating

A/B Fracture between the steel surface and first coat
 B Fracture in the first coat
 B/Y Fracture between the outer coat and the adhesive.

7.0 PHOTOGRAPHS

7.1. Atlas Cell

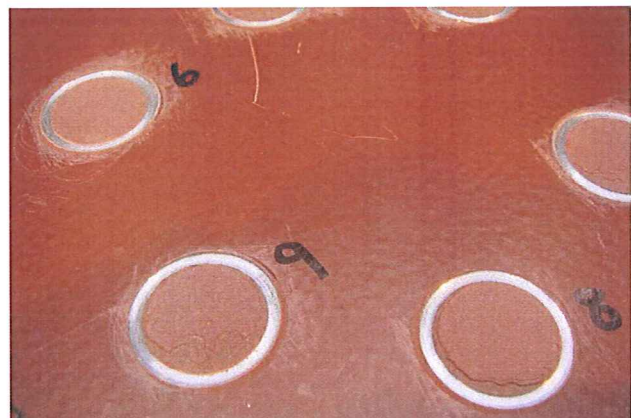


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7.2. Atlas Cell Adhesion



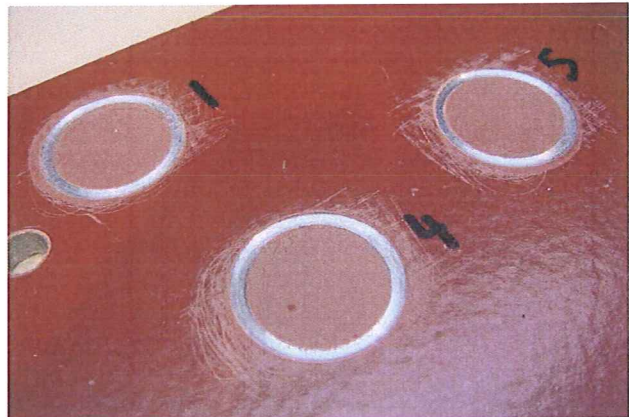
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N960480-6


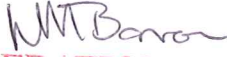


N960480-6

The results contained within this report have been reported in an abbreviated format. The test data and result sheets containing more detailed information in accordance with the technical works procedures or standards used are held at Exova as part of the accredited quality assurance system. Opinions and interpretations expressed herein are outside the scope of the UKAS accreditation of this laboratory.

END OF TEXT

Report Signatories and Approval

Author	Jon Goldsby Coatings Technologist (For and on behalf of Exova (UK) Ltd) 
Approver	L. M. BARRON  OPERATIONS MANAGER (For and on behalf of Exova (UK) Ltd)