

2024

Inspection of Automatic Sprinkler System

ASIB



Inspection of Automatic Sprinkler System

(Techniplas) Frotek East London
Industrial Development Zone

Complete

Client/Site Name

(Techniplas) Frotek East London Industrial Development Zone

Billing Address

East London Industrial Development Zone SOC Ltd P O Box 5458
GREENFIELDS
5208

Attention:

Mteteleli Zantsi
Camagwini Ngxokolo-Nomatye

Document No

UNC8483

Prepared by

Keith van Onselen

Conducted on

08.05.2024 15:40 SAST

Site Location

East London Industrial
Development Zone (ELIDZ) East
London

Disclaimer

We have pleasure in attaching our inspector's report.

Whilst every care is taken in the preparation of the report which describes the conditions as found, such report is not a guarantee carrying responsibility for results and neither this Company nor any of its employees or agents shall be liable for any loss or damage of whatsoever nature and howsoever caused, (whether by actual or alleged negligence or otherwise), in any way arising out of the acts or omissions of the Company and/or its employees or agents aforesaid.

The report is based upon the visual inspection of the external condition of the equipment where accessible without having to provide scaffolding, ladders, staging, lighting and not requiring the removal or displacement of any temporary or permanent structure, fitting or fixture.

If there are any points arising on which you require clarification, kindly communicate with the undersigned. Assuring you of our best attention at all times.

Confidentiality

In order to maintain the integrity and credibility of the inspection processes and to protect the parties involved, it is understood that the inspectors will not divulge to unauthorized persons any information obtained during this inspection unless legally obligated to do so.

Yours faithfully,

THE AUTOMATIC SPRINKLER INSPECTION BUREAU (PTY) LIMITED

A handwritten signature in black ink, appearing to read 'Nico van Loggerenberg', written in a cursive style.

Nico van Loggerenberg
Managing Director

1. Report Summary

THE AUTOMATIC SPRINKLER INSPECTION BUREAU (PTY) LIMITED



REGISTRATION NUMBER: 1970/010833/07

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CNR LOUIS BOTHA AND
TUDHOPE AVENUES
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2198

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INDEPENDENT
THIRD PARTY
INSPECTION AND
ADVISORY
SERVICE SINCE
1970

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Code

C - Full Protection, Clearance
Certificate not Issued

Clearance certificate withheld due to the following:

Sprinkler System - Excessive Fault



In relation to the issues with the ESFR installation

Standard

11th Edition

ASIB Contract No

UNC8483

Client Order No

PO-004203

Was the sprinkler system design in order

Yes

Was the water supplies in order

Yes

Refer to report UNC9004 Estate Pump House conducted on 08/05/2024

Was the pump room in order

No

Refer to report UNC9004 Estate Pump House conducted on 08/05/2024

Was the installation control valves in order

No

Refer to Installation Control Valves - Section 7.

Was the storage in order

Yes

2. Hand Fire Appliances

Hose Reels - 30 metres ☒

Number:

8

Hand Fire Appliances - One unit per 100 m² of floor area.

DCP 9 kg ☒

Number:

14

CO² Gas 2 kg ☒

Number:

4

Hand fire appliances date of the last service:

07/2023

Are the hand fire appliances due for their service.

No



Photo 1

Clear access to the hand fire appliances must be maintained at all times.

3. Occupancy & Storage Guidance

Percentage Hazard.

% Ordinary Hazard

10
From 0 to 100

% High Hazard

90
From 0 to 100

Stack height signs not less than 500 mm by 500 mm in size must be prominently displayed at the maximum level of the allowable storage height in all storage and process risk areas.

Occupancy / Process Risk

Occupancy/Risk

Occupancy/Risk 1

► **Ordinary Hazard / High Hazard**

High Hazard

► **Select Occupancy / Process Risk**

Process Risk

Storage Risk

Specify Process

Injection moulding

Category

CAT II

Design Density (mm/min)

ESFR

Where goods of differing categories are stored within the same area, it is the stack height limitations of the goods with the highest category that will apply.

► **Product Stored**

Automotive Parts Plastic

Category

CAT III

Storage

Method

Method 1

Storage Method

Free Standing / Block Storage

Design Density (mm)	ESFR
ESFR K-Factor	
24	
Roof Height (m)	10
Storage Height (m)	
7,6	
Method 2	
Storage Method	Shelving
Design Density (mm)	ESFR
ESFR K-Factor	
24	
Roof Height (m)	10
Storage Height (m)	
7,6	

4. Sprinkler System Design

Building

Building 1

Building Name

Frotek East London Industrial Development Zone

Date of First Inspection

September 2012

Original Installer

Eastcape Fire

Extension By

Fire Sprinkler Installations

Building Area m²

6192

Height of Building in meters

10

Sprinkler Detail

Area

Area 1

► Area & Type of Sprinklers

Roof Sprinklers

Ceiling Sprinklers

Canopy Sprinklers

Number of Sprinklers

906

Calculations

Hydraulic Calculations

Area of Operation

Area of Operation 1

► Area of Operation	Pump Duty
Flows & Pressures 9000 l/min @ 1000 kPa	
Area of Operation 2	
► Area of Operation	Roof Most Remote Area of Operation
Flows & Pressures V1 5605 l/min @ 600 kPa	
Area of Operation 3	
► Area of Operation	Roof Most Favourable Area of Operation
Flows & Pressures V1 5560 l/min @ 555 kPa	
Area of Operation 4	
► Area of Operation	Roof Most Remote Area of Operation
Flows & Pressures V2 5885 l/min @ 565 kPa	
Area of Operation 5	
► Area of Operation	Roof Most Favourable Area of Operation
Flows & Pressures V2 5570 l/min @ 495 kPa	
Area of Operation 6	
► Area of Operation	Roof Most Remote Area of Operation
Flows & Pressures V3 55600 l/min @ 610 kPa	
Area of Operation 7	

► **Area of Operation**

Roof Most Favourable Area of
Operation

Flows & Pressures

V2
5575 l/min @ 555 kPa

Additional Sprinkler System Designs Required

No

5. Water Supplies

► Water Stored on Site.

Yes

Refer to report UNC9004 Estate Pump House conducted on 08/05/2024

Add Water Storage Tanks

6. Pump Room

Pump Installed on Site

Yes

Refer to report UNC9004 Estate Pump House conducted on 08/05/2024

Add Pump House

7. Installation Control Valve(s)

7.1 Sprinkler control valves accessible

Yes

Valve Cabinet

Valve Cabinet 1

Location:

North west corner of building

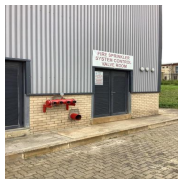


Photo 2

Number of Alarm Valves Installed

3 x 200 mm

7.2 Sprinkler Valve Location Plate Installed

Yes

7.3 Fire Brigade Booster Pressure Limitation Plate

Yes

7.4 Block Plan Installed

Yes

7.4.1 Is the block plan labelled in accordance with the areas fed by the sprinkler control valve assemblies

Yes

7.4.2 Are the correct installation details recorded on the block plan

Yes



Photo 3

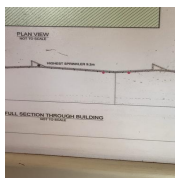


Photo 4



Photo 5

7.5 Sprinkler Valve Instruction Chart

Yes

7.6 Is a sprinkler spares box present

Yes

7.6.1 Was the spares box contents accessible

Yes

7.6.2 Are the spares quantities correct

Yes

7.7 By Pass Arrangement Installed

Yes

7.8 Fire Brigade Booster Connections Installed Correctly and Accessible

No

Installations must be fitted with fire brigade booster connections which will enable the fire brigade to pump water into the installation using their own equipment.

It appears that the booster connection piping to the main distribution riser is too long, which may restrict the opening of the booster plunger into the main distribution riser, this will prevent effective boosting of the sprinkler system and must be revised.



Photo 6

7.9 Are the Installation Control Valves Housed within an Approved Valve Cabinet

Yes

7.10 Flow Switch Installed Correctly

Yes

7.11 Manifold Correctly Supported

No

Not bolted

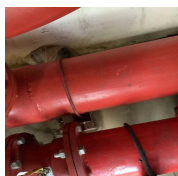


Photo 7

The valve manifold must be adequately supported.

7.12 Riser Mains Correctly Supported

No

The riser main must be properly supported in accordance with the rules.

7.13 Riser Mains Externally Located

No

7.14 Flow Measuring Device Installed.

Yes

Flow Test Results

Pass



Photo 8



Photo 9

Recorded Flow and Pressure

6000 l/min @ 660 kPa

7.15 Correct Pressure Gauges Installed

Yes

7.16 Correct Gauge Cocks Installed

Yes

7.17 Flanges Short Bolted

No

7.18 Loose / Missing Bolts, Nuts & Washers

No

7.19 False Alarm Prevention Pump Installed

N/A

7.20 Drain & Test Pipes Installed Correctly

No

A 15 mm alarm gong test arrangement must be installed.



7.21 Weekly tests of the installation control valves alarm bell must be carried out with the alarms sounding for at least thirty seconds.

All water pressure gauge readings must be checked and recorded.

The testing and records should be carried out by a member of staff delegated to do this.

7.22 Trunk Main Pressure (kPa)

920

7.23 Installation Pressure (kPa)

1020

7.24 ASIB Overhaul Date Tag No

Yes

Last Overhaul Date

2024

Next Overhaul Date

2027

7.25 Alarm Motor & Gong Test

Passed

7.26 Are All Valves in the Correct Positions

Yes

7.27 Are All Valves Secured

Yes

Non Compliance - Items

Recommendation Items

8. Storage

Are the required clearances being maintained.

Yes

Are the storage heights exceeded.

No

At the time of inspection the storage heights were being adhered to and found to be in order.

Shelves exceed 1,0 metre in width.



The shelves must be reduced to a maximum width of 1,0 metre or intermediate sprinkler protection will be mandatory at each shelf tier level.

Location:

Racks

Some ESFR sprinklers are not suited for the protection of shelving solid or slatted and in all cases the manufacturer's literature must be adhered to. As a guide, where ESFR sprinklers are acceptable for the protection of shelving, the open plan area of any shelf may not be less than 50%.

Where acceptable to the manufacturer, single and double-row shelved racks shall comply with one of the following:

Shelves having openings of less than 50% of the plan area shall not exceed 2,0 m² total plan area and shall be bounded on all four edges by flue spaces of not less than 150 mm width.

Slatted shelves shall have shelf-open areas, uniformly interspaced of at least 50% of the shelf plan area. The distance openings shall not exceed 150 mm, or

Grated or mesh-type shelves shall have uniform openings of at least 50% of the shelf plan area. The horizontal distance between openings shall not exceed 150 mm.



Photo 10

9. Sprinkler System

Sprinkler System

Area

Area 1

Specified Area.

External Canopies

System Issue

Issue

Issue 1

Finding

Other

Specify Other.



Corrosion is evident on the sprinkler pipe work and must be addressed by your installer.

Location of Finding.

Canopies

Area 2

Specified Area.

Warehouse

System Issue

Issue

Issue 1

Finding

Other

Specify Other.



Maximum roof angle exceeded.

The maximum roof angle of 9,5 degrees for effective ESFR protection appears to have been exceeded, this must be investigated and addressed by your installer.

Location of Finding.

Roof monitor

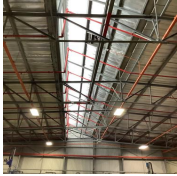


Photo 11

Issue 2

Finding

Roof Insulation

Roof Insulation - Unknown Fire Rating



To be verified for use with ESFR protection

The potential for combustible material existing above the line of sprinklers creates an unacceptable risk with regard to the possibility that a fire can propagate and spread and subsequently overwhelm the sprinkler system below. The insulation material must be investigated and identified in order to ensure the level of sprinkler compliance the occupancy can achieve is not compromised.

Issue 3

Finding

Other

Specify Other.



ESFR Mechanical Ventilation

Mechanical ventilation has been installed in conjunction with ESFR sprinkler protection.

It is important that the mechanical vents be manually operated and that the Fire Chief in charge of operations during a fire be able to make the decision whether it should be opened or remain closed.

The effect of the ventilators installed in the roof may be considered as open ventilation. Their effect on the operation of the installed ESFR installation would be unknown. In order to have the finding satisfied, the OEM would need to be contacted and asked to define the ventilators in respect of ESFR operation and confirm them as an acceptable roof ventilation service. Any Clearance ASIB awards the site would exclude the potential negative impact the ventilators may have on the protection installed.

Location of Finding.

Roof monitors

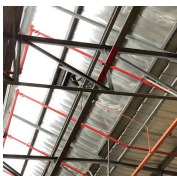


Photo 12

Issue 4

Finding

Pipe Support

Distribution rise/drop pipes shall be secured directly to the building structure or by hangers securing horizontal distribution pipes within 300 mm of the riser. ☒

Location of Finding.

Dropper to prefab ablutions

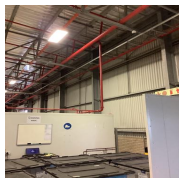


Photo 13

Issue 5

Finding	Pipe Support
----------------	--------------

The sprinkler pipe work must be correctly supported. ☒

Location of Finding.

Composite prefab ablutions. Pipe work must be supported independently from the composite panel, Empty warehouse to be verified



Photo 14

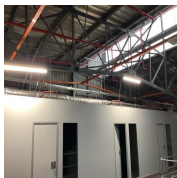


Photo 15

Issue 6

Finding	Pipe Support
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Distribution rise/drop pipes shall be secured directly to the building structure or by hangers securing horizontal distribution pipes within 300 mm of the riser. ☒

Location of Finding.

Dropper to offices



Photo 16

Issue 7

Finding

Partial Protection /
Communicating Areas

Enclosed structures not sprinkler protected.



A fire originating within an unprotected area will burn in an uncontrolled manner without alerting the sprinkler system unit until such time as it breaks out of the structure. The subsequent release of heat will operate multiple sprinklers at roof level above the fire area and remote from it causing massive damage.

Location of Finding.

Storage container

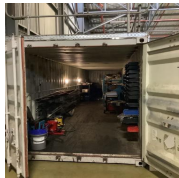


Photo 17

Issue 8

Finding

Pipe Support

Terminal hangers on distribution pipes are exceeding the maximum distance of 450 mm from the end of the distribution pipe.



Location of Finding.

Empty warehouse

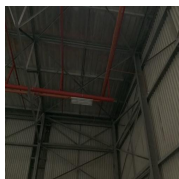


Photo 18

Issue 9

Finding

Pipe Support

The sprinkler pipe work must be correctly supported.



Location of Finding.

Empty warehouse

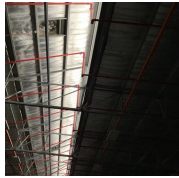


Photo 19

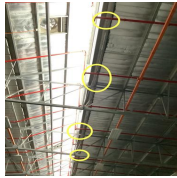


Photo 20

Issue 10

Finding

Partial Protection /
Communicating Areas

Portion of premises sprinkler protected with communicating sections that are not.



Partial protection can lead to a fire originating in the protected area radiating heat into the unprotected portion of the premises and starting secondary fires. The heat from these fires radiates or spreads back into the protected area causing excessive sprinkler operation.

Conversely, a fire originating in the unprotected portion will radiate heat or spread into the protected portion rapidly causing unnecessary sprinkler operation and overwhelming the sprinkler system installed.

Location of Finding.

Cold room in empty warehouse



Photo 21

Area 3

Specified Area.

Offices

System Issue

Issue

Issue 1

Finding

Sprinkler Spacing

Sprinkler protection must be extended in order to provide correct coverage.



Location of Finding.

Entrance to new open office off reception

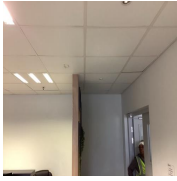


Photo 22

10. Proof of Inspection

Proof of inspection.

For and on behalf of client:



Camagwini Ngxokolo-Nomatye
09.06.2024 22:22 SAST

Proof of inspection.

ASIB Inspector:



Keith van Onselen
10.05.2024 11:58 SAST

WARNING

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The primary function of the ASIB is to protect the interests of the end user and as a result, we constantly update the list of registered suppliers and installing companies.

These companies have proven that they are capable of installing, extending and servicing fire sprinkler systems to the correct standards.

We have had occasion to remove companies for valid reasons which are not confidential and include, but are not limited to, poor workmanship, design, fabrication, incorrect advice, lack of skilled staff, fraudulent quotations and financial instability.

It is important to note that if a company is not listed with the ASIB and carries out work on a sprinkler system we will not be in a position to issue a Clearance Certificate for the premises which, in turn, may place you at risk.

In selecting your service provider, it is important to appreciate that the ASIB is not seeking to infer that a non-listed service provider is necessarily not capable of offering the required service to an appropriate standard. What the ASIB is saying, is that the ASIB is not in a position to give you the assurance that a non-listed provider concerned has demonstrated that it complies with the ASIB standards. In addition, because the ASIB is unable to fully inspect an installation (which by its nature has many inaccessible components), you will appreciate that the ASIB is also unfortunately not in a position to issue a Clearance Certificate in relation to an installation done by a non-listed company.

We advise you to check the listing status of the service provider you choose especially if there is any uncertainty.

You can access our website at <http://www.asib.co.za> which is current or phone our offices at 011 642 1703 for verification.

Email:

Email: 1

Recipient

Mteteleli@elidz.co.za

Email: 2

Recipient

camagwini@elidz.co.za

Media summary



Photo 1



Photo 2

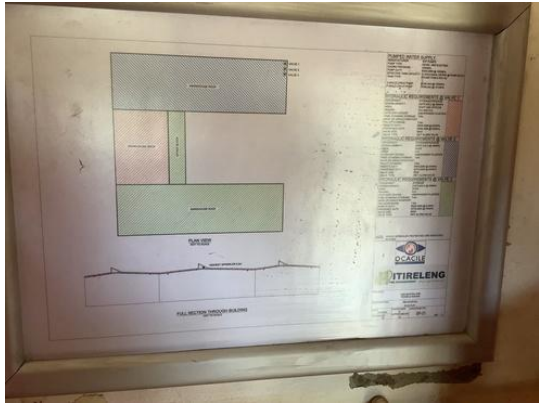


Photo 3

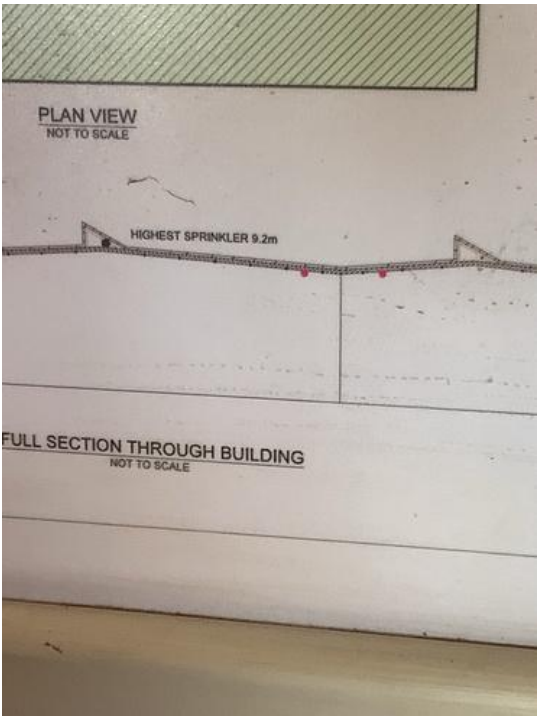


Photo 4

PUMPED WATER SUPPLY:	
MANUFACTURER:	SPV PUMPS
PUMP TYPE:	DIESEL AND ELECTRIC
CHURN PRESSURE:	1500PSI
PUMP DUTY:	500SL/MIN @ 1000PSI
EFFECTIVE TANK CAPACITY:	1116MT/12400L WATER @ PUMP DUTY
TANK TYPE:	ROUND TANKS 50% K2
Q MAX FLOW AT PUMP:	500SL/MIN @ 1000PSI
P MAX FLOW AT PUMP:	500SL/MIN @ 1010PSI
HYDRAULIC REQUIREMENTS @ VALVE 1:	
OCCUPANCY:	STORAGE/PROCESS
DESIGN DENSITY:	ESFR K24.2 @ 380PSI
AREA:	ROOF AND OFFICES
HAZARD:	H/H AND O/H
CATEGORY GOODS:	UNEXPANDED PLASTICS
FREE STANDING STORAGE:	7.6m
RACK OR SINGLE ROW POST:	7.6m
PALLET STORAGE:	500SL/MIN @ 950PSI
REMOTE DUTY:	500SL/MIN @ 950PSI
FAVORABLE DUTY:	500SL/MIN @ 950PSI
VALVE SIZE:	0200
VALVE TYPE:	WET ALARM VALVE
HYDRAULIC REQUIREMENTS @ VALVE 2:	
OCCUPANCY:	STORAGE/PROCESS
DESIGN DENSITY:	ESFR K24.2 @ 380PSI
AREA:	ROOF
HAZARD:	H/H
CATEGORY GOODS:	UNEXPANDED PLASTICS
FREE STANDING STORAGE:	7.6m
RACK OR SINGLE ROW POST:	7.6m
PALLET STORAGE:	500SL/MIN @ 950PSI
REMOTE DUTY:	500SL/MIN @ 950PSI
FAVORABLE DUTY:	500SL/MIN @ 950PSI
VALVE SIZE:	0200
VALVE TYPE:	WET ALARM VALVE
HYDRAULIC REQUIREMENTS @ VALVE 3:	
OCCUPANCY:	STORAGE
DESIGN DENSITY:	ESFR K24.2 @ 380PSI
AREA:	ROOF
HAZARD:	H/H
CATEGORY GOODS:	UNEXPANDED PLASTICS
FREE STANDING STORAGE:	7.6m
RACK OR SINGLE ROW POST:	7.6m
PALLET STORAGE:	500SL/MIN @ 1100PSI
REMOTE DUTY:	500SL/MIN @ 1100PSI
FAVORABLE DUTY:	500SL/MIN @ 1100PSI
VALVE SIZE:	0200
VALVE TYPE:	WET ALARM VALVE

Photo 5



Photo 6



Photo 7



Photo 8



Photo 9



Photo 10



Photo 11



Photo 12



Photo 13



Photo 14



Photo 15



Photo 16



Photo 17



Photo 18



Photo 19



Photo 20



Photo 21



Photo 22