



GEOSHIELD

Verification Report



PROJECT REFERENCE:

GEO101436

REPORT NUMBER:

006

PROJECT:

GCL - Clarendon Road PHASE 3

PROJECT ADDRESS:

Clarendon Road

Hornsey

N8 0JU

MEMBRANE SPECIFICATION:

Gas membrane to specification BS8485 2015

Installed to CIRIA 735

Pudlo GP Ultra+ Gas Barrier

Pudlo GP Ultra Tape

Pudlo GP Ultra EXT Tape

Pudlo Liquid Gas Barrier



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SPECIFICATION:

INFORMATION INCLUDED:

Material specification technical data sheets

5192204/P3_RemStrat Rev0.4

W257-PUD-D1-00-DR-S-02-1000

W257-PUD-D2-00-DR-S-02-1001

W257-PUD-D3-FN-DR-S-02-1002

W257-PUD-D3-XX-DR-S-02-1005

W257-PUD-D3-XX-DR-S-05-1000

W257-PUD-D4-00-DR-S-01-1006

W257-PUD-D4-BL-DR-S-02-1003

W257-PUD-DD-XX-DR-S-03-0001 to W257-PUD-DD-XX-DR-S-03-0024

W257-PUD-DD-XX-SK-S-03-0001 to W257-PUD-DD-XX-SK-S-03-0003

Information brought forward from the Pre Verification Plan. Any alterations to the originaally

submitted design should be made aware to Geoshield



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VERIFICATION OFFICER: Jake Purdie

VERIFICATION COMPANY: GeoShield Limited

Icon Business Park, 4100 Park Approach

Thorpe Park, LEEDS

West Yorkshire

LS15 8GB

CONTACT NUMBER: 07393712648

EMAIL ADDRESS: Jpurdie@Geoshield.co.uk

ORDER NUMBER:

PER VISIT: YES:



NO:



PROJECT: YES:



NO:





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CLIENT DETAILS

CLIENT CONTACT:	Rohallah De Sousa
CONTACTS ROLE:	Ground Construction Ltd
MOBILE PHONE:	02082387000
EMAIL ADDRESS:	RohallahDeSousa@GroundConstruction.com



CLIENT CONTACT:	
CONTACTS ROLE:	
MOBILE PHONE:	
EMAIL ADDRESS	
NOTES:	
NOTES:	
NOTES:	



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APPLICATION TEAM LEADERS

APPLICATOR NAME: Ermal

COMPANY: GCL - Site Engineer

APPLICATOR TEL: 07479553833

APPLICATOR EMAIL:

APPLICATOR NAME: Adrian Toderasc

COMPANY: GCL

APPLICATOR TEL:

APPLICATOR EMAIL:

NOTES: Installers have been toolbox talked by Geoshield during Visit no.6.

NOTES: The application standard will be monitored throughout and during each

NOTES: future inspection visits.

NOTES: Further training will be provided if deemed necessary.



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AREA SURVEYED: Block D1 Slab - Pour 1. (2nd visit for this area).

SITE CONDITIONS:

WEATHER: Raining - Cold

TEMPERATURE: 4c.

MEMBRANE TEMPERATURE: N/A

RELATIVE HUMIDITY: N/A

TIME: 10:00 - 12:30

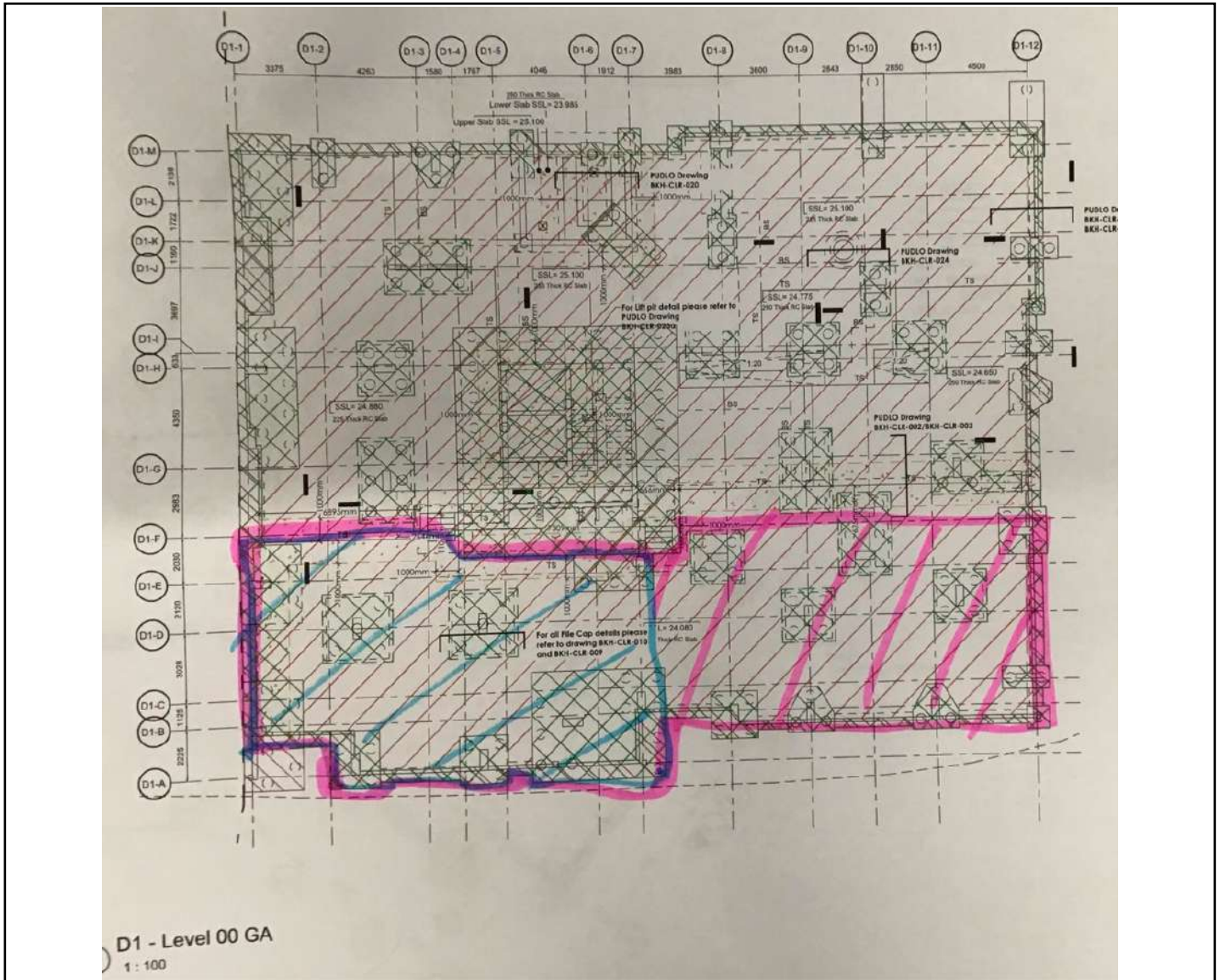
REPORT NUMBER: 006

DATE: 12/01/2021

ACCOMPANIED: Ermal - GCL Site Engineer

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VERIFICATION LAYOUT



The layout above highlighted in pink shows Block D1 - Pour 1 (Base installation only)

which was verified during this inspection visit.

This is the second time this area has been inspected due to the faults found previously



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OVERVIEW PHOTOGRAPHS



The photograph above shows an overview of the installation of the

Pudlo GP Ultra+ Gas Barrier to D1 Slab - Pour 1 (base installation only).



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LIMITATIONS

SURVEY AREA: Block D1 Slab - Pour 1

RESTRICTIONS AND LIMITATIONS: Restricted access to area of works.

The photograph below shows the restricted access present, during today's inspection visit. This meant that air lance integrity testing could not be carried out to the welded lap joints. A thorough visual, pick and probe test was however carried out.



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BGA
British Geomembrane Association



VERIFICATION ITEM ONE

LOCATION/GRID LINE: Block D1 Slab - Pour 1

NOTES: Installation of Pudlo GP+ Ultra membrane.

The first photograph below shows an overview of some examples of welded lap joints, which have been verified during this inspection visit. The installers have now correctly sealed the lap joints, as per the design details and manufacturers specification.



The lap joints were previously taped, which is not as per the detail.

All lap joints have now been welded and sealed correctly.

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VERIFICATION ITEM ONE



The photograph above demonstrates a pick and probe test being carried out to a welded lap joint within the area verified during this visit.

Air lance integrity testing could not be carried out during this visit, due to the restricted access to the area - see limitation page.



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VERIFICATION ITEM TWO

LOCATION/GRID LINE: Block D1 Slab - Pour 1

NOTES: Sealing of pile caps and pipe penetrations.

The first photograph below shows an overview photograph of two examples, where the installers have sealed the Pudlo GP+ Ultra, to the Pile caps. The pile caps have also been sealed using Pudlo liquid gas membrane, as per the design details.



The second photograph above shows a close up view of the termination and sealing detail, present between the membrane and pile caps. The detail for this has been updated, and completed during this visit. The installers have taped the membrane to the painted pile cap, using Pudlo EXT Tape, and sealed the individual steel rebars, again using the Pudlo liquid gas membrane.

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VERIFICATION ITEM TWO



The photograph above portrays a sealed pipe penetration, located within the verified area. This pipe penetration has been sealed to manufacturers specification.



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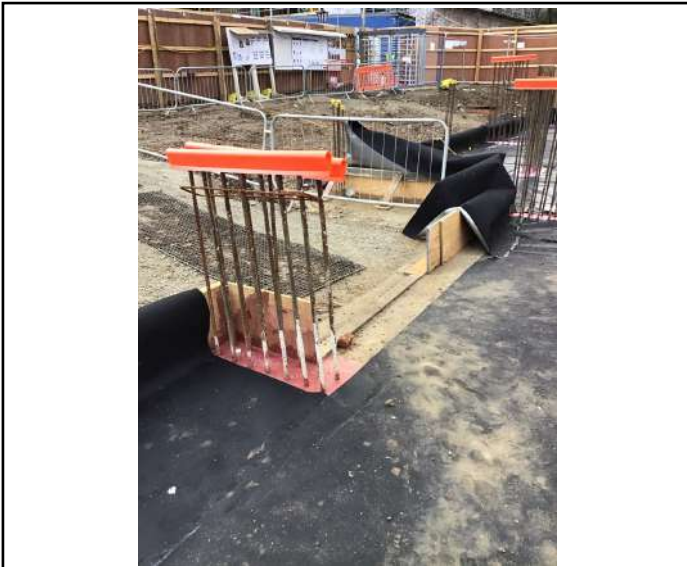


VERIFICATION ITEM THREE

LOCATION/GRID LINE: Block D1 Slab - Pour 1

NOTES: Incomplete works - to be verified during next visit.

The two photographs below show examples of incomplete works, which haven't been possible to verify during today's visit. These works will need to be completed, and verified during the next visit, again to achieve sign off for this area.



The first photograph shows an access route for the area verified, the shutter will need to be erected, to allow the installers to lap and finish the membrane. The second photograph shows an incomplete pile cap, with a unsealed joint in the membrane.



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VERIFICATION ITEM THREE



The photograph above shows a close up view of an incomplete corner detail, that needs to be sealed and verified, in order to achieve sign off completion for this area.

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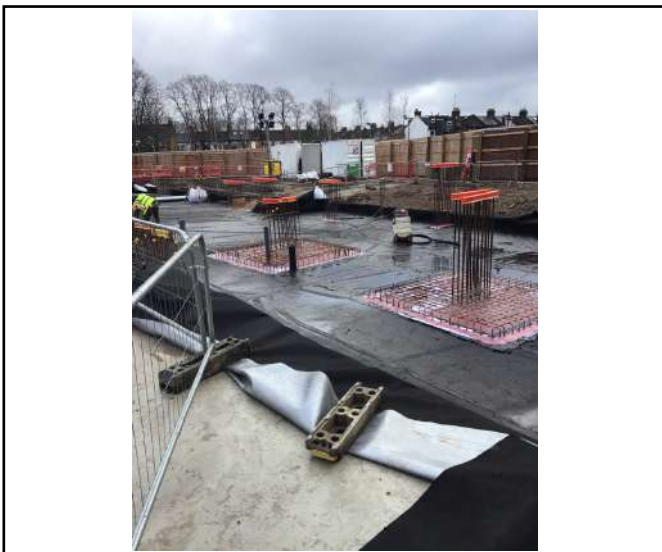
ADDITIONAL PHOTOGRAPHS



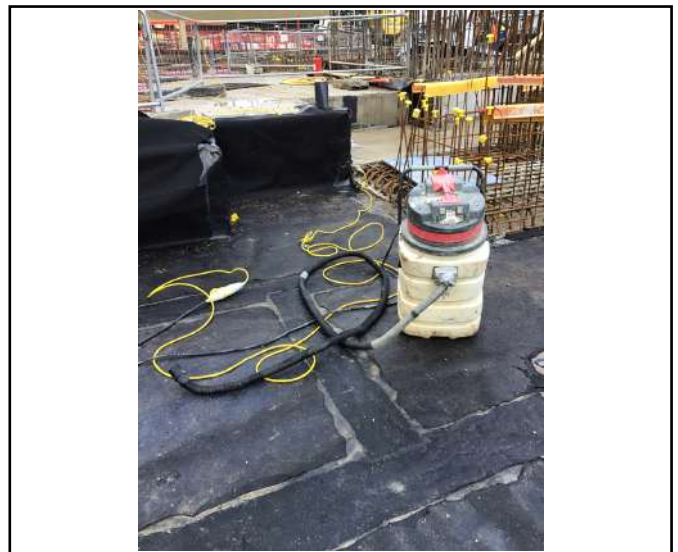
Pudlo liquid gas barrier applied
to all pile caps.



Installer welding a lap joint using
hot air leister and roller.



Overview photograph example showing
area verified during this visit.



Water hoover used to dry areas.



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REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
10/11/2020	001	No faults found	✓
12/11/2020	002	Damaged corner repaired	✓
01/12/2020	003	1. Damage to the membrane had been patched but the fleece	✓
		below had not been removed and therefore the seal wasn't very	✓
		strong. This patch was removed and the damage was repaired	✓
		correctly during this visit.	✓
		2. 3 x pile caps sealed using the Pudlo Liquid GB had been	✓
		chipped and therefore additional Liquid Gas Barrier had to be	✓
		applied to small areas.	✓
10/12/2020	004	1. Incorrect sealing of lap joints in membrane - taped not welded.	✓
		2. 3 x pipe penetrations not sealed.	✓
18/12/2020	005	No faults or defects identified during this visit.	✓
12/01/2021	006	1. Some pile caps incomplete as per the detail for sealing.	
		2. Several welded joints required re-welding to achieve a seal.	✓
		3. Corner details not sealed due to access required to the area.	



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GAS MEMBRANE TESTING

VISUAL:	☐ YES	☒	☐ NO	☐	SMOKE TEST:	☐ YES	☐	☐ NO	☒
COMPRESSED AIR:	☐ YES	☐	☐ NO	☒	DILECTIC	☐ YES	☐	☐ NO	☒
DESTRUCTIVE:	☐ YES	☐	☐ NO	☒	OTHER:	☐ YES	☒	☐ NO	☐
Testing checklist attached:	☐ YES	☐	☐ NO	☐					

Gridline/Plot Sign off

Gridline/Plot Sign off	Block D1 - Core - Lower	☒
Gridline/Plot Sign off	Block D1 - Core - Middle and Upper	☒
Gridline/Plot Sign off	Pump Chamber Base	☒
Gridline/Plot Sign off	Block D2 - Core.	☒
Gridline/Plot Sign off	Block D1 Slab - Pour 1 (50%)	☐
Gridline/Plot Sign off	Pumping station.	☒
Gridline/Plot Sign off	Block D1 Slab - Pour 1 (Base installation only).	☒
Gridline/Plot Sign off		☐
Gridline/Plot Sign off		☐
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Gridline/Plot Sign off		☐



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VERIFICATION SUMMARY

This was the sixth visit to Clarendon Road - Phase 3 where verification of the

installation of the Pudlo GP Ultra+ Gas Barrier to D1 - Pour 1 (base only).

All laps of the Pudlo GP Ultra+ Gas Barrier have now been correctly sealed and remediated, as per the request during visit four.

All details such as pipe penetrations and corners have also been sealed correctly, however some corner details are yet to be sealed due to access required to area.

Complete pile caps have now been sealed as per the revised detail. The installers have sealed onto the pile cap a minimum of 150mm, and sealed the steel rebars using double sided butyl tape and gas resistant liquid membrane.

Verified in accordance with CIRIA 735.

GEOSHIELD SIGNATURE:

DATE: 12/01/2021