# GEOSHIELD Verification Report

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| PROJECT REFERENCE: | GEO101436 |
| REPORT NUMBER: | 009 |
| 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

GEOSHIELD
Verification
PLAN

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 orignaally

submitted design should be made aware to Geoshield

# GEOSHIELD Verification Report

VERIFICATION OFFICER: John Cornish

VERIFICATION COMPANY: GeoShield Limited

Icon Business Park, 4100 Park Approach

Thorpe Park, LEEDS

West Yorkshire

LS15 8GB

CONTACT NUMBER: 07493769477

EMAIL ADDRESS: Jcornish@Geoshield.co.uk

ORDER NUMBER:

PER VISIT: YES: ☑ NO: ☐ PROJECT: YES: ☐ NO: ☑

# GEOSHIELD Verification Report

## CLIENT DETAILS

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

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

# GEOSHIELD Verification Report

## APPLICATION TEAM LEADERS

| | |
|---|---|
| APPLICATOR NAME: | Ermal |
| COMPANY: | GCL - Site Engineer |
| APPLICATOR TEL: | 07479553833 |
| APPLICATOR EMAIL: | |

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| | |
|---|---|
| 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.

# GEOSHIELD Verification Report

AREA SURVEYED: Block D1 - Pour 3, Pour 4, Pour 5

Block D1 - Substation wrapped.

Block D2 - I-L/7-12.

SITE CONDITIONS:

# WEATHER: Overcast.

# TEMPERATURE: 11c.

# MEMBRANE TEMPERATURE: N/A

# RELATIVE HUMIDITY: N/A

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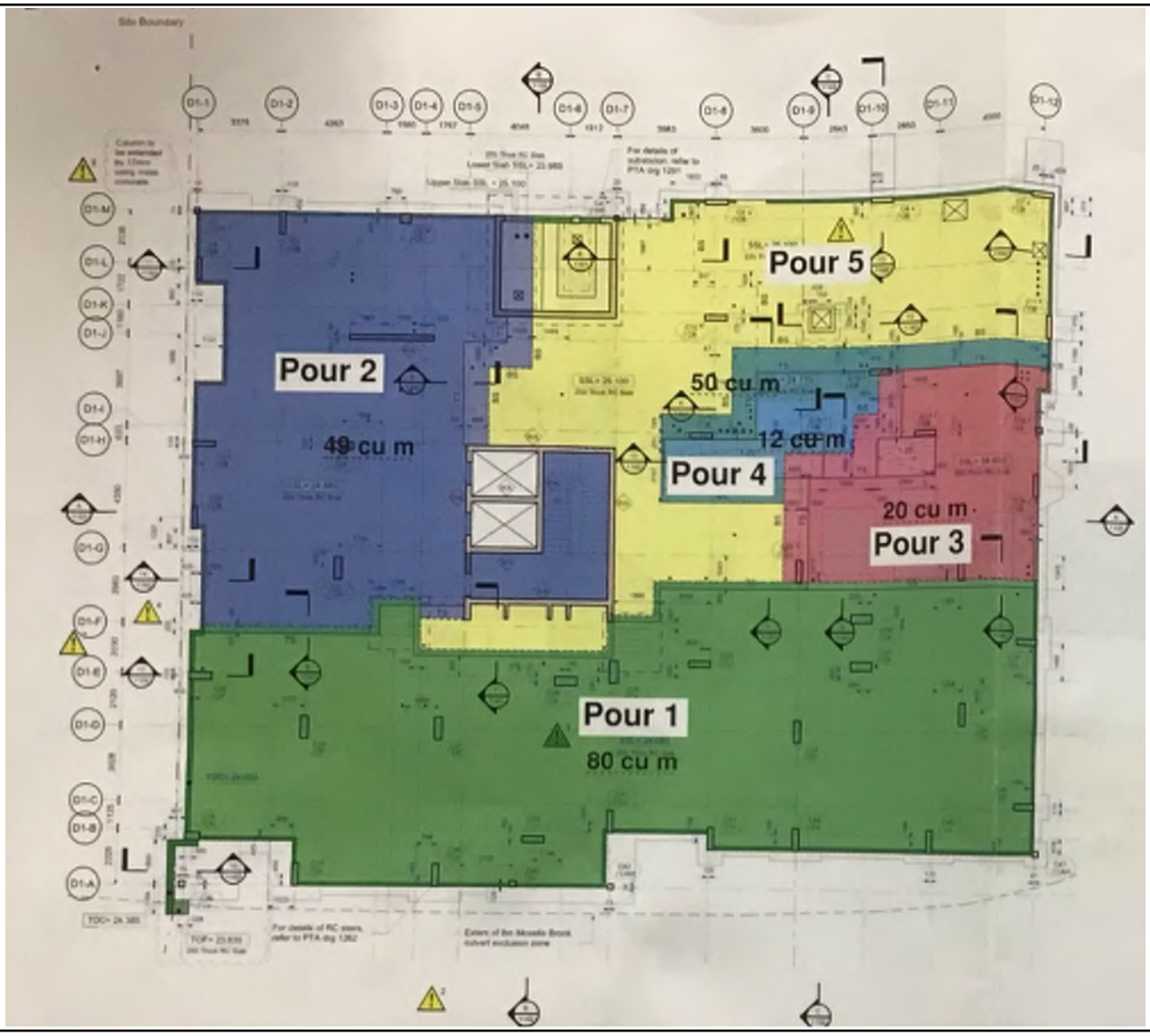
TIME: 08:00 - 10:0 REPORT NUMBER: 009

DATE: 29/01/2021

ACCOMPANIED Ermal - GCL Site Engineer

# GEOSHIELD Verification Report

## VERIFICATION LAYOUT




Verification of Block D1 Pour 3, 4, and 5 took place during this visit. Pour 3 and 4 have now been verified and signed off. Pour 5 will need another visit before the area can be signed off.

# GEOSHIELD Verification Report

## OVERVIEW PHOTOGRAPHS

The photograph above shows the area of Block D2 which was verified during this visit. The installers have installed the Pudlo GP Ultra+ Gas Barrier to the area but not all details have been completed.

# GEOSHIELD Verification Report

## OVERVIEW PHOTOGRAPHS

The photograph above shows Block D1 substation which has been wrapped

and verified during this visit.

# GEOSHIELD Verification Report

## VERIFICATION ITEM ONE

LOCATION/GRID LINE: Block D1 - Pour 4 and 5 and Block D2 slab area.

NOTES: Installation of Pudlo GP Ultra+ Gas Barrier.

The first photograph below shows an overview of a welded lap of the Pudlo GP Ultra + Gas Barrier. The installers have used a hot air leister and roller to achieve a consistent 40mm weld.

The second photo above shows a pick and probe test carried out to a welded lap.

No faults or defects identified. Verified in accordance with CIRIA 735.

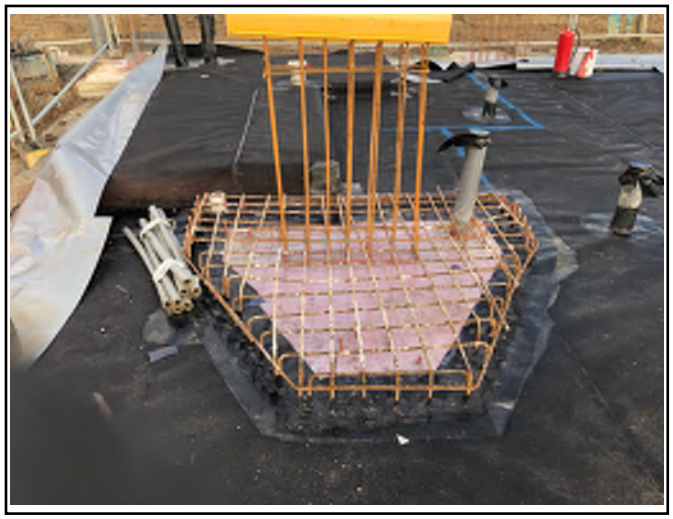
# GEOSHIELD Verification Report

VERIFICATION ITEM TWO

LOCATION/GRID LINE: Block D1 - Pour 4 and 5 and Block D2 slab area.

NOTES: Piles and pipe penetrations sealed.

The two photographs below show examples of sealed piles. The installers have first applied a coat of Pudlo liquid membrane to all pile heads. Once dry the installers have the used a hot air leister and roller to adhere the EXT tape to the membrane and ...



.... the painted pile head. The installers have also used the EXT tape to seal each steel bar. The Dina tellers have achieved a strong seal.

No faults or defects identified.

Installed in accordance with BS8485:2019.

# GEOSHIELD Verification Report

VERIFICATION ITEM TWO

The photograph above shows a pick and probe test carried out to a sealed pipe penetration. The installer shave used a hot air leister and roller to achieve a good seal. No faults or defects identified.

Verified in accordance with CIRIA 735.

# GEOSHIELD Verification Report

VERIFICATION ITEM THREE

LOCATION/GRID LINE: Block D1 substation.

NOTES: Substation wrapped.

The first photograph below shows the installers have wrapped the substation. They first applied a coat of primer to all areas of concrete where the tanking had been adhered to. The installers have then welded the previously installed membrane....

... to the newly installed tanking. A large number of holes were identified in the Pudlo GP Ultra+ Gas Barrier installed to the base of the substation. As shown in both photos above the installers have patched all the holes using EXT tape and a hot air leister and roller to aid in the adherence of the patches.

# GEOSHIELD Verification Report

VERIFICATION ITEM THREE

The photograph above shows a pick and probe test carried out to a patched hole which was identified when inspecting the Substation. A strong seal has been achieved by the installers. No faults or defects identified.

Verified in accordance with CIRIA 735.

# GEOSHIELD Verification Report

## ADDITIONAL PHOTOGRAPHS

Penetrations from last visit have now been sealed.

Pick and probe test to penetrations through steel.

Fault identified in welded lap.

Installers have rectified the gap.

# GEOSHIELD Verification Report

## 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. | ✔ |

# GEOSHIELD Verification Report

## REMEDIATION LOG

| Date | Nr | Remediation Description | Y/N |
|---|---|---|---|
| 15/01/2021 | 007 | 1. 1 lap had not been welded correctly the installers have used | ✔ |
| | | a hot air leister and roller to ensure that a 40mm weld has been | ✔ |
| | | achieved. | ✔ |
| 22/01/2021 | 008 | 1. One hole in the membrane identified. The installers have | ✔ |
| | | patched the hole by removing the fleece around the hole and then | ✔ |
| | | a hot air leister has been used to adhere EXT tape ove the hole. | ✔ |
| | | 2. A couple small areas in the laps of the Pudlo GP Ultra+ Gas | ✔ |
| | | Barrier did not have a 40mm weld. Installers have re welded | ✔ |
| | | these areas during this visit. | ✔ |
| | | 3. Some penetrations of the membrane have not been sealed | ✔ |
| | | these will have to be sealed and verified during the next visit | ✔ |
| | | (See verification item 3 - Report 8) | ✔ |
| 29/01/2021 | 009 | 1. A couple pipe penetrations had been sealed but a sufficient lap | ✔ |
| | | using the EXT tape had not been achieved. The installers have | ✔ |
| | | applied additional patches of EXT tape during this visit. | ✔ |

# GEOSHIELD Verification Report

## REMEDIATION LOG

| Date | Nr | Remediation Description | Y/N |
|---|---|---|---|
| | | 2. One fault was identified whilst inspecting a welded lap. The | ✔ |
| | | intellects have used a hot air leister and roller to ensure there are | ✔ |
| | | no gaps. | ✔ |
| | | 3. Incomplete works are still outstanding for Block D1 pour 2 and | |
| | | 5 as well as Block D2 I-L/7-12. | |
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# GEOSHIELD Verification Report

## 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 ☐

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## 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 | Block D1 slab - Pour 1 (100%) | ✔ |
| Gridline/Plot Sign off | D1 Substation. | ✔ |
| Gridline/Plot Sign off | Block D1 - Pour 2 | |
| Gridline/Plot Sign off | Block D1 - Pour 3 | ✔ |
| Gridline/Plot Sign off | Block D1 - Pour 4 | ✔ |

# GEOSHIELD Verification Report

## 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 ☐

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## Gridline/Plot Sign off

| | | |
|---|---|---|
| Gridline/Plot Sign off | Block D1 - Pour 5 | |
| Gridline/Plot Sign off | Block D1 - Substation wrapped | ✔ |
| Gridline/Plot Sign off | Block D2 - I-L/7-12 | |
| Gridline/Plot Sign off | | |
| Gridline/Plot Sign off | | |
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| Gridline/Plot Sign off | | |

# GEOSHIELD Verification Report

## VERIFICATION SUMMARY

This was the 9th visit to site where verification of the installation of the Pudlo GP Ultra+ Gas Barrier to Block D1 and D2 slab areas as well as the wrapping of D1 substation was required. The installers have welded all laps of the Pudlo GP Ultra+ Gas Barrier using a hot air leister and roller to achieve a consistent 40mm weld. All piles and pipe penetrations that have been sealed, have been sealed correctly and as per the detail. Incomplete works are still outstanding for Block D1 pour 2 and 5 as well as Block D2 I-L/7-12.

Installed in accordance with BS 8485:2019.

Verified in accordance with CIRIA 735.

GEOSHIELD SIGNATURE:

| DATE: | 29/01/2021 |
|---|---|