

2024

# Inspection of Automatic Sprinkler System

**ASIB**



## Inspection of Automatic Sprinkler System

BW3 Linde & Wiemann East London  
Industrial Development Zone

Complete

### Client/Site Name

BW3 Linde & Wiemann 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

UNC8477

### Prepared by

Keith van Onselen

### Conducted on

09.05.2024 08:00 SAST

### Site Location

Ikhala Road  
East London Industrial  
Development Zone  
East London  
EC  
5201  
South Africa

## 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



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  
BEREA  
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INDEPENDENT  
THIRD PARTY  
INSPECTION AND  
ADVISORY  
SERVICE SINCE  
1970

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#### Code

PC - Partial Protection, Clearance  
Certificate not Issued

Partial clearance certificate withheld due to the following:

#### Sprinkler System - Excessive Fault



In relation to the issues with the ESFR installation

#### Standard

10th Edition

#### ASIB Contract No

UNC8477

#### Client Order No

PO-004203

#### Was the sprinkler system design in order

Yes

#### Was the water supplies in order

No

Refer to report UNC.9478 conducted on 08/05/2024

#### Was the pump room in order

No

Refer to report UNC.9478 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:

6

Hand Fire Appliances - One unit per 100 m<sup>2</sup> of floor area.

DCP 9 kg ☒

Number:

22

Other ☒

Specify

Hydrant

Number:

4

Hand fire appliances date of the last service:

06/2023

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.

<b>% Ordinary Hazard</b>	10 From 0 to 100
--------------------------	---------------------

<b>% High Hazard</b>	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**

Storage Risk

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 Components Steel

**Category**

CAT I

Storage

Method

Method 1

**Storage Method**

Free Standing / Block Storage

**Design Density (mm)**

ESFR

**ESFR K-Factor**

36

**Roof Height (m)**

11

**Storage Height (m)**

10,6

Occupancy/Risk 2

► **Ordinary Hazard / High Hazard**

High Hazard

► **Select Occupancy / Process Risk**

Storage Risk

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 Components in Plastic Crates

**Category**

CAT III

Storage

Method

Method 1

**Storage Method**

Free Standing / Block Storage

**Design Density (mm)**

ESFR

**ESFR K-Factor**

36

**Roof Height (m)**

11

**Storage Height (m)**

10,6

4. Sprinkler System Design

Building

Building 1

Building Name

BW3 Linde & Wiemann East London Industrial Development Zone

Date of First Inspection

Unknown

Original Installer

Unknown

Extension By

NA

Building Area m<sup>2</sup>

5313

Height of Building in meters

11

Sprinkler Detail

Area

Area 1

► Area & Type of Sprinklers

Roof Sprinklers

Ceiling Sprinklers

Canopy Sprinklers

Number of Sprinklers

Approximately 800

Calculations

Hydraulic Calculations

Area of Operation

Area of Operation 1



► Area of Operation	Pump Duty
<b>Flows &amp; Pressures</b> 7500 l/min @ 960 kPa	
Area of Operation 2	
► Area of Operation	Roof Most Remote Area of Operation
<b>Flows &amp; Pressures</b> V1 7380 l/min @ 610 kPa	
Area of Operation 3	
► Area of Operation	Roof Most Favourable Area of Operation
<b>Flows &amp; Pressures</b> V1 7400 l/min @ 455 kPa	
Area of Operation 4	
► Area of Operation	Roof Most Remote Area of Operation
<b>Flows &amp; Pressures</b> V2 7500 l/min @ 550 kPa	
Area of Operation 5	
► Area of Operation	Roof Most Favourable Area of Operation
<b>Flows &amp; Pressures</b> V2 7400 l/min @ 495 kPa	
Additional Sprinkler System Designs Required	No

5. Water Supplies

► Water Stored on Site.

Yes

Refer to report UNC.9478 conducted on 08/05/2024

Add Water Storage Tanks

6. Pump Room

Pump Installed on Site

Yes

Refer to report UNC.9478 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 east corner of building



Photo 2



Photo 3



Photo 4

### Number of Alarm Valves Installed

2 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 5

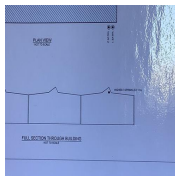


Photo 6

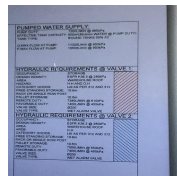


Photo 7

### 7.5 Sprinkler Valve Instruction Chart

No

A weatherproof valve instruction chart that relates specifically to the control valve assembly installed, (not a generic instruction chart) shall be mounted on a wall within the control valve cabinet or if the valves are internally located, as close to these as possible.

### 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 8

7.9 Are the Installation Control Valves Housed within an Approved Valve Cabinet	Yes
Sprinkler protection is required within the valve cabinet	<input checked="" type="checkbox"/>
7.10 Flow Switch Installed Correctly	Yes
7.11 Manifold Correctly Supported	No

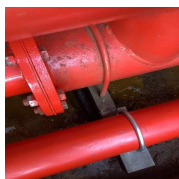


Photo 9

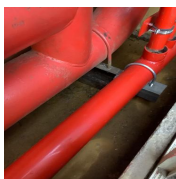


Photo 10

The valve manifold must be adequately supported.

7.12 Riser Mains Correctly Supported	Yes
7.13 Riser Mains Externally Located	No
7.14 Flow Measuring Device Installed.	Yes
Flow Test Results	Pass



Photo 11



Photo 12

## Recorded Flow and Pressure

7500 l/min @ 940 kPa

### 7.15 Correct Pressure Gauges Installed

Yes

### 7.16 Correct Gauge Cocks Installed

Yes

### 7.17 Flanges Short Bolted

Yes

The bolts for these flanges must be removed and replaced with the correctly sized bolts so as to ensure that at least two full thread pitches past the chamfer protrude beyond the nut.

### 7.18 Loose / Missing Bolts, Nuts & Washers

No

### 7.19 False Alarm Prevention Pump Installed

N/A

### 7.20 Drain & Test Pipes Installed Correctly

Yes

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)

940

### 7.23 Installation Pressure (kPa)

1200

### 7.24 ASIB Overhaul Date Tag No

Yes

### Last Overhaul Date

2021

### Next Overhaul Date

2024

### 7.25 Alarm Motor & Gong Test

Failed

### 7.26 Are All Valves in the Correct Positions

No

This must be investigated

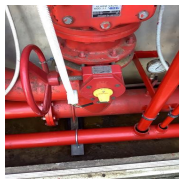


Photo 13



Photo 14

**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.



## 9. Sprinkler System

Sprinkler System

Area

Area 1

**Specified Area.**

Warehouse

System Issue

Issue

Issue 1

**Finding**

Exposure Hazards

**Adjacent building within 10,0 metres / 15,0 of the sprinkler protected building.**



Any detached building in the Ordinary Hazard or Extra Light Hazard class, any part of which is within 10,0 m of a protected building, must itself be sprinkler protected.

Any detached building in the Extra High Hazard class, any part of which is within 15,0 m of a protected building, must itself be sprinkler protected.

Where there are practical difficulties in providing such protection as, for example, when the detached building is in separate ownership or where the detached building is lofty and open-sided, (e.g. timber storage sheds), and the value of standard sprinkler protection is doubtful, it will be required that the sprinkler protection in the protected building be extended to provide external sprinkler protection over window and door openings and over any combustible sections of the wall opposing the exposure hazard.

It should be noted that it is the hazard classification of the UNPROTECTED building which determines the required separation and NOT the hazard classification of the protected building.

### Location of Finding.

Welding container



Photo 15

Issue 2

## 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.

GOM room  
Receiving store



Photo 16



Photo 17

## Issue 3

### Finding

Sprinkler Heads

**Sprinkler heads must be correctly aligned.**



### Location of Finding.

Low bay roof above workshop

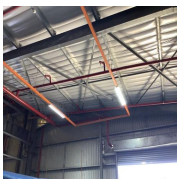


Photo 18

## Issue 4

### Finding

Other

**Specify Other.**



ESFR protection has been installed. Combustible materials at roof above ESFR protection is not acceptable  
ESFR sprinklers can only be located beneath non-combustible surfaces. Combustible translucent sheeting,

may in the event of a fire negatively impact the operation of the ESFR installation. Heads or sheets would require to be relocated appropriately in order to satisfy this item.

### Location of Finding.

Roof

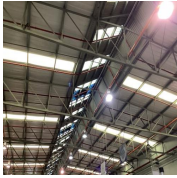


Photo 19

### Issue 5

#### Finding

Other

#### Specify Other.



ESFR protection has been installed. The angle of the roof monitor sprinklers must be corrected

### Location of Finding.

Roof monitors

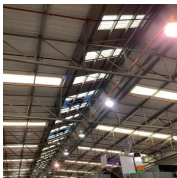


Photo 20

### Issue 6

#### 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

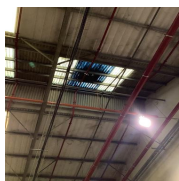


Photo 21

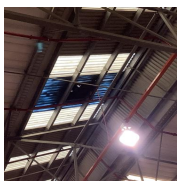


Photo 22

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.

Room PMS 316



Photo 23



Photo 24



Photo 25

## 10. Proof of Inspection

Proof of inspection.

For and on behalf of client:

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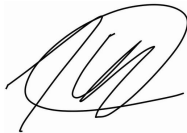
Camagwini Ngxokolo-Nomatye  
10.05.2024 15:19 SAST

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Proof of inspection.

ASIB Inspector:

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Keith van Onselen  
10.05.2024 15:19 SAST

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### 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



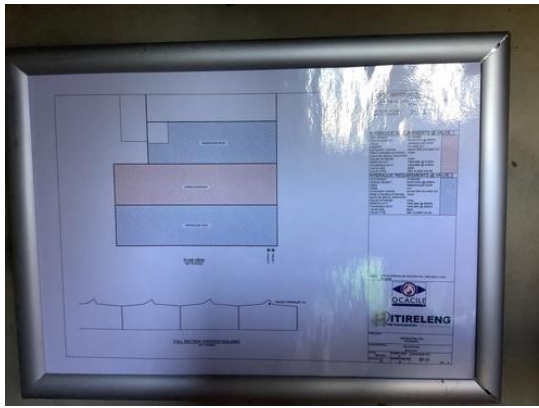


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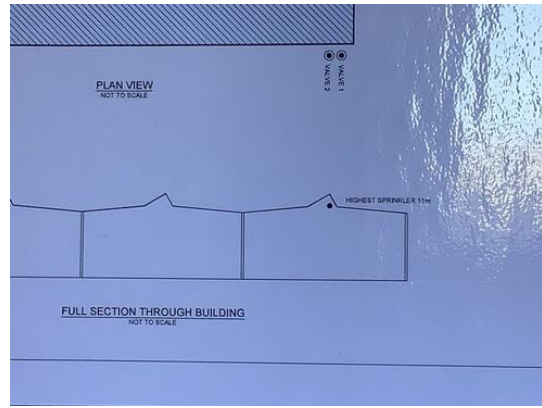


Photo 6

PUMPED WATER SUPPLY:		
PUMP DUTY	7500L/MIN @ 550kPa	
EFFECTIVE TANK CAPACITY	650m <sup>3</sup> (86.6min WATER @ PUMP DUTY)	
TANK TYPE	ROUND TANKS 50% X2	
Q MAX FLOW AT PUMP	11325L/min @ 903kPa	
P MAX FLOW AT PUMP	10500L/min @ 903kPa	
HYDRAULIC REQUIREMENTS @ VALVE 1:		
OCCUPANCY	STORAGE	
DESIGN DENSITY	ESFR K36.3 @ 280kPa	
AREA	WAREHOUSE ROOF	
HAZARD	H.H AND O.H	
CATEGORY GOODS	III AS PER 312 AND 313	
FREE STANDING STORAGE	10.6m	
RACK OR SINGLE ROW POST		
PALLET STORAGE	10.6m	
REMOTE DUTY	7380L/MIN @ 510kPa	
FAVORABLE DUTY	7400L/MIN @ 455kPa	
VALVE SIZE	Ø200	
VALVE TYPE	WET ALARM VALVE	
HYDRAULIC REQUIREMENTS @ VALVE 2:		
OCCUPANCY	STORAGE	
DESIGN DENSITY	ESFR K36.3 @ 280kPa	
AREA	WAREHOUSE ROOF	
HAZARD	H.H	
CATEGORY GOODS	III AS PER 312 AND 313	
FREE STANDING STORAGE	10.6m	
RACK OR SINGLE ROW POST		
PALLET STORAGE	10.6m	
REMOTE DUTY	7500L/MIN @ 550kPa	
FAVORABLE DUTY	7400L/MIN @ 495kPa	
VALVE SIZE	Ø200	
VALVE TYPE	WET ALARM VALVE	

Photo 7



Photo 8





Photo 9

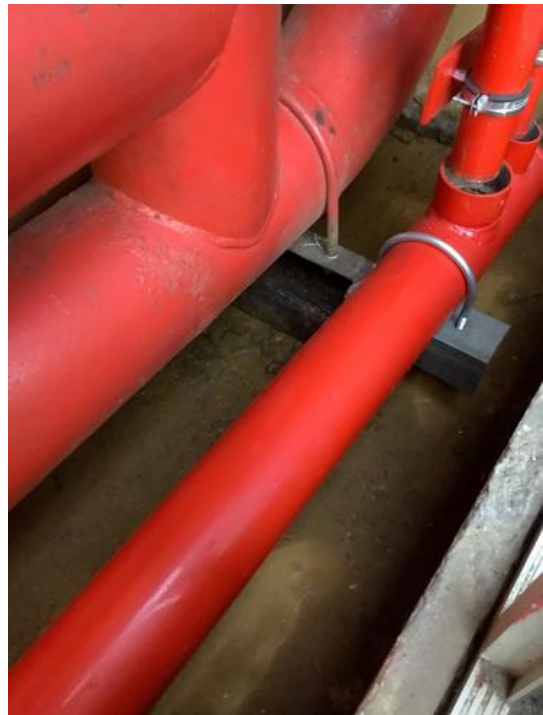


Photo 10



Photo 11



Photo 12



Photo 13



Photo 14



Photo 15



Photo 16





Photo 17



Photo 18

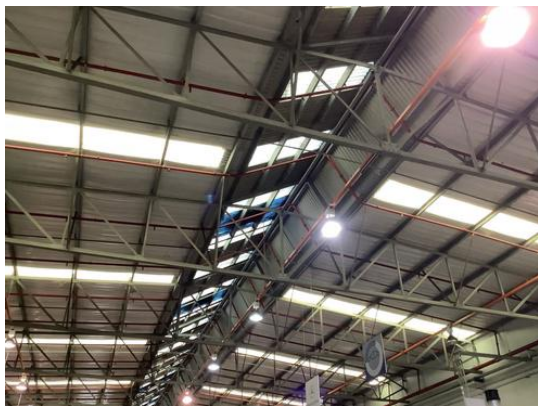


Photo 19



Photo 20



Photo 21



Photo 22



Photo 23



Photo 24



Photo 25