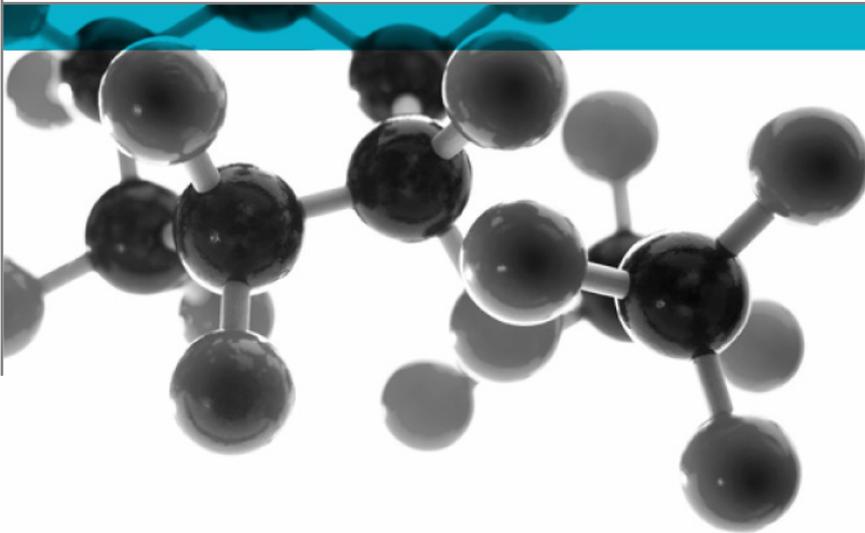


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# ASTM D3681 Chemical Resistance of Fibreglass Pipe in a Deflected Condition



A Report To:  
Mark Smith  
W.E. Rawson

Document Reference: 7301001/8896/01

**Date:** 21/04/15

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Page 1

**Testing  
Advising  
Assuring**

# Revision History

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# Contents

1.0	INTRODUCTION.....	4
2.0	TEST SPECIMENS.....	4
3.0	TEST METHOD.....	4
4.0	TEST EQUIPMENT.....	5
5.0	RESULTS.....	5
6.0	OBSERVATIONS.....	5

## 1.0 INTRODUCTION

Mark Smith of W.E. Rawson Ltd requested Exova Utilities determine the predicted 50-year failure strain of a 300mm diameter glass reinforced cured in place liner material.

Testing is being performed in accordance with customer specific requirements and ASTM D3681-2012 Chemical Resistance of "Fiberglass" (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe in a Deflected Condition.

The test involves exposing the interior of specimens of pipe to a corrosive test solution whilst the pipe is constantly maintained in a deflected condition at differing induced initial ring flexural strain levels.

The long-term resistance of the pipe to the test solution is obtained by an extrapolation to 50-years of a log-log linear regression line for initial strain level versus time.

A minimum of 18 individual pipe test specimens are required with failure times ranging between 10 and 10 000 hours.

The number of required failure points in each time bracket as well as the number of data points generated so far is given in table 1 below.

Failure Time (Hours)	No Data Points Required	No. Data Points To Date
10-1000	≥4	11
1000-6000	≥3	7
After 6000	≥3	6
After 10000	≥1	1

Table 1, showing required distribution of data points from ASTM D3681 & those attained so far

25 failures have occurred with a maximum failure time of ~11500 Hours. This is therefore the final report providing all the results to date. No further reports will be issued and a predicted mean 50-year failure strain has been reported.

## 2.0 TEST SPECIMENS

1.5m Lengths of 300mm diameter liner, nominal thickness 6mm were provided to Exova on the 9<sup>th</sup> July 2013.

The carrier tube consisted of polyester felt (PET) reinforced with two layers of glass matting impregnated with Scott Bader Crystic D5101 isophthalic polyester resin (UP). The liners internal coating was Thermoplastic Polyurethane (TPU) with nominal thickness 0.5mm

The sample was assigned the Exova reference AH1233 and each test specimen derived from the sample was measured and given a unique ID in accordance with our quality system.

A strip of the TPU internal coating material was removed from the invert of each pipe ring specimen (prior to testing). This was performed to allow the test solution direct access to the underlying material and as such provide a worse case test result.

## 3.0 TEST METHOD

Resistance to chemical attack from the inside of a section in a deflected condition was determined in accordance with the following conditions:

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Document No.:	7301001/8896/01	Page No.:	4 of 13
Author:	Alex Sawford	Issue Date:	21/04/15
Client:	W.E Rawson	Issue No.:	1

- **Standard:** ASTM D3681-2012
- **Procedure:** A, deflection measurement
- **Specimen Preparation:** Pipe saw, Band saw, Emery paper, silicone sealant
- **Specimen Dimensions:** Nominal diameter 300mm, length =  $d_n \pm 5\%$  and thickness as received
- **Test Solution:** 0.5M Sulphuric Acid (1N, 5%)
- **Test Temperature:**  $23 \pm 2^\circ\text{C}$

The lining material provided contained resin rich ridges around its circumference that came from the shape of host pipe. Measurements of wall thicknesses were adjusted accordingly to compensate for this non-structural layer.

Example photographs of the test-set up can be seen in Appendix A at the end of the report.

#### 4.0 TEST EQUIPMENT

- 4.1. Inspection equipment UT008, UT016 and PDL QA052 traceable to national standards were used to measure the test specimen dimensions
- 4.2. Bespoke strain corrosion test rigs as described in ASTM D3681 were used to perform the testing.

#### Notes

The test rigs were equipped with 6mm thick EPDM rubber pads to help distribute the strain more evenly along the length of the pipe specimens.

Electronic timers were used to assist in monitoring the times to failure.

#### 5.0 RESULTS

A table of individual test results and a log-log graph of failure time versus strain applied is provided within Appendix B.

The data was analysed using the least squares regression procedure described in Annex A1 of ASTM D3681:2012. The coefficient of correlation  $r$  at the end of testing was found to be 0.8134 and is in excess of the minimum allowed of 0.549.

The predicted failure strain at 50-years based upon current data is 0.55%.

#### 6.0 OBSERVATIONS

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	Alex Sawford (Project Manager)  (For and on behalf of Exova (UK) Ltd)
Approver	David Lowe (Technical Manager)  (For and on behalf of Exova (UK) Ltd)

APPENDIX A: PHOTOGRAPH OF TEST SET UP



Figure 1, example photograph showing strain corrosion test set-up

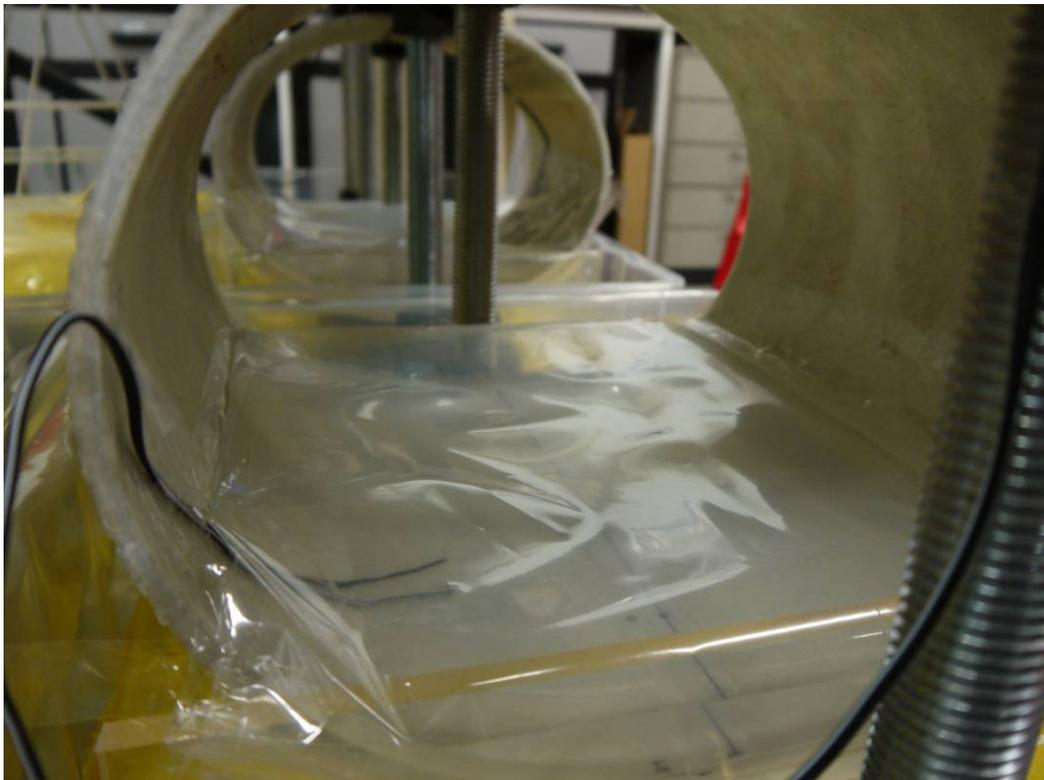


Figure 2, example photograph showing interior surface of a strain corrosion test specimen

## APPENDIX B: STRAIN CORROSION TEST RESULTS TABLE &amp; GRAPH

Test Piece Ref	Initial Strain (%)	Time to Failure (Hrs)
AH1233-1	0.90	1156.0
AH1233-2	1.00	669.3
AH1233-3	1.10	469.0
AH1233-4	1.30	20.2
AH1233-5	1.25	25.4
AH1233-6	1.20	198.3
AH1233-7	1.08	290.0
AH1233-8	1.09	263.2
AH1233-9	1.03	48.1
AH1233-10	1.02	72.2
AH1233-11	1.01	263.7
AH1233-12	0.95	1799.0
AH1233-13	0.92	450.0
AH1233-14	0.89	2214.5
AH1233-15	0.88	4210.7
AH1233-16	0.84	4822.5
AH1233-17	0.82	1482.9
AH1233-18	0.80	4317.0
AH1233-19	0.79	6968.2
AH1233-20	0.78	6141.0
AH1233-21	0.77	7520.5
AH1233-22	0.76	6625.5
AH1233-23	0.75	11565.5
AH1233-25	0.72	2224.0
AH1233-26	0.70	8754.0

Table 2, showing individual Test results for Sample AH1233

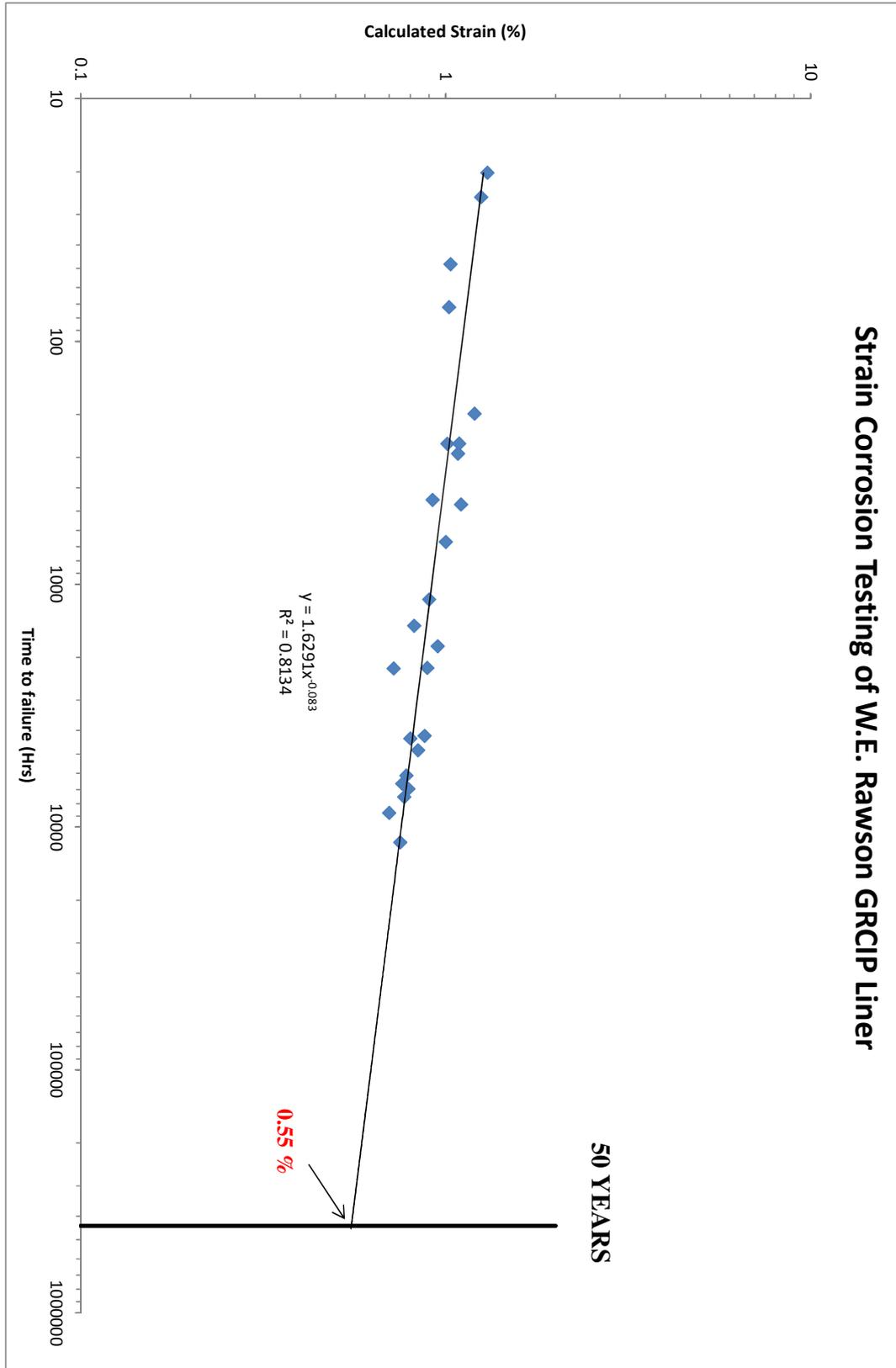


Figure 3, showing graph of initial strain applied versus time to failure for sample AH1233

## APPENDIX C: EXOVA (UK) LIMITED STANDARD CONDITIONS OF CONTRACT (“the Conditions”)

## 1. INTERPRETATION

In the Conditions the following expressions shall (unless the context requires) have the following meanings:

"Client" means the person, firm or company to whom a Quotation is addressed or for whom any Services are carried out;

"Confidential Information" means all information which a party may have or acquire before or after the date of the Contract which relates to a party's business, products, developments, trade secrets, know-how or other matters connected with the Services and information concerning a party's relationships with actual or potential clients, customers or suppliers and all other information designated as confidential or which ought reasonably to be considered confidential;

"Company" means Exova (UK) Limited or named operating unit thereof;

"Contract" means the contract for the supply of Services comprising the Quotation and these Conditions;

"Intellectual Property Rights" means rights of whatever nature (including patents, inventions, know-how, trade secrets, registered designs, copyrights, database rights, trade marks, service marks, logos, domain names, business names, trade names and design rights) and all registrations or applications to register any of the aforesaid items, together with any renewals, revivals and extensions of any of the aforesaid items;

"Losses" means all losses, liabilities, claims, costs, expenses, damages, actions, awards, penalties and/or fines, obligations and also includes all losses, liabilities, costs and expenses (including legal fees on a full indemnity basis) in relation to or resulting from any demands, claims or proceedings;

"Price" means the price stated in the Quotation, or otherwise agreed with the Client together with all other sums due pursuant to the Conditions;

"Quotation" means the Company's quotation (whether written or oral) which shall be subject to the Conditions save to the extent of any inconsistencies which will be resolved in favour of the terms of the Quotation;

"Report" means any test certificate, technical report, non-destructive test or inspection record, drawing, spreadsheet, recommendation, advice or the like issued by the Company in respect of a Service;

"Sample" means any material, item, product or compound supplied by the Client to form the basis of a Test;

"Sanctions Rules" means any applicable trade or economic sanctions, export control, embargo or similar laws, regulations, rules, measures, restrictions, restricted or designated party lists, licences, orders, or requirements, in force from time to time, including without limit those of the European Union, the United Kingdom, the United States and the United Nations;

"Service" or "Services" means the service(s) (including, but not limited to, Tests) specified in the Quotation; and

"Test" means any testing, analysis, assay, inspection, sampling and sample preparation or the like specified in a Quotation.

## 2. QUOTATION

2.1. The Quotation constitutes an offer by the Company to provide the Services subject to the Conditions (save to the extent of any inconsistencies between the Quotation and the Conditions which will be resolved in favour of the terms of the Quotation) and is open for acceptance for thirty days only from the date of the Quotation unless previously withdrawn by the Company. Acceptance is based on the receipt of an instruction in writing or receipt of the Sample by the Company.

2.2. Except in accordance with the Conditions no variation of the Contract will be accepted unless agreed in writing by the Company.

2.3. The Quotation and the Conditions, shall prevail over any terms or conditions contained or referred to in any correspondence, order, documentation submitted by the Client or elsewhere. Further, no condition, statement or representation contained in any advertisement or brochure or in any trade or promotional circular or other literature, nor the terms or conditions of any trade association or other body, or which would or might but for this sub-paragraph be implied or incorporated by custom or trade, usage, negotiations, course of dealing or otherwise shall be deemed to be incorporated in the Contract and all of the same are hereby expressly excluded from the Contract.

## 3. PRICE

3.1. The Price is based on information available to the Company at the date of the Quotation. If during the period of the Contract there shall be any variation in the cost of materials, labour or otherwise to the Company, the Price may, in the absolute discretion of the Company, be adjusted to take account of such variation.

3.2. In addition to the amount specified in the Quotation the following shall be payable if appropriate:

ANY APPLICABLE VALUE ADDED TAX OR SALES TAX;

PACKAGE, INSURANCE, FREIGHT, TRAVEL COSTS, BANK CHARGES, SAMPLE DESTRUCTION COSTS, STORAGE CHARGES AND DISBURSEMENTS INCURRED ON BEHALF OF THE CLIENT, WHETHER ON THE COMPANY'S PREMISES OR ELSEWHERE, AND TO INCLUDE STORAGE CHARGES ON THE COMPANY'S PREMISES, IF ANY SAMPLE OR MATERIALS SUPPLIED BY THE CLIENT ARE NOT REMOVED WITHIN SEVEN DAYS OF THE DATE OF NOTIFICATION TO THE CLIENT THAT THEY ARE READY FOR COLLECTION;

INSURANCE INCURRED BY THE COMPANY, IN ITS ABSOLUTE DISCRETION, IN RESPECT OF ANY PROPERTY BELONGING TO THE CLIENT IN THE POSSESSION OF THE COMPANY;

WITH PRIOR NOTICE, THE COST OF ALL SUB-CONTRACTORS EMPLOYED BY THE COMPANY UNLESS INCLUDED IN THE QUOTATION;

ANY ADDITIONAL COSTS INCURRED BY THE COMPANY IN ACCORDANCE WITH THE CONDITIONS; AND

ANY SPECIAL STANDARDS OR SPECIFICATIONS REQUIRED FOR THE PERFORMANCE OF THE SERVICE.

## 4. PAYMENT

4.1. The Price shall be paid to the Company in full, in cleared funds, without any deduction, set-off or counterclaim within thirty days of the date of the Company's invoice. For the avoidance of doubt, the Price shall be paid free and clear of, and without deduction for and on account of, tax unless the Client is required by law to make such payment subject to the deduction of withholding tax, in which case the sum paid by the Client shall be increased to the extent necessary to ensure that after such deduction or withholding the Company receives an amount equal to Price it would have received had no such deduction or withholding been required.

4.2. Where the Client is required by law to deduct or withhold on account of tax it shall use its best endeavours to obtain from the relevant revenue authorities authorisation to make payment of the sums without such deduction or withholding or, if applicable, at a reduced rate. The parties undertake to provide all reasonable assistance to each other in obtaining such authorisation and, without prejudice to the generality of the foregoing, will submit any forms and take any such action as may be reasonably necessary or reasonably required by the other party for the purpose.

4.3. Time of payment is of the essence to the Contract. In default of payment within the thirty days, the Company may: suspend any further Services being carried out for the Client; withhold the provision of Reports; alter or withdraw credit terms; and amend terms, prices or service levels. The amount outstanding from time to time shall bear interest (both before and after any judgment) at the rate of 4% per annum above the Royal Bank of Scotland plc base rate from time to time from the due date for payment until payment in full is made.

4.4. All payments due to the Company shall be payable within the specified time irrespective of whether or not the Client has recovered payment from a third party and, for the avoidance of doubt, but without prejudice to the generality of the foregoing, this includes payments of fees due to the Company acting as experts or as expert witnesses when instructed by solicitors acting for a party to a dispute.

4.5. If, in the Company's view, the Client's credit-worthiness deteriorates before completion of the Service, the Company may require payment in full or in part of the Price prior to completion, or the provision of security for payment by the Client in such form as is acceptable to the Company.

4.6. The Company has a general lien on all the Client's property in the Company's possession in satisfaction of any amount owed by the Client to the Company under the Contract, and may deal with it as it sees fit.

## 5. EXECUTION OF SERVICES

5.1. The Services shall be carried out singly unless prior written instructions from the Client are received for replicates or unless the Company considers replicates are necessary or desirable. The Company reserves the right to charge for replicates even if the original result is confirmed.

5.2. The Client shall supply as much information as possible about each Sample and/or Service requirement in order to assist in achieving an efficient service. Where information relating to the Sample and/or the Service requirements is incorrect and the Company is involved in additional work, the Company reserves the right to charge for such additional work.

5.3. Unless specific prior instructions in writing are received by the Company, the Services shall be carried out on the Sample in the state in which the Sample is received. The Company reserves the right to charge for any work required to be carried out to the Sample prior to the performance of any Service.

5.4. Methods of carrying out the Service and providing the Report shall be at the sole discretion of the Company unless prior instruction in writing is received from the Client specifying a particular procedure which is accepted in writing by the Company. Charges for such special procedures will be agreed between the Company and the Client prior to carrying out the Service.

5.5. A general description of the method used in the performance of the Service shall be given verbally on request. Where written descriptions of detailed procedures are requested, whether as part of the Report or issued separately, the Company reserves the right to make an additional charge. If the method referenced in the Report represents the end product of development work carried out at the Company's expense, the method shall only be revealed at the discretion of the Company.

5.6. The Company may, at its sole discretion, undertake to give priority in carrying out a particular Service. A surcharge may be imposed by the Company for the carrying out of priority work. Details of these arrangements will be issued by the Company on request.

5.7. In relation to radiography reports and film delivered or interpreted as part of the performance of the Services, the Client shall notify the Company, within fourteen (14) days from date of issue of such radiography reports and film, of any Client or third party dispute concerning either the radiographic quality or interpretation of results. If the Client does

Document No.: 7301001/8896/01

Page No.: 10 of 13

Author: Alex Sawford

Issue Date: 21/04/15

Client: W.E Rawson

Issue No.: 1

not so notify the Company within this fourteen (14) day period, the Client will be deemed to have accepted the radiography reports and film, together with any interpretation of these, provided by the Company.

6. **SERVICES SUBJECT OF LEGAL PROCEEDINGS**  
If any aspect or element of the Services (including any Sample) is, or is likely to be, the subject of or relevant to legal proceedings, this fact must be notified to the Company in writing before the Services are carried out. If that fact is not disclosed to the Company at that stage, the Company may not, in its absolute discretion, be prepared to provide expert testimony.
7. **DISCLAIMER/LIABILITY**
- 7.1. **The following provisions of this Condition 7 set out the entire liability of the Company, its employees, agents and sub-contractors to the Client howsoever arising.**
- 7.2. **The Company does not exclude or limit its liability (if any) to the Client:**  
FOR BREACH OF THE COMPANY'S OBLIGATIONS ARISING UNDER SECTION 12 SALE OF GOODS ACT 1979 OR SECTION 2 OF THE SUPPLY OF GOODS AND SERVICES ACT 1982;  
FOR PERSONAL INJURY OR DEATH RESULTING FROM THE COMPANY'S NEGLIGENCE;  
UNDER SECTION 2(3) OF THE CONSUMER PROTECTION ACT 1987;  
FOR ANY MATTER WHICH IT WOULD BE ILLEGAL FOR THE COMPANY TO EXCLUDE OR TO ATTEMPT TO EXCLUDE OR LIMIT ITS LIABILITY; OR  
FOR FRAUD OR FRAUDULENT MISREPRESENTATION.
- 7.3. **Except as provided in Condition 7.2 the Company shall not be liable to the Client whether in contract, tort (including negligence), breach of statutory duty or otherwise for any loss of profit, loss of business, loss of market, loss of contract, damage to goodwill, loss of anticipated savings, loss of revenue, loss or damage incurred as a result of third party claims or any indirect or consequential loss howsoever caused.**
- 7.4. **Subject to Condition 7.2 and Condition 7.3, the Company's total aggregate liability under the Contract in any calendar year (whether in contract, tort (including negligence), breach of statutory duty or otherwise) arising out of or in connection with the performance or contemplated performance of the Contract or any delay in performance or failure to perform by the Company or otherwise howsoever arising shall be limited to the greater of (i) 125% of the value of the Price paid or payable in that calendar year; or (ii) five thousand pounds Sterling.**
- 7.5. **Subject to the other provisions of the Conditions any claim by the Client against the Company shall be made in writing and notified to the Company within 365 days of completion of the Services under the Contract by the Company to the Client.**
- 7.6. **All Services are undertaken in good faith, to a reasonable standard of care and on a confidential basis. Reports are issued on the basis of information known to the Company at the time that the Services are carried out. Although the Company will use all reasonable endeavours to ensure accuracy, the Services depend, inter alia, on the effective co-operation of the Client, its staff and on the information submitted to the Company. Save as required by law, no representation or warranty, whether express or implied or otherwise as to the accuracy of a Report is given by the Company. In consequence, all Reports are prepared on the basis that:**  
THERE IS NO RESPONSIBILITY TO ANY PERSON OR BODY OTHER THAN THE CLIENT;  
THEY ARE NOT CARRIED OUT FOR ANY PARTICULAR PURPOSE AND NO STATEMENT IS TO BE DEEMED, IN ANY CIRCUMSTANCES TO BE OR GIVE RISE TO A REPRESENTATION, UNDERTAKING, WARRANTY OR CONTRACTUAL CONDITION UNLESS SPECIFICALLY STATED;  
THEY ARE DETERMINED SOLELY BY THE PROFESSIONAL ANALYSIS UNDERTAKEN BY THE COMPANY'S STAFF ON EACH INDIVIDUAL CONTRACT AND ANY FORECASTS BY THE COMPANY OF THE RESULTS IS AN ESTIMATE ONLY;  
THE COMPANY IS ENTITLED TO BE PAID THE PRICE IRRESPECTIVE OF THE RESULTS OR CONCLUSIONS REACHED IN THE REPORT;  
THE RESULTS OF THE SERVICES SHALL ADDRESS THE ITEMS AND INFORMATION SUBMITTED ONLY AND ARE NOT TO BE REGARDED AS REPRESENTATIVE OF ANY LARGER POPULATION FROM WHICH THE SAMPLE WAS TAKEN; AND  
THE RESULTS ARE FINAL AND APPROVED BY THE COMPANY. THE COMPANY SHALL BE UNDER NO LIABILITY WHERE THE CLIENT HAS ACTED ON PRELIMINARY, UNAPPROVED RESULTS OR ADVICE.
- 7.7. **All time limits, if any, for the provision of the Services are estimates and no undertaking is given to carry out the Services or to despatch any Report within any period of time. Time of performance of the Services shall not be of the essence to the Contract.**
- 7.8. **The Company shall not be liable to the Client or be deemed to be in breach of the Contract by reason of any delay in performing, or any failure to perform, any of the Company's obligations in relation to the Services, if the delay or failure was due to any cause beyond the Company's reasonable control. Without prejudice to the generality of the foregoing, causes beyond the Company's reasonable control shall include an Act of God, explosion, adverse weather conditions, flood, earthquake, tempest, fire, accident, war or threat of war, acts or threats of terrorism, sabotage, insurrection, riot, civil disturbance, requisition, acts, restrictions, regulations, bye-laws, prohibitions or measures of any kind on the part of the governmental, parliamentary or local authority, import or export regulations or embargoes, strikes, lock-outs or other industrial actions or trade disputes (whether involving employees of the Company or of a third party), difficulties in obtaining raw materials, labour, fuel, parts or machinery, power failure or breakdown in machinery.**
- 7.9. **Except where the Services are provided to a person who deals as a consumer (within the meaning of the Unfair Contract Terms Act 1977), all warranties, conditions or other terms express or implied, statutory, customary or otherwise are excluded to the fullest extent permitted by law.**
- 7.10. **Where the Services are provided under a consumer transaction (as defined by the Consumer Transactions (Restrictions on Statements) Order 1976 as amended) the statutory rights of the Client are not affected by the Conditions.**
- 7.11. **The Client acknowledges that the above provisions of this Condition 7 are reasonable and reflected in the price which would be higher without those provisions and the Client will accept such risk and/or insure accordingly.**
8. **OBLIGATIONS OF CLIENT**
- 8.1. **The Client shall provide with each Sample and/or Service a unique purchase order or unique reference or unique authorisation with sufficient detail to allow the Company to identify each Sample (if applicable) and relate it to a specific Quotation and Service and the Company shall be entitled in good faith to rely upon such purchase order or reference provided to carry out the Service.**
- 8.2. **The Client may reproduce or replicate any Report in the form provided by the Company but shall not, without the written consent of the Company, reproduce or replicate any Report which has been modified from the form provided by the Company.**
- 8.3. **The Client shall be bound to inform the Company in writing prior to the Company carrying out any Service on a Sample that is of a dangerous or unstable nature and provide instruction on the safe handling of the Sample. For example, a dangerous or unstable Sample will include but is not limited to radioactive materials, biologically active or hazardous substances, reducing or oxidising agents, volatile organic compounds, materials considered to be toxic, harmful, corrosive, irritant, explosive, flammable, carcinogenic or reproductive hazards or materials that are dangerous to the environment. The Client shall indemnify the Company from and against all Losses suffered by the Company, including, without prejudice to the generality of the foregoing, all damage to the Company's property and all claims in respect of injury to or deaths of any of the Company's employees, sub-contractors or agents or of any third party, directly or indirectly arising from or in connection with the failure of the Client to inform the Company of the dangerous or unstable nature of a Sample and/or to provide adequate instruction on the safe handling of the Sample. Where the Client informs the Company that a Sample is of a dangerous or unstable nature, the Company may, in its absolute discretion, elect not to carry out the Service and to terminate the Contract whereupon the provisions of Condition 13.3 will apply, save that the Company shall have no liability for its termination of the Contract.**
- 8.4. **The Client agrees to indemnify, keep indemnified and hold harmless the Company from and against all Losses which the Company may suffer or incur arising out of or as a result of:**  
ANY BREACH OR NEGLIGENT PERFORMANCE OR FAILURE IN PERFORMANCE BY THE CLIENT OF THE TERMS OF THE CONTRACT;  
BREACH OF ANY LAW BY THE CLIENT OR THE COMPANY IN CONNECTION WITH THE PERFORMANCE OF THE SERVICES; OR  
ANY CLAIM THREATENED OR MADE AGAINST THE COMPANY BY ANY THIRD PARTY ARISING OUT OF THE SERVICES OR OUT OF ANY DELAY IN PERFORMING OR FAILURE TO PERFORM THE SERVICES (EVEN IF SUCH CLAIM IS SOLELY OR PARTLY ATTRIBUTABLE TO THE FAULT OR NEGLIGENCE OF THE COMPANY).
- NOTWITHSTANDING ANY OTHER PROVISION OF THESE CONDITIONS, THE CLIENT'S LIABILITY UNDER THIS INDEMNITY SHALL BE UNLIMITED.
- 8.5. **Where Services are provided at the premises of the Client, the Client will be responsible for providing a safe system of work for the Company and its employees while providing the Service and the Client shall be responsible for all costs necessarily required in discharging this obligation and shall indemnify the Company, its employees, sub-contractors and agents in respect of all Losses suffered as a result of any breach by the Client hereof.**
- 8.6. **In addition to any specific Client obligations set out in the Quotation, where Services are provided at the premises of the Client, the Client shall:**  
PROVIDE THE COMPANY WITH NECESSARY ACCESS TO ANY CLIENT PREMISES;  
ENSURE THAT ANY PREMISES PROVIDED BY THE CLIENT FOR THE PROVISION OF ANY PART OF THE SERVICE IS SUITABLE FOR THAT PURPOSE;  
PROVIDE ALL USUAL AUXILIARY AND OPERATING MATERIALS (INCLUDING GAS, WATER, ELECTRICITY, LIGHTING ETC) RELEVANT TO ANY CLIENT SUPPLIED PREMISES; AND  
PROVIDE THE COMPANY WITH ANY PERMITS REQUIRED FOR THE PERFORMANCE OF THE SERVICE.
- ADDITIONAL COSTS OR LOSSES ARISING FOR THE COMPANY DUE TO THE CLIENT'S FAILURE TO COMPLY WITH THE OBLIGATIONS IN THIS CONDITION 8.6 SHALL BE BORNE BY THE CLIENT.
9. **RISK AND PROPERTY IN RELATION TO TESTS**
- 9.1. **Unless stated in the Quotation, Samples are and remain at all times (including, without limitation, whilst at the Company's works and during transportation to and from the Company's works) at the entire risk of the Client who shall be responsible for effecting and maintaining its own insurance cover in relation thereto, it being hereby acknowledged by the Client that the charges of the Company do not include insurance.**

Document No.:	7301001/8896/01	Page No.:	11 of 13
Author:	Alex Sawford	Issue Date:	21/04/15
Client:	W.E Rawson	Issue No.:	1

- 9.2. Unless expressly stated to the contrary in the Contract, Samples of a stable nature shall be retained for three months from the date of their receipt and then destroyed.
- 9.3. Where Samples are, in the sole opinion of the Company, too bulky or too unstable to allow storage time of more than one month, it will be at the absolute discretion of the Company as to the length of time such samples are kept before being destroyed.
- 9.4. Samples shall be returned to the Client only if prior instructions in writing in that regard are received by the Company and the Client shall be charged for all costs associated therewith (including carriage).
10. OWNERSHIP, COPYRIGHT AND PATENTS IN RELATION TO SERVICES
- 10.1. All Intellectual Property Rights (including copyright in records, scientific documentary, primary data or electronic means of handling data) produced during any Service shall belong to and remain the property of the Company unless otherwise expressly agreed as part of the Contract.
- 10.2. Ownership and copyright in the Report shall remain with the Company. Upon the Client discharging all its obligations under the Contract, including payment of the Price, the Client will obtain an irrevocable, royalty-free, non-exclusive licence to use the Report (including the right to sub-licence), subject to the terms of Conditions 8.2, 10.2 and 10.4.
- 10.3. The Client hereby warrants that it will not use the Report or any other reports, results, or information supplied by the Company for the purposes of advertisement or publication to third parties. Any such use of the Report or other reports, results or information is permitted under the Contract only with the prior written consent of the Company who shall have the right to increase the Price where it consents to such advertisement and/or publication.
- 10.4. The Client hereby undertakes to abide by any regulations imposed by Certification Authorities, Standard Owners, Accreditation Bodies or the Department of Trade and Industry of Her Majesty's Government relating to marks, emblems or logos attached to the Reports or any other documents issued under the Service.
- 10.5. The Client shall indemnify the Company against all damages, penalties, costs and expenses to which the Company may become liable as a result of a claim that the use of any data, equipment or other materials supplied by the Client for the performance of the Services involves the infringement of any Intellectual Property Rights of any third party.
11. DATA PROTECTION
- 11.1. In exercising its rights and performing its obligations under the Contract the Client, to the extent necessary, shall at all times comply with the Data Protection Act 1998. To the extent that any personal data (as defined in the Data Protection Act 1998) is processed by the Client, the Client shall at all times take all appropriate technical and organisational measures against unauthorised or unlawful processing of such personal data and against accidental loss or destruction of, or damage to, such personal data.
- 11.2. If the Company receives a subject access request from a data subject who is identified in the personal data then the Client shall provide the Company with all such assistance as the Company may reasonably require to enable the Company to timeously comply with the subject access request.
12. SUB-CONTRACTING AND ASSIGNMENT
- 12.1. Unless otherwise restricted by the terms of the Contract and/or obligations under any accreditation or governing approval, the Company shall be entitled, in its absolute discretion, to sub-contract the whole of or any part of the Service.
- 12.2. The Company may assign, delegate, licence or hold on trust, all or any part of its rights or obligations under the Contract.
- 12.3. The Contract is personal to the Client which may not assign, delegate, licence, hold on trust or sub-contract all or any of its rights or obligations under the Contract without the Company's prior written consent.
13. TERMINATION
- 13.1. The Client shall not terminate the Contract without the written consent of the Company which may be subject to such terms, as in the Company's absolute discretion, recompense the Company for all loss it may suffer as a result of termination.
- 13.2. The Company may terminate the Contract and any other contract with the Client forthwith, without prejudice to any other right or remedy available to the Company and without the Company incurring any liability to the Client, in the following circumstances:
- IF THE CLIENT COMMITS A BREACH OF ANY TERMS OF THE CONTRACT OR ANY OTHER CONTRACT WITH THE COMPANY WHICH IS INCAPABLE OF REMEDY OR, IF CAPABLE OF REMEDY, HAS NOT BEEN REMEDIED BY THE CLIENT IN ACCORDANCE WITH A WRITTEN NOTICE FROM THE COMPANY REQUIRING REMEDY WITHIN THE PERIOD SPECIFIED IN THE SAID NOTICE;
- IF THE CLIENT FAILS TO MAKE PAYMENT OF THE PRICE WITHIN THE SPECIFIED TIME;
- THE CLIENT MAKES ANY VOLUNTARY ARRANGEMENT WITH ITS CREDITORS OR BECOMES SUBJECT TO AN ADMINISTRATION ORDER OR (BEING AN INDIVIDUAL OR FIRM) BECOMES BANKRUPT OR (BEING A COMPANY) GOES INTO LIQUIDATION (OTHERWISE THAN FOR THE PURPOSES OF AMALGAMATION OR RECONSTRUCTION) OR CEASES OR SUSPENDS PAYMENT OF ANY OF ITS DEBTS OR IS UNABLE TO PAY ITS DEBTS AS THEY FALL DUE WITHIN THE MEANING OF SECTION 123 OF THE INSOLVENCY ACT 1986;
- AN ENCUMBRANCER TAKES POSSESSION, OR A RECEIVER OR ADMINISTRATOR IS APPOINTED, OVER ANY OF THE PROPERTY OR ASSETS OF THE CLIENT;
- THE CLIENT CEASES, OR THREATENS TO CEASE, TO CARRY ON BUSINESS;
- THE COMPANY REASONABLY APPREHENDS THAT ANY OF THE EVENTS MENTIONED AT CONDITIONS 0, 0 OR 0 ABOVE IS ABOUT TO OCCUR IN RELATION TO THE CLIENT AND NOTIFIES THE CLIENT ACCORDINGLY;
- IF THE COMPANY REASONABLY APPREHENDS THAT PROVIDING THE SERVICES OR DEALING WITH THE CLIENT WOULD BE IN BREACH OF SANCTIONS RULES, THE CLIENT FAILS TO SATISFY DUE DILIGENCE REQUESTS MADE BY THE COMPANY IN CONNECTION WITH COMPLIANCE WITH SANCTIONS RULES OR OTHER RELEVANT LAWS OR REGULATIONS OR THE CLIENT DOES ANYTHING WHICH IS IN BREACH OF, OR WOULD CAUSE THE COMPANY TO BE IN BREACH OF, SANCTIONS RULES; AND
- AS PROVIDED IN CONDITION 8.3.
- 13.3. Notwithstanding that the Company terminates the Contract, this shall be without prejudice to the accrued rights and remedies of the parties prior to termination of the Contract and any rights or remedies under the Conditions, which shall remain in force, including the right to suspend all further Services to be made under any other contract with the Client (and in such event the Client shall not be released from any of its obligations to the Company under any other contract) and the right for the Company to receive full compensation for its loss under the Contract or any other contract with the Client.
- 13.4. On termination of the Contract pursuant to Condition 13.2, any indebtedness of the Client to the Company shall become immediately due and payable.
14. CONFIDENTIALITY
- 14.1. Each party (the "Recipient") shall keep all Confidential Information of the other party (the "Disclosing Party") in the strictest confidence. Save for the purposes of fulfilling its obligations under the Contract, the Recipient shall not, without the prior written consent of the Disclosing Party, disclose, divulge or grant access to the Confidential Information which it has received and shall not permit any of its employees, agents or officers to disclose, divulge or grant access to such Confidential Information.
- 14.2. Notwithstanding Condition 14.1, a Recipient may disclose Confidential Information which it has received if:
- IT IS REQUIRED TO DO SO BY ANY GOVERNMENTAL, LOCAL GOVERNMENT OR REGULATORY AUTHORITY OR BY LAW (BUT THEN ONLY TO THE EXTENT IT IS STRICTLY REQUIRED TO DO SO);
- IT IS STRICTLY NECESSARY FOR THE PURPOSE ONLY OF OBTAINING PROFESSIONAL ADVICE IN RELATION TO THE CONTRACT;
- IT WAS ALREADY KNOWN TO THE RECIPIENT PRIOR TO THE TIME OF DISCLOSURE BY THE DISCLOSING PARTY (WHERE THE RECIPIENT CAN PROVE THE SAME WITH DOCUMENTARY EVIDENCE); OR
- IT IS INFORMATION WHICH SUBSEQUENTLY BECOMES PUBLIC KNOWLEDGE OTHER THAN BY BREACH OF THE CONTRACT BY THE RECIPIENT.
- 14.3. In the event of an information request being made to a Recipient pursuant to any Freedom of Information legislation or the Environmental Information Regulations 2004 in respect of any Confidential Information then the Recipient shall notify the Disclosing Party and shall not disclose any information until an analysis has been made as to whether the information requested is capable of benefiting from an exemption from disclosure.
- 14.4. The obligations of the parties under this Condition 14 shall continue to apply without limit of time.
15. ANTI-CORRUPTION
- 15.1. The Client undertakes to comply with all applicable laws, statutes, regulations and codes relating to anti-bribery and anti-corruption including but not limited to the Bribery Act 2010 ("Anti-Corruption Laws") and that it shall not do, nor omit to do, any act that will lead to the Company being in breach of any of the Anti-Corruption Laws. The Client shall comply with the Company's Anti-corruption policies as may be notified to the Client and updated from time to time ("Relevant Policies").
- 15.2. The Client shall promptly report to the Company any request or demand for any undue financial or other advantage of any kind received by the Client in connection with the performance of the Contract.
16. GENERAL
- 16.1. Each right or remedy of the Company under any Contract is without prejudice to any other right or remedy of the Company under this or any other Contract.
- 16.2. Nothing in the Conditions shall create or be deemed to create a partnership between the parties.
- 16.3. The Conditions and the Quotation contain all the provisions which the parties have agreed in relation to the subject matter of the Contract and supersede any prior written or oral agreements, representations, proposal documentation or understandings between the parties. The Client agrees that it has not been induced to enter into the Conditions or the Contract by a statement or promise which they do not contain save that the Conditions shall not exclude any liability which the Company would otherwise have to the Client in respect of any statements made fraudulently by the Company.
- 16.4. In the event of one or more of the provisions of the Conditions being held by a competent authority to be invalid, illegal, or unenforceable, in whole or in part, the validity, legality or enforceability of the remaining provisions of the Conditions and the remainder of the provision in question shall not be affected thereby.
- 16.5. All notices to be served by one party on the other must be in writing and shall be deemed duly delivered or served at the time of service if delivered personally and forty eight hours after posting if posted by first class or airmail pre-paid post in each case to the registered address, if applicable, or if not applicable the last known address of the other party.

Document No.:	7301001/8896/01	Page No.:	12 of 13
Author:	Alex Sawford	Issue Date:	21/04/15
Client:	W.E Rawson	Issue No.:	1

- 16.6. No failure or delay by the Company to exercise any right, power or remedy will operate as a waiver of it nor will any partial exercise preclude any further exercise of the same or of some other right, power or remedy.
- 16.7. For the purpose of the Contracts (Rights of Third Parties) Act 1999, the Quotation and the Conditions do not and are not intended to give any rights or any right to enforce any of its provisions to any person who is not a party to it.
- 16.8. The Contract shall be governed by and construed in accordance with the laws of England and Wales and the Client submits to the exclusive jurisdiction of the English Courts.