

APPENDIX TWO ROOF QUOTE





ROOF COATINGS

COMPANY NAME : RESOLUTE

CONTACT NAME : MARK GOULDING

PROJECT NAME : MOD BICESTER

PROJECT ADDRESS : TBC

Dear Mark Goulding,

Thank you for inviting Premierseal to offer our proposals for the above project. Please find below our quotation for the agreed scope of works, sequence of operations, and standard conditions of contract.

Our costs to undertake the works as described or provided by yourself will be as follows:

Preliminaries:

██████████ - Please see in breakdown attached quotation schedule.

Schedule of Works:

██████████ - Please refer to the below priced schedule for itemised costs and clarifications relevant to individual elements.

Total Tender Sum:

██████████6 - excluding vat.

Clarifications

- Prices are subject to a full remeasure
- cost savings of around £120,000.00 can be made based on change of specification, this saving is over the entire contract value not per roof.
- Preliminary items have been calculated based on each building being instructed independently as requested. Costs can be negotiated based on instructed buildings.

Payment Terms

Premier Seal Roofing Solutions Ltd Payment Terms are 21 Days from date of Invoice. Monthly Interim Payments are applicable for all works greater than 30 days in duration. Interim payments will be qualified, and include Labour & Materials supplied up to the date of the Claim.

Delays During Contract Period

Our daywork charges will be applied for delays on site to an agreed programme caused by other trades and outside of the control of Premierseal Roofing Solutions Ltd. Where we are required to leave site through unforeseen delays outside of the agreed contract programme and outside of the control of Premierseal Roofing Solutions Ltd, a re-mobilization charge would be applied and our contract programme period adjusted accordingly.

Mobilisation Period	Standard 12 weeks from receipt of PO – To be agreed, dependent upon design and material requirements
Duration of Works	Unless otherwise agreed at order stage, our quotation is based on completion of our works within a 90 week period, based on a continuous working programme.

Daywork Rates:

Our daywork charges will be applied for delays on site to an agreed programme caused by other trades and outside of the control of Premierseal Roofing Solutions Ltd. Where we are required to leave site through unforeseen delays outside of the agreed contract programme and outside of the control of Premierseal Roofing Solutions Ltd, a re-mobilization charge would be applied and our contract programme period adjusted accordingly.

Site Manager / Working Foreman	£40.00 per hour
Skilled Operative	£30.00 per hour
Unskilled Operative / Labourer	£25.00 per hour
Remobilization Cost	£450.00
Materials	Cost + 30%
Plant	Cost + 30%

All prices stated throughout this project have been quoted with the works being carried out during normal working hours only (unless otherwise stated). Any out of hours working will incur additional costs to be confirmed.

All figures are net excl VAT. Unless otherwise stated.

Premier Seal Roofing Solutions Ltd standard terms and conditions are applicable and this estimate is valid for 30 days, unless otherwise agreed in writing.

I trust that I have interpreted your requirements correctly and await your further instructions. Assuring you of our best and most prompt attention at all times.

Yours sincerely

Daniel Harris

Estimator



For and on behalf of

Premierseal Roofing Solutions Ltd

Our Accreditation's



Constructionline
Gold Member



[CLICK HERE TO VIEW TERMS AND CONDITIONS](#)

TEL: 023 9217 9793 | E: info@prem-group.co.uk | W: www.prem-group.co.uk
Trading Office: Units 12 - 14 Highcroft Industrial Estate, Enterprise Road, Waterloooville, PO8 0BT
Company Registration Number: 8041947 | VAT No.: 154 987 855

QUOTATION

ESTIMATE NUMBER:	1979
REVISION:	-
TITLE:	D1
CLIENT:	Resolute
CLIENT PROJECT REF:	Bicester Barracks
CONTACT:	Mark
ESTIMATOR:	Daniel Harris
DATE:	01/07/2020

Total To Tender

ITEM NO	DESCRIPTION	NOTES	QUANT	UNIT	Totals	Totals
					Sell Rate	Total Sell Cost
	PRELIMINARIES:					
	Working Site Manager		20.00	week	£	
	Health and safety		10.00	Visits	£	
	Design and Drawings	N/A	0.00	item		
	SITE ESTABLISHMENT:					
	Office	free use of inetrnal space	20.00	week	£	
	Storage container	free use of inetrnal space	0.00	week		
	Heras fencing		20.00	week	£	
	Barriers		0.00	week		
	Delivery / Removal	Both ways	1.00	nr	£	
	SCAFFOLDING:					
	Edge Protection		411.00	lm	£	
	Scaffold alarm		0.00	week		
	Access Tower		9.00	nr	£	
	Netting	Free open access below roof internally	5000.00	m2	£	
	TEMPORARY SERVICES:					
	Power	Free access to, and free use of	0.00	item		
	Water	Free access to, and free use of	0.00	item		
	WASTE CLEARANCE:					
	General Waste	12yard gen waste	4.00	nr	£	
	Asbestos waste		0.00	m2		
	Plasterboard		0.00	m2		
	Transport		8.00	way	£	
	PLANT:					
	Forklift 14m		20.00	week	£	
	Cherry Picker		20.00	week	£	
	Scissor Lift		20.00	week	£	
	Delivery / Collection		6.00	no	£	
	GENERAL ITEMS:					
	PPE		20.00	week	£	
	Signage		1.00	nr	£	
	Accommodation		0.00	nights		
	Protective materials	No ground protection allowed for	0.00	item		
	O&M's		1.00	nr	£	
	WORKS:					
	Allow to jet wash the roof sheets, ensuring all moss growth, algae and soiling has been removed. The jet wash is to be carried out in strict accordance with the Giromax written specification and recommendations.		9827.00	m2	£	
	Remove all defective roof fixings and replace with new to match existing	PROVISIONAL QUANTITY	300.00	No	£	

	Remove the existing external skin of the rooflights and dispose off site. Allow to make good the disturbed surfaces to match the existing.		770.00	m2	
	Supply and install new GRP SAB Grade (3kg/m2) single skin translucent rooflights including all new fixings accessories, tapes etc. The installation is to be carried out in strict accordance with the manufacturer's written specification and recommendations.		770.00	m2	
	Prepare roof sheets in accordance with Giromax recommendations before applying Giromax Roofcoat RC Ultra system. The works are to be carried out in strict accordance with the manufacturer's written specification and recommendations. Prior to the application of the roof coat system, allow to protect the roof lights ensuring they remain free of any splashback paint.		11731.00	m2	
	Clean out existing rainwater goods by jet washing. Ensure the rainwater goods are clean and free flowing and downpipes free of leakage. Report any additional defects found immediately to the Contract Administrator.		783.00	lm	
	Replace existing Deep flow gutters to orth and South Elevation, system to include new down pipes, brackets and end caps.		174.00	lm	
	Supply and install GIROSIL Gutter RC-G Gutter Lining System to all gutters by GIROMAX Technology Limited, Eagle House, Bilton Way, Lutterworth, Leicestershire, UK, LE17 4JA.1TD. Tel: 01455 558969. Ensure all outlets are detailed in line with the manufacturer's written recommendations. GIROSIL system is to be installed by GIROMAX Approved Contractor.		783.00	lm	
	The contractor to provide at least 15 year guarantee for workmanship and to obtain material guarantee from the supplier of 15 years for both roof and gutter works.				
	ELEVATIONS				
	Allow to jet wash the cladding sheets, ensuring all moss growth, algae and soiling has been removed. The jet wash is to be carried out in strict accordance with the Giromax written specification and recommendations.		1479.00	m2	
	All cladding, trims, flashings, sections, corners to be coated with proprietary system to rear elevation; colour to be approved by CA; thoroughly prepare all surfaces and apply Girocte cladding system in accordance with manufacturer's recommendations		1479.00	m2	
	Remove the existing external skin of the cladding GRP translucent lights and dispose off site. Allow to make good the disturbed surfaces to match the existing.		700.00	m2	
	Supply and install new GRP SAB Grade (2.4kg/m2) cladding GRP translucent lights including all new fixings accessories, tapes etc. The installation is to be carried out in strict accordance with the manufacturer's written specification and recommendations.		700.00	m2	

Quotation valid for 30days from date indicated.

QUOTATION

ESTIMATE NUMBER:	1979
REVISION:	-
TITLE:	D1
CLIENT:	Resolute
CLIENT PROJECT REF:	Bicester Barracks
CONTACT:	Mark
ESTIMATOR:	Daniel Harris
DATE:	01/07/2020

Total To Tender

ITEM NO	DESCRIPTION	NOTES	QUANT	UNIT	Totals	
					Sell Rate	Total Sell Cost
	PRELIMINARIES:					
	Working Site Manager		22.00	week	£	
	Health and safety		10.00	Visits	£	
	Design and Drawings	N/A	0.00	item		
	SITE ESTABLISHMENT:					
	Office	free use of inetrnal space	22.00	week	£	
	Storage container	free use of inetrnal space	0.00	week		
	Heras fencing		22.00	week	£	
	Barriers		0.00	week		
	Delivery / Removal	Both ways	1.00	nr	£	
	SCAFFOLDING:					
	Edge Protection		411.00	lm	£	
	Scaffold alarm		0.00	week		
	Access Tower		9.00	nr	£	
	Netting	Free open access below roof internally	5000.00	m2	£	
	TEMPORARY SERVICES:					
	Power	Free access to, and free use of	0.00	item		
	Water	Free access to, and free use of	0.00	item		
	WASTE CLEARANCE:					
	General Waste	12yard gen waste	4.00	nr	£	
	Asbestos waste		0.00	m2		
	Plasterboard		0.00	m2		
	Transport		8.00	way	£	
	PLANT:					
	Forklift 14m		22.00	week	£	
	Cherry Picker		22.00	week	£	
	Scissor Lift		22.00	week	£	
	Delivery / Collection		6.00	no	£	
	GENERAL ITEMS:					
	PPE		22.00	week	£	
	Signage		1.00	nr	£	
	Accommodation		0.00	nights		
	Protective materials	No ground protection allowed for	0.00	item		
	O&M's		1.00	nr		
	WORKS:					

Allow to jet wash the roof sheets, ensuring all moss growth, algae and soiling has been removed. The jet wash is to be carried out in strict accordance with the Giromax written specification and recommendations.		9707.00	m2	£	
Remove all defective roof fixings and replace with new to match existing	PROVISIONAL QUANTITY	300.00	no	£	
Remove the existing external skin of the rooflights and dispose off site. Allow to make good the disturbed surfaces to match the existing.		1015.00	m2	£	
Supply and install new GRP SAB Grade (3kg/m2) single skin translucent rooflights including all new fixings accessories, tapes etc. The installation is to be carried out in strict accordance with the manufacturer's written specification and recommendations.		1015.00	m2	£	
Prepare roof sheets in accordance with Giromax recommendations before applying Giromax Roofcoat RC Ultra system. The works are to be carried out in strict accordance with the manufacturer's written specification and recommendations. Prior to the application of the roof coat system, allow to protect the roof lights ensuring they remain free of any splashback paint.		11454.00	m2	£	
Clean out existing rainwater goods by jet washing. Ensure the rainwater goods are clean and free flowing and downpipes free of leakage. Report any additional defects found immediately to the Contract Administrator.		874.00	lm	£	
Replace existing Deep flow gutters to orth and South Elevation, system to include new down pipes, brackets and end caps.		174.00	lm	£	
Supply and install GIROSIL Gutter RC-G Gutter Lining System to all gutters by GIROMAX Technology Limited, Eagle House, Bilton Way, Lutterworth, Leicestershire, UK, LE17 4JA.1TD. Tel: 01455 558969. Ensure all outlets are detailed in line with the manufacturer's written recommendations. GIROSIL system is to be installed by GIROMAX Approved Contractor.		874.00	lm	£	
The contractor to provide at least 15 year guarantee for workmanship and to obtain material guarantee from the supplier of 15 years for both roof and gutter works.					
ELEVATIONS					
Allow to jet wash the cladding sheets, ensuring all moss growth, algae and soiling has been removed. The jet wash is to be carried out in strict accordance with the Giromax written specification and recommendations.		1284.00	m2	£	
All cladding, trims, flashings, sections, corners to be coated with proprietary system to rear elevation; colour to be approved by CA; thoroughly prepare all surfaces and apply Girocte cladding system in accordance with manufacturer's recommendations		1540.00	m2	£	
Remove the existing external skin of the cladding GRP translucent lights and dispose off site. Allow to make good the disturbed surfaces to match the existing.		856.00	m2	£	
Supply and install new GRP SAB Grade (2.4kg/m2) cladding GRP translucent lights including all new fixings accessories, tapes etc. The installation is to be carried out in strict accordance with the manufacturer's written specification and recommendations.		856.00	m2	£	

QUOTATION

ESTIMATE NUMBER:	1979
REVISION:	-
TITLE:	D4
CLIENT:	Resolute
CLIENT PROJECT REF:	Bicester Barracks
CONTACT:	Mark
ESTIMATOR:	Daniel Harris
DATE:	01/07/2020

Total To Tender

ITEM NO	DESCRIPTION	NOTES	QUANT	UNIT	Totals	
					Sell Rate	Total Sell Cost
	PRELIMINARIES:					
	Working Site Manager		20.00	week	£	
	Health and safety		10.00	Visits	£	
	Design and Drawings	N/A	0.00	item		
	SITE ESTABLISHMENT:					
	Office	free use of inetrnal space	20.00	week	£	
	Storage container	free use of inetrnal space	0.00	week		
	Heras fencing		20.00	week	£	
	Barriers		0.00	week		
	Delivery / Removal	Both ways	1.00	nr	£	
	SCAFFOLDING:					
	Edge Protection		411.00	lm	£	
	Scaffold alarm		0.00	week		
	Access Tower		9.00	nr	£	
	Netting	Free open access below roof internally	5000.00	m2	£	
	TEMPORARY SERVICES:					
	Power	Free access to, and free use of	0.00	item		
	Water	Free access to, and free use of	0.00	item		
	WASTE CLEARANCE:					
	General Waste	12yard gen waste	4.00	nr	£	
	Asbestos waste		0.00	m2		
	Plasterboard		0.00	m2		
	Transport		8.00	way	£	
	PLANT:					
	Forklift 14m		20.00	week	£	
	Cherry Picker		20.00	week	£	
	Scissor Lift		20.00	week	£	
	Delivery / Collection		6.00	no	£	
	GENERAL ITEMS:					
	PPE		20.00	week	£	
	Signage		1.00	nr	£	
	Accomodation		0.00	nightd		
	Protective materials	No ground protection allowed for	0.00	item		
	O&M's		1.00	item	£	
	WORKS:					
	Allow to jet wash the roof sheets, ensuring all moss growth, algae and soiling has been removed. The jet wash is to be carried out in strict accordance with the Giromax written specification and recommendations.		9827.00	m2	£	

	Remove all defective roof fixings and replace with new to match existing	PROVISIONAL QUANTITY	300.00	No	£	
	Remove the existing external skin of the rooflights and dispose off site. Allow to make good the disturbed surfaces to match the existing.		770.00	m2	£	
	Supply and install new GRP SAB Grade (3kg/m2) single skin translucent rooflights including all new fixings accessories, tapes etc. The installation is to be carried out in strict accordance with the manufacturer's written specification and recommendations.		770.00	m2	£	
	Prepare roof sheets in accordance with Giromax recommendations before applying Giromax Roofcoat RC Ultra system. The works are to be carried out in strict accordance with the manufacturer's written specification and recommendations. Prior to the application of the roof coat system, allow to protect the roof lights ensuring they remain free of any splashback paint.		11731.00	m2	£	
	Clean out existing rainwater goods by jet washing. Ensure the rainwater goods are clean and free flowing and downpipes free of leakage. Report any additional defects found immediately to the Contract Administrator.		783.00	lm	£	
	Replace existing Deep flow gutters to orth and South Elevation, system to include new down pipes, brackets and end caps.		174.00	lm	£	
	Supply and install GIROSIL Gutter RC-G Gutter Lining System to all gutters by GIROMAX Technology Limited, Eagle House, Bilton Way, Lutterworth, Leicestershire, UK, LE17 4JA.1TD. Tel: 01455 558969. Ensure all outlets are detailed in line with the manufacturer's written recommendations. GIROSIL system is to be installed by GIROMAX Approved Contractor.		783.00	lm	£	
	The contractor to provide at least 15 year guarantee for workmanship and to obtain material guarantee from the supplier of 15 years for both roof and gutter works.					
	ELEVATIONS					
	Allow to jet wash the cladding sheets, ensuring all moss growth, algae and soiling has been removed. The jet wash is to be carried out in strict accordance with the Giromax written specification and recommendations.		1479.00	m2	£	
	All cladding, trims, flashings, sections, corners to be coated with proprietary system to rear elevation; colour to be approved by CA; thoroughly prepare all surfaces and apply Girocte cladding system in accordance with manufacturer's recommendations		1479.00	m2	£	
	Remove the existing external skin of the cladding GRP translucent lights and dispose off site. Allow to make good the disturbed surfaces to match the existing.		700.00	m2	£	
	Supply and install new GRP SAB Grade (2.4kg/m2) cladding GRP translucent lights including all new fixings accessories, tapes etc. The installation is to be carried out in strict accordance with the manufacturer's written specification and recommendations.		700.00	m2	£	

Quotation valid for 30days from date indicated.

QUOTATION

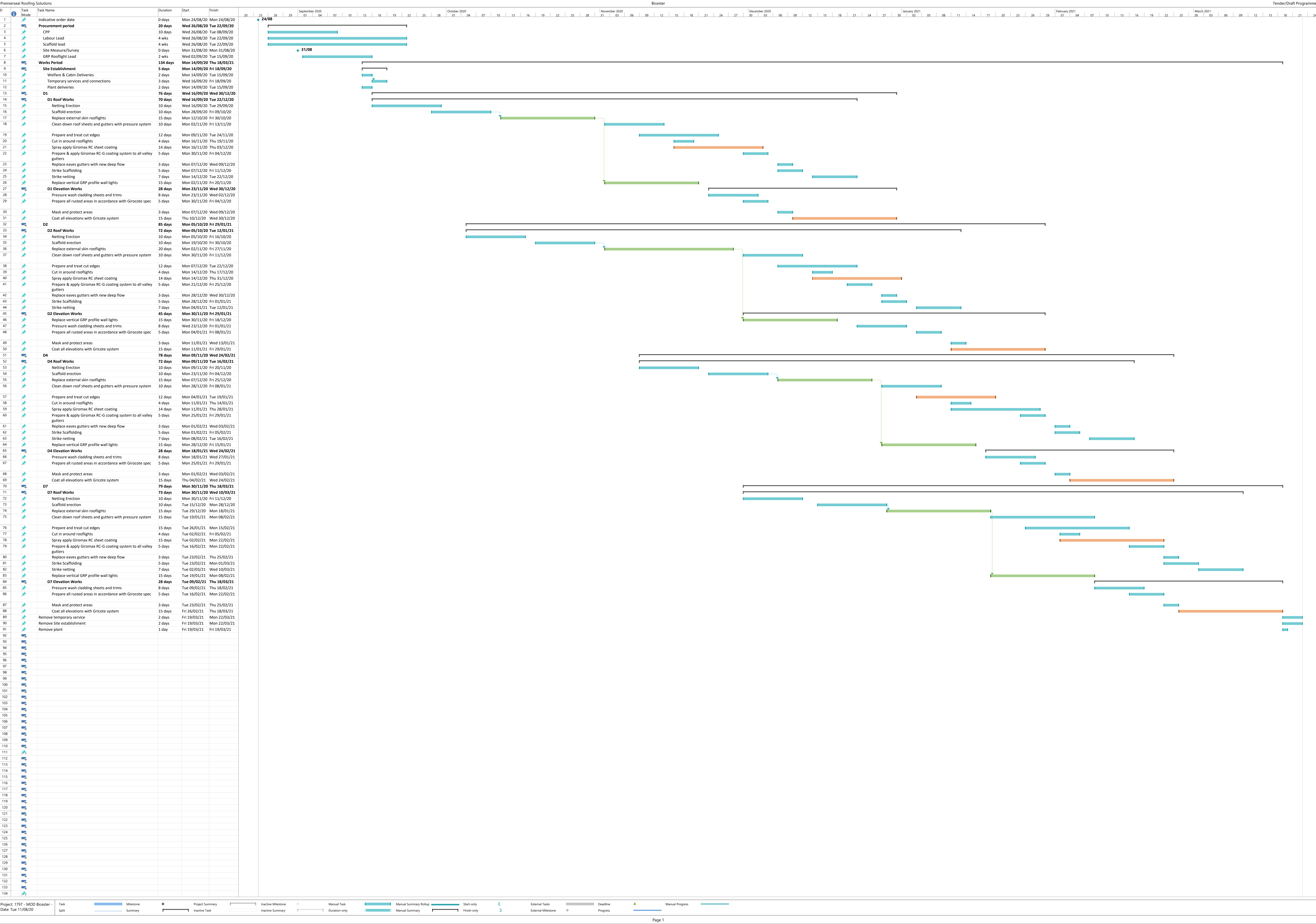
ESTIMATE NUMBER:	1979
REVISION:	-
TITLE:	D7
CLIENT:	Resolute
CLIENT PROJECT REF:	Bicester Barracks
CONTACT:	Mark
ESTIMATOR:	Daniel Harris
DATE:	01/07/2020

Total To Tender

ITEM NO	DESCRIPTION	NOTES	QUANT	UNIT	Totals	
					Sell Rate	Total Sell Cost
	PRELIMINARIES:					
	Working Site Manager		25.00	week	£	
	Health and safety		12.00	no	£	
	Design and Drawings	N/A	0.00	item		
	SITE ESTABLISHMENT:					
	Office	free use of inetrnal space	25.00	week	£	
	Storage container	free use of inetrnal space	0.00	week		
	Heras fencing		25.00	week		
	Barriers		0.00	week		
	Delivery / Removal	Both ways	0.00	nr		
	SCAFFOLDING:					
	Edge Protection		408.00	lm	£	
	Scaffold alarm		0.00	week		
	Access Tower		9.00	nr	£	
	Netting	Free open access below roof internally	10159.00	m2	£	
	TEMPORARY SERVICES:					
	Power	Free access to, and free use of	0.00	item		
	Water	Free access to, and free use of	0.00	item		
	WASTE CLEARANCE:					
	General Waste	12yard gen waste	4.00	nr	£	
	Asbestos waste		0.00	m2		
	Plasterboard		0.00	m2		
	Transport		8.00	way	£	
	PLANT:					
	Forklift 14m		25.00	week	£	
	Cherry Picker		25.00	week	£	
	Scissor Lift		25.00	week	£	
	Delivery / Collection		6.00	no	£	
	GENERAL ITEMS:					
	PPE		25.00	week	£	
	Signage		1.00	nr	£	
	Accomodation		0.00	nights		
	Protective materials	No ground protection allowed for	0.00	item		
	O&M's		1.00	nr	£	
	WORKS:					
	Allow to jet wash the roof sheets, ensuring all moss growth, algae and soiling has been removed. The jet wash is to be carried out in strict accordance with the Giromax written specification and recommendations.		10160.00	m2	£	

	Remove all defective roof fixings and replace with new to match existing	PROVISIONAL QUANTITY	300.00	no	£	
	Remove the existing external skin of the rooflights and dispose off site. Allow to make good the disturbed surfaces to match the existing.		1038.00	m2	£	
	Supply and install new GRP SAB Grade (3kg/m2) single skin translucent rooflights including all new fixings accessories, tapes etc. The installation is to be carried out in strict accordance with the manufacturer's written specification and recommendations.		1038.00	m2	£	
	Prepare roof sheets in accordance with Giromax recommendations before applying Giromax Roofcoat RC Ultra system. The works are to be carried out in strict accordance with the manufacturer's written specification and recommendations. Prior to the application of the roof coat system, allow to protect the roof lights ensuring they remain free of any splashback paint.		11454.00	m2	£	
	Clean out existing rainwater goods by jet washing. Ensure the rainwater goods are clean and free flowing and downpipes free of leakage. Report any additional defects found immediately to the Contract Administrator.		810.00	lm	£	
	Replace existing Deep flow gutters to orth and South Elevation, system to include new down pipes, brackets and end caps.		180.00	lm	£	
	Supply and install GIROSIL Gutter RC-G Gutter Lining System to all gutters by GIROMAX Technology Limited, Eagle House, Bilton Way, Lutterworth, Leicestershire, UK, LE17 4JA.1TD. Tel: 01455 558969. Ensure all outlets are detailed in line with the manufacturer's written recommendations. GIROSIL system is to be installed by GIROMAX Approved Contractor.		810.00	lm	£	
	The contractor to provide at least 15 year guarantee for workmanship and to obtain material guarantee from the supplier of 15 years for both roof and gutter works.					
	ELEVATIONS					
	Allow to jet wash the cladding sheets, ensuring all moss growth, algae and soiling has been removed. The jet wash is to be carried out in strict accordance with the Giromax written specification and recommendations.		1284.00	m2	£	
	All cladding, trims, flashings, sections, corners to be coated		1540.00	m2	£	
	Remove the existing external skin of the cladding GRP		856.00	m2	£	
	Supply and install new GRP SAB Grade (2.4kg/m2) cladding		856.00	m2	£	

Quotation valid for 30days from date indicated.



Page 2



APPENDIX THREE PUR TEST RESULTS



COMPOSITE CLADDING INSULATION TESTING

FROM

SITE D

MOD BICESTER OX26

Prepared For:

Graven Hill Purchaser LLC
C/o Mark Gauguier
Farrer & Co
66 Lincolns Inn Fields
London
WC2A 3LH

Date: 11th March 2021

Report Ref. 21022/1

CONTENTS

1.0	INTRODUCTION	1
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4.0	INSULATION ANALYSIS	3
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Appendices

Appendix A – Laboratory Analysis

Appendix D – Conditions and Limitations

1. Introduction

RS Specialist Services were instructed to carry out analysis of samples provided from composite cladding panels to Site D, MOD Bicester OX26.

The purpose of the analysis was to:

- Test samples removed and provided by others to identify their type and combustibility.

The results contained in this report relate to the samples provided and the condition in which they were provided.

The report was prepared by Richard Sharp BSc CEng MINDT.

Richard Sharp is a Chartered Engineer who has been involved in the investigation, inspection and remediation of buildings and structures for in excess of 30 years.

2. Description

We were provided with 4 foam insulation samples referenced as follows:

- Building D1
- Building D2
- Building D4
- Building D7

We were informed that these had been removed from composite cladding panels to these buildings.

3. Method of Investigation

3.1 Analysis

Samples of insulation (taken and provided by others) were analysed as follows:

Material Identification

- The insulation materials were examined directly by Fourier transform infrared spectrometry using attenuated total reflectance through a germanium crystal.
- The spectra produced were compared with reference library data to determine the nature of the materials.

Flammability Test

- The foam insulation samples were subjected to burning to determine if they were flammable and/or combustible.

Presence Of Fire Retardant

- A sub sample from the insulation samples was also examined qualitatively to determine the presence of phosphate which is a common component of fire retardants used with insulation materials.

The analysis was to be undertaken at a UKAS accredited laboratory – details in Appendix A.

5. Insulation Analysis

5.1 Material Identification

The results of the investigations carried out to establish the panel insulation types are as follows:

Location Ref	Location	Cladding Type	Build Up	Insulation Type
D1	Building D1	Reportedly Composite	Unknown	PUR Foam
D2	Building D1	Reportedly Composite	Unknown	PUR Foam
D4	Building D1	Reportedly Composite	Unknown	PUR Foam
D7	Building D1	Reportedly Composite	Unknown	PUR Foam

- All foam insulation samples gave a closest match to Polyurethane (PUR) foam.

5.2 Flammability/Combustibility

The foam insulation samples were subjected to burning to determine if they were flammable and/or combustible.

The insulation samples were tested to determine if they ignited (combustible) and continued to burn after the source of ignition was removed (flammable).

The results are as follows:

- Samples were found to readily support combustion. Hence all were combustible.
- Sample D2 was not found to be flammable. As PUR foam is generically flammable this may indicate the presence of moisture or a fire retardant (although no evidence of a retardant was found – see 5.3 below)
- Sample D7 was already charred – hence the flammability test was not conclusive.
- Samples D1 and D4 were too small for a conclusive flammability assessment to be made.

5.3 Presence OF A Fire Retardant

Sub-samples from each of the insulation samples were also examined qualitatively to determine the presence of phosphate which is a common component of fire retardants used with insulation materials.

- The insulation samples all gave a negative result for the presence of phosphate and a visual examination of the surfaces of the samples did not reveal the presence of any obvious coatings or layers.

Detailed analysis results are contained in Appendix A.

6. Discussion

6.1 Composite Insulated Panels

A composite insulated panel (CIP) typically comprises two metal skins that are bonded, one each side, to a central insulating core to form a sandwich.

Various cores are used to provide thermal insulation:

- Mineral fibre - nowadays usually a stone mineral wool
- PUR (polyurethane) foam.
- PIR (polyisocyanurate) foam.
- Polystyrene
- PF (Phenolic foam)

The type of insulating core used is important because it may have a direct bearing on the performance of a panel in a fire.

Polystyrene, for example, can melt and shrink, produce flaming droplets and contribute to further fire spread. Also, flame can spread unseen within facings which can result in collapse, particularly if the panel is not secured to a frame.

Typically, mineral wool would be non-combustible, foams partially combustible (depending on their type and any additives) and polystyrene highly combustible.

An LPCB approved panel is one which has been certified by the Loss Prevention Certification Board and is included in the List of Approved Products and Services issued by the Loss Prevention Council.

For general guidance PUR filled panels will not generally be LPCB approved, PIR may be and PIR panels treated with a fire retardant are likely to be (or at least perform to a level that would be similar to approved panels).

Polystyrene filled panels will not.

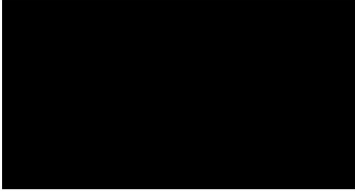
6.3 Panels At The Property

Samples were provided from reportedly composite panels.

All were found to comprise PUR foam and were combustible.

The flammability testing was not wholly conclusive due to sample sizes and condition but generically PUR is a flammable material.

Hence any panels from which these samples were removed would be unlikely to be LPCB.



RICHARD SHARP CEng BSc MINDT
Director

APPENDIX A
LABORATORY ANALYSIS

REPORT 69411/C

MOD SITE D, BICESTER

ANALYSIS OF INSULATION SAMPLES

Sandberg LLP
5 Carpenters Place
London SW4 7TD

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REPORT 69411/C

MOD SITE D, BICESTER

ANALYSIS OF INSULATION SAMPLES

RS Specialist Services Ltd
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This report comprises
3 pages of text
Appendix A of 1 sheet

For the attention of Mr Richard Sharp

9 March 2021

REPORT 69411/C

MOD SITE D, BICESTER

ANALYSIS OF INSULATION SAMPLES

Reference: Written instruction from Mr Richard Sharp.
RS Job No. 21022

1. INTRODUCTION

Four insulation samples, taken by others from the above location, were received in our laboratories on 3 March 2021.

We were instructed to carry out: in- house testing to identify the materials, determine if the samples were combustible (can be set on fire) and flammable (continues to burn after source of heat is removed) and check for the presence of a phosphate-based fire retardant within/on the foam insulation samples.

2. SAMPLE DETAILS

Sandberg Reference	Sample Reference	Sample Details	Weight of Sample Received, g
C10843	D1	Pale yellow insulation foam pieces	<0.1
C10844	D2	Light brown insulation foam pieces	1.8
C10845	D4	Light brown insulation foam pieces	<0.1
C10846	D7	Pale yellow insulation foam pieces, blackened edges	2.1

3. ANALYSIS METHOD AND RESULTS

3.1 Fourier Transform Infrared Spectroscopy

The organic materials were examined directly by Fourier transform infrared spectrometry using attenuated total reflectance through a germanium crystal.

The spectra produced were compared with reference library data to determine the nature of the materials.

The materials were identified as follows:

Sandberg Reference	Sample Reference	FTIR Identification
C10843	D1	Polyurethane (PUR)
C10844	D2	Polyurethane (PUR)
C10845	D4	Polyurethane (PUR)
C10846	D7	Polyurethane (PUR)

The spectra are reproduced in Appendix A.

3.2 Combustibility and Flammability

The samples were subjected to burning to determine using a Bunsen burner inside a fume cupboard to determine if they were combustible (can be set on fire) and flammable (continues to burn after source of heat is removed).

The results of the analyses are detailed as follows:

Sandberg Reference	Sample Reference	Combustible	Flammable
C10843	D1	Yes	- ¹
C10844	D2	Yes	No ²
C10845	D4	Yes	- ¹
C10846	D7	Yes	Inconclusive ³

1. Sample size too small to observe flammability
2. PUR foams are typically flammable, test could indicate moisture or fire retardant
3. Sample had blackened edges which indicated the sample had been partially burnt already

N.B. The laboratory test conditions may not truly reflect the performance of the materials in-situ due to air flow, environmental conditions and the surrounding building materials.

3.3 Presence of a Fire Retardant

A sub-sample from each insulation foam was also examined qualitatively to determine the presence of phosphate which is a common component of fire retardants used with insulation materials.

The results are as follows:

Sandberg Reference	Sample Reference	Phosphate Presence
C10843	D1	Not present
C10844	D2	Not present
C10845	D4	Not present
C10846	D7	Not present

4. REMARKS

A summary of the analyses is detailed as follows:

Sandberg Reference	Sample Details	Combustible	Flammable	PO ₄ Fire Retardant	FTIR Identification
C10843	D1	Yes	- ¹	Not present	Polyurethane (PUR)
C10844	D2	Yes	No ²	Not present	Polyurethane (PUR)
C10845	D4	Yes	- ¹	Not present	Polyurethane (PUR)
C10846	D7	Yes	Inconclusive ³	Not present	Polyurethane (PUR)

1. Sample size too small to observe flammability
2. PUR foams are typically flammable, test could indicate moisture or fire retardant
3. Sample had blackened edges which indicated the sample had been partially burnt already

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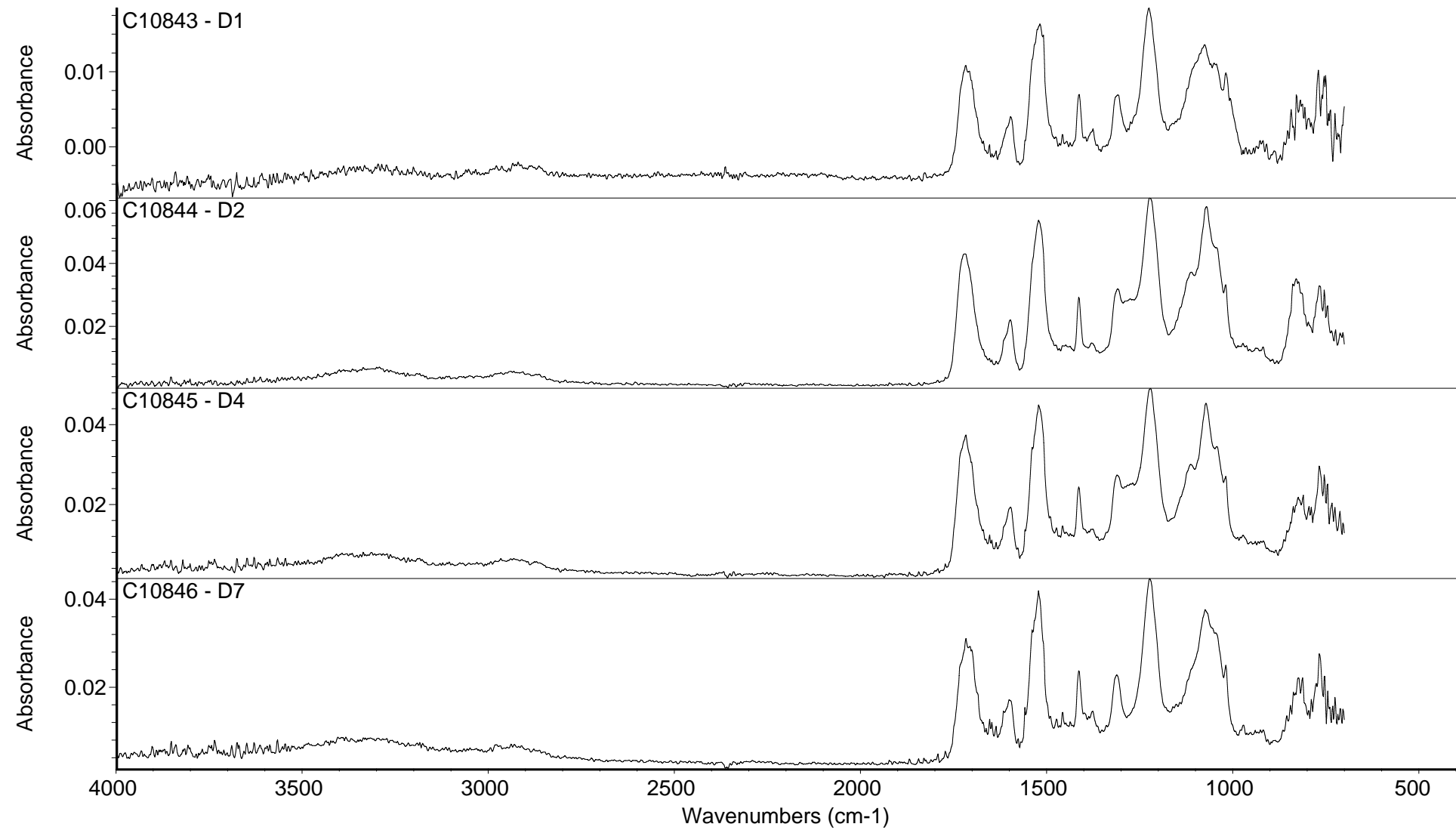


D Kinnersley
Senior Associate
9 March 2021

For the attention of Mr Richard Sharp

APPENDIX A
INFRARED SPECTRA

Infrared Spectra of Insulation Materials



This report is personal to the client, confidential, non-assignable and written with no admission of liability to any third party.

This report shall not be reproduced, except in full, without the written approval of Sandberg LLP.

Where test results are given, the results and our conclusions relate only to the samples tested and apply to the sample(s) as received, except where sampling has been conducted by Sandberg LLP.

Materials, samples and test specimens are retained for a period of 2 months from the issue of the final report.

Tests reported on sheets not bearing the UKAS mark in this report/certificate are not included in the UKAS accredited schedule for this laboratory.

Opinions and interpretations expressed herein are outside the scope for UKAS accreditation.

End of report.



APPENDIX B

CONDITIONS & LIMITATIONS

Conditions and Limitations

1. Access

If we observe evidence to suggest that concealed parts of the structure and fabric might be defective or contain hazardous materials, we will advise you accordingly and make recommendations for further investigations.

However, unless otherwise instructed by you, we will not open-up for inspection any permanently enclosed or concealed parts of the structure and fabric.

Access to some areas may be restricted or denied. If we find that our inspection has been excessively limited we will advise you accordingly and seek your further instructions.

Our report will list any significant internal and external areas that we are unable to inspect.

2. Deleterious Materials & Concrete Testing

Deleterious materials surveys are carried out by suitably experienced and qualified staff.

The sampling regime and inspection will be designed to be representative of the materials within the property. The samples taken and observations made would represent a fraction of the materials present within a property however.

In addition, the sampling and inspection locations will be dictated by accessibility, practicality and the requirement to minimise occupant disturbance.

The results provided therefore will relate to those materials/elements tested, inspected and reported on only.

Therefore there cannot be a guarantee that all potentially deleterious materials or defects have been identified.

3. Cladding Surveys

Unless specifically instructed intrusive investigations or materials testing will not be carried out.

The sampling regime and inspection will be designed to be representative of the materials within the property. The samples taken and areas inspected would represent a fraction of the materials present within a property however.

In addition, the sampling and inspection locations will be dictated by accessibility, practicality and the requirement to minimise occupant disturbance.

The results provided will relate to those materials/elements/locations tested and reported on only.

Therefore there cannot be a guarantee that all potentially deleterious/defective materials (including composite panels, ACM panels or other combustible materials) have been identified.

No compliance with or deviation from relevant fire safety/building legislation or regulations is indicated or suggested.

If required, a Fire Safety Engineer should be appointed to review all existing information related to the cladding.

4. Asbestos Surveys

Asbestos surveys are carried out by experienced P402 qualified staff in general accordance with HSE document "Asbestos: The survey guide".

The survey types available are as follows:

1. Management Survey – Sampling Survey, samples of representative suspect materials taken for laboratory analysis.
2. Refurbishment & Demolition Survey – Pre demolition/major refurbishment survey.

In addition we can undertake a pre acquisition/overview – A walk around non intrusive survey.

All reasonable efforts will be made to detect asbestos. It must be recognised however, that areas of asbestos may be in inaccessible locations or obscured.

In addition the inspection locations will be at selected or random spot positions (although designed to be representative of the property) only.

As such **no guarantee, regardless of the type of survey**, can be given that all asbestos materials will be located.

Except where specifically requested, land contamination would not be included.

RS will accept no responsibility for claims arising as a consequence of exposure of others to asbestos containing materials and accept no liability in the situation that asbestos is not identified during a survey.

5. Investigations and Testing

RS will employ techniques and equipment considered appropriate for particular investigations. Should it subsequently become clear that additional works are required this will be communicated to the client.

RS are therefore unable to guarantee that the results of each and every investigation will be completely conclusive but will recommend additional works where appropriate.

Any non-destructive testing may be limited by the capabilities of the technique/method.

The results of water ingress investigations can result in remedial works being proposed in order to eliminate certain details or identified defects.

Water can appear within a building at one location although there is more than one source. It must therefore be recognised that additional testing or remedial works may therefore be required.

6. Payment Terms

Invoices are issued either at completion of the appointment or, in the case of ongoing projects, approximately monthly.

Payment is strictly due within 28 days of the invoice date.

RS retain the right to charge an interest of 8% above standard base rate on overdue accounts.

7. Obligations

RS will exercise all reasonable skill, care and diligence in the provision of the service and act in good faith, but accept neither responsibility nor liability for any loss or damage arising from the service.

8. Retention of Title, Copyright and Samples

The Title for all reports, advice, design or material of any kind provided in writing or orally is retained until payment for all work has been made in full.

Our report shall be relied upon only by the party to whom the report is addressed and only when payment for the report has been made in full.

Copyright on all of the above mentioned is retained permanently unless expressly assigned by RS in writing.

Samples or materials may be disposed of after three months unless express instructions to the contrary have been given.

9. Costings

The costings for remedial works are estimates only based on observations made during the inspection.

They are approximate figures that indicate the general scale of likely costs only and are not corroborated by tenders from the market.

Except where stated, the costings would not include for VAT, professional fees or access provision.