YOUR LOGO.

Method Statement

Pneumatic + Hydraulic Pressure Testing

[Project Name]

Author

[Document Number]

[revision]

Contents

1 Document Issue Log/Register

The following table will be updated upon issue of the document and subsequent revisions, to monitor any revisions and changes made prior to approval.

Revision	Date	Notes on changes
0	Click or tap to enter a date.	
1	Click or tap to enter a date.	
2	Click or tap to enter a date.	
3	Click or tap to enter a date.	
4	Click or tap to enter a date.	

2 Introduction

This project requires that all testing procedures are submitted to the client's representatives for review and approval, prior to the works being allowed to take place on-site.

To ensure that the pipework system integrity is maintained in line with the buildings and designers' requirements, once the system has been installed, there will be a need to pressure test it.

The testing, described below in this document, will check, and validate the following:

- That there are no open ends on the system, pneumatic test.
- That the systems integrity is adequate for its operation, hydraulic test

3 Engineers Qualifications and Experience

All testing works will be undertaken by suitably trained personnel, including safety training, manufacturer training and any local governmental requirements to comply with all laws and codes/regulations.

4 Programme of Works

The works relating to this procedure will be conducted in line with the commissioning programme / 2 week look ahead that will be provided, separately to this document, as noted in Section 5.

5 Documentation & Reference

To allow the testing to be conducted and meet the project requirements the following documentation has been referred to:

Ref	Document	Project Document Number & Revision
1	Commissioning Plan/Specification	*[Add]*
2	General Project MEP Specification	*[Add]*

Ref	Document	Project Document Number & Revision
3	Particular Project MEP Specification	*[Add]*
4	Commissioning Programme	*[Add]*
5	Material Submission of pipework [to be marked up and attached in the appendix]	*[Add]*
6	Water Side Mechanical Schematic Drawings [to be marked up and attached in the appendix]	*[Add]*
7	Water Side Mechanical Layout Drawings [to be marked up and attached in the appendix]	*[Add]*
8	BESA TR6 – Guide to Good Practice – Site Pressure Testing of Pipework	*[Add or change to relevant standard used]*

6 Permit to Work

The following permit to work systems will need to be in place to allow the testing to be conducted. The permit reference will be completed at the testing once they have been obtained.

Ref	Detail of permit required	Responsibility [company]	Permit Reference
1	Access to general site	*[Add]*	*[Add]*
2	Access to location of equipment	*[Add]*	*[Add]*
3	Access to the equipment	*[Add]*	*[Add]*

Ref	Detail of permit required	Responsibility [company]	Permit Reference
4	System Isolation Permit	*[Add]*	*[Add]*
5	Hot Work Permit	*[Add]*	*[Add]*
6	Electrical Switching Permit	*[Add]*	*[Add]*

7 Inspection, Sign Off and Defect Management

Prior to any testing and commissioning taking place on the systems, the installation will be fully inspected and signed off, in line with the project process and requirements.

The below details the steps that will be taken within this project, with responsibilities, to ensure the systems are ready for testing. Any step that is not required under this work, we will move to the next step.

All documents will be provided for inspection at time of testing and a copy provided that will be included in the final documentation.

Step	Document/Reference	Responsibility
Step 1	**Material Submission** to be approved and comments addressed. [Minimum Status B] ***[Add reference/Status]***	Main/General Contractor Designer Commissioning Consultant
Step 2	**Drawings** to be approved and comments addressed. [Minimum Status B] ***[Add reference/Status]***	Main/General Contractor Designer Commissioning Consultant
Step 3	**Factory Testing Functional Testing Method Statement** to be approved and comments addressed. [Minimum Status B] ***[Add reference/Status]***	Main/General Contractor Commissioning Consultant Designer

Step	Document/Reference	Responsibility
Step 4	**Factory Testing** to be completed and comments addressed. ***[Add reference/Status]***	Main/General Contractor Commissioning Consultant Designer
Step 5	**Factory Testing Functional Testing Report** to be approved and comments addressed. [Minimum Status B] ***[Add reference/Status]***	Main/General Contractor Commissioning Consultant Designer
Step 6	**Proceed To Deliver Certificate** provided approved by Commissioning Consultant and Designer ***[Add reference/Status]***	Main/General Contractor
Step 7	**Delivery / Storage Inspection Check List** provided, and all comments addressed that are critical to the testing activities As per Delivery Storage Section Checklist	Main/General Contractor Resident Engineer
Step 8	**Installation Inspection Check List** provided, and all comments addressed that are critical to the testing activities As per Installation Section Checklist	Main/General Contractor Resident Engineer
Step 9	**Future Maintenance Inspection Check List** provided, and all comments addressed that are critical to the testing activities As per Installation Section Checklist	Main/General Contractor Resident Engineer
Step 10	**Pre-Functional Check List** provided, and all comments addressed that are critical to the testing activities	Main/General Contractor Commissioning Consultant

Step	Document/Reference	Responsibility
	As per Pre-Functional Section Checklist	
Step 11	**Testing Method Statement** to be approved and comments addressed. [Minimum Status B] ***[Add reference/Status]***	Main/General Contractor Commissioning Consultant Designer
Step 12	**Self-Testing Records** provided, and all comments addressed that are critical to the testing activities, where client witnessing is expected. ***[Add reference/Status]***	Main/General Contractor

8 PNEUMATIC Pressure Testing Method

The below information will be added at the test.

Project Name	*[Add Name]*
Testing Number:	*[Add Test Number]*
System Type:	*[Add System Type]*
System Design Working Pressure:	*[Add]*
Testing Pressure:	*[Add]*
Full System / Valve to Valve / Flange to Flange Test:	*[Confirm]*

Floor	*[Add Floor]*	**Area / Zone**	*[Add Room]*
Start Date:	*[Add]*	**Finish Date:**	*[Add]*
Start Time:	*[Add]*	**Finish Time:**	*[Add]*

Pneumatic testing shall be conducted prior to filling any system with water, where any leakage of water could impact existing installations and operations – a review should be completed prior to hydrostatic testing.

8.1 Testing Pressure & Tolerances

The below information is taken from the project design information / schematics and guidelines.

System	Design Working Pressure	Testing Pressure [Air]	Testing Time [Air]	Tolerance [Air]
[add]	*[add]*	*[add]*	*[add]*	*[add]*
[add]	*[add]*	*[add]*	*[add]*	*[add]*
[add]	*[add]*	*[add]*	*[add]*	*[add]*
[add]	*[add]*	*[add]*	*[add]*	*[add]*

8.2 Equipment & Tools

The below equipment and tools will be used during the testing, with all applicable calibration certificates to be provided for visual inspection at the beginning of each test.

Type	Model	Serial Number	Expiry date of Certificate
Air Compressor			
Hoses [rated correctly]			
Pressure Gauge [rated correctly]			
Padlocks and Chains			
Temperature & Humidity Sensor			
Barriers & Signage			

8.3 General Pre-Requisites

The following details the general pre-requisites that will need to be completed and verified as complete prior to testing taking place.

All sign off procedures, where required, will be managed outside of this document.

8.3.1 Documentation Checks:

Ref	Inspection/Task	Yes/No /[n/a]	Notes
1	Delivery Inspection Records available and signed off, with no observations or defects outstanding.		
2	Pipework is installed in line with the project drawings [size, location].		

8.3.2 Onsite System Checks:

Ref	Inspection/Task	Yes/No /[n/a]	Notes
1	Piping is free to expand and contract without noise or damage to hangers, joints, or the building.		
2	Seismic restraints, where required, installed.		
3	Pipework does not put undue stress on equipment, where connected and is bracketed to support itself.		
4	All piping supports and hangers meet criteria set out in the specifications.		
5	Piping is installed with sufficient pitch and arranged in a manner to ensure drainage and venting of the entire system.		
6	Manual air vents are provided at high points in closed water systems.		

Ref	Inspection/Task	Yes/No /[n/a]	Notes
7	Ensure all gaskets are installed and sealed.		
8	Ensure that all bolts are installed as per manufacturer's instructions.		
9	Any nipples installed are made of the same material as the pipe.		
10	Any connections between copper and steel pipes are made with dielectric fittings.		
11	A union is provided ahead of each screwed valve, trap, or strainer, and on each side of each piece of equipment and whatever needed to dismantle piping.		
12	Any changes in pipe sizes are made with the proper size reducing fittings, reducing fittings, reducing elbow, or reducing tees. Bushings are not allowed.		
13	All fittings meet specification requirements.		
14	All fittings and ancillaries are rated correctly and in line with the pressure of the system.		
15	All equipment requiring maintenance is accessible (valves, junction boxes, etc.).		
16	Piping does not block access to equipment that is part of this system or another system (e.g., air terminal units).		
17	Drain valves are provided at all low points in hose bib piping to facilitate seasonal draining.		

Ref	Inspection/Task	Yes/No /[n/a]	Notes
18	All valves [isolation, commissioning, non-return etc] are installed as per the drawings		
19	All strainers are installed as per the drawings and baskets are clean.		
20	Pipework is insulated as per the specification and vapor sealed where required.		
21	Piping is installed in a manner to ensure that insulation will not contact adjacent surfaces.		
22	Any pipe openings are temporarily sealed to maintain piping system cleanliness and integrity.		
23	All components including valves and controls are labeled in line with the project naming convention.		
24	Instruments, flow meters, energy meters and commissioning stations have been installed in line with the manufacturer's requirements and correct direction. This includes distances from turbulent flows etc.		
25	Evaluation conducted to understand what instruments and equipment should be removed to allow this test, protecting them from damage.		
26	Equipment and Instruments have been removed from the system as noted in evaluation above.		

Ref	Inspection/Task	Yes/No /[n/a]	Notes
	Spool pieces or blanking plates installed.		
27	All pressure gauges installed, and display scale as per design requirements.		
28	Pipework has been magnetic weld tested, where specified.		
29	Pipework has been ultrasonic weld tested, where specified.		

8.3.3 System Setup

Ref	Inspection/Task	Yes/No /[n/a]	Notes
1	System set up checked to ensure it is in line with any strategies that have been developed.		
2	Pipework is installed in line with the project drawings [size, location].		
3	Review and inspect that all equipment and instruments, that are used during the testing are installed / included in their correct locations.		
4	Ensure all safety precautions are taken and barriers/signage set up.		

8.4 Pneumatic Testing Method

Once all the pre-requisites have been completed, the below steps will be conducted to carryout and complete the testing:

Step	Description
1	Connect the compressor, hose, valves, and pressure gauges, at the system lowest point, to the drain cock valve / assembly / connection point.
2	With the compressor, increase the pressure slowly in 0.1 bar increments until the pressure gauge reaches the required testing pressure, as per Section 6.1.
3	Once at required pressure, with the compressor still attached close the isolating valve, await 10 minutes for the system to settle.
4	If there is a drop-in pressure and no obvious leaks increase pressure via the compressor until test pressure is reached again.
5	Disconnect the compressor only, leaving the valves, pressure gauge and plug / blank valve, at this point the time should be noted on the pressure test certificate. Photograph the test showing date / time and test pressure gauge for records.
6	Continually walk the system checking for any leaks for the period of the test and checking the pressure gauge(s) for signs of any movement. The pass-fail criteria are as per the tolerance as per Section 6.1.
7	The test should be aborted, and investigations made, and remedial action taken, if the test pressure moves outside of the required tolerance.
8	Once the time has elapsed for the required test and it is deemed to be accepted by the relevant parties in attendance, the testing will be complete. Photographic evidence should be taken with all information entered the pressure test certificate. Release the pressure from the system carefully, and disconnect the pressure gauge/equipment etc.
9	Once the testing has been completed the system should be filled and vented, for the hydraulic pressure testing to be conducted.

Pressure Testing Certificate

Test Number		
Project Name/Number		
System Type	**Pneumatic ☐**	**Hydraulic ☐**
System/Test Pressure	[System]	[Test]

Date Start		**Date Finish**	

Other Information	**Tools and Equipment**
Method Statement available ☐ Risk Assessment available ☐ Calibration Certificates available ☐	Pressure Gauge ☐ Handpump & Hoses ☐ Blanks and bungs ☐

Start Time		**Finish Time**	
Test Pressure Start [bar/psi]		**Test Pressure Finish** [bar/psi]	

PASS	**FAIL**

Comments

Signature	Date
Signature	Date

9 HYDRAULIC Pressure Testing Method

The below information will be added at the test.

Project Name	*[Add Name]*
Testing Number:	*[Add Test Number]*
System Type:	*[Add System Type]*
System Design Working Pressure:	*[Add]*
Testing Pressure:	*[Add]*
Full System / Valve to Valve / Flange to Flange Test:	*[Confirm]*

Floor	*[Add Floor]*	**Area / Zone**	*[Add Room]*
Start Date:	*[Add]*	**Finish Date:**	*[Add]*
Start Time:	*[Add]*	**Finish Time:**	*[Add]*

Hydraulic testing shall be conducted after the pneumatic pressure testing, if required.

Where pneumatic pressure testing is not required, the hydraulic testing will be conducted once the system is ready and pre-requisites completed.

9.1 Testing Pressure & Tolerances

The below information is taken from the project design information / schematics and guidelines.

System	Design Working Pressure	Testing Pressure [Water]	Testing Time [Water]	Tolerance [Water]
[add]	*[add]*	*[add]*	*[add]*	*[add]*
[add]	*[add]*	*[add]*	*[add]*	*[add]*
[add]	*[add]*	*[add]*	*[add]*	*[add]*
[add]	*[add]*	*[add]*	*[add]*	*[add]*

9.2 Equipment & Tools

The below equipment and tools will be used during the testing, with all applicable calibration certificates to be provided for visual inspection at the beginning of each test.

Type	Model	Serial Number	Expiry date of Certificate
Hand Pump			
Hoses [rated correctly]			
Pressure Gauge [rated correctly]			
Padlocks and Chains			
Temperature & Humidity Sensor			
Barriers & Signage			
Tarpaulins [for protection]			

Type	Model	Serial Number	Expiry date of Certificate
Mops / Buckets			

9.3 General Pre-Requisites

The following details the general pre-requisites that will need to be completed and verified as complete prior to testing taking place.

All sign off procedures, where required, will be managed outside of this document.

9.3.1 Documentation Checks:

Ref	Inspection/Task	Yes/No /[n/a]	Notes
1	Delivery Inspection Records available and signed off, with no observations or defects outstanding.		
2	Pipework is installed in line with the project drawings [size, location].		

9.3.2 Onsite System Checks:

Ref	Inspection/Task	Yes/No /[n/a]	Notes
1	Piping is free to expand and contract without noise or damage to hangers, joints, or the building.		
2	Seismic restraints, where required, installed.		
3	Pipework does not put undue stress on equipment, where connected and is bracketed to support itself.		

Ref	Inspection/Task	Yes/No /[n/a]	Notes
4	All piping supports and hangers meet criteria set out in the specifications.		
5	Piping is installed with sufficient pitch and arranged in a manner to ensure drainage and venting of the entire system.		
6	Manual air vents are provided at high points in closed water systems.		
7	Ensure all gaskets are installed and sealed.		
8	Ensure that all bolts are installed as per manufacturer's instructions.		
9	Any nipples installed are made of the same material as the pipe.		
10	Any connections between copper and steel pipes are made with dielectric fittings.		
11	A union is provided ahead of each screwed valve, trap, or strainer, and on each side of each piece of equipment and whatever needed to dismantle piping.		
12	Any changes in pipe sizes are made with the proper size reducing fittings, reducing fittings, reducing elbow, or reducing tees. Bushings are not allowed.		
13	All fittings meet specification requirements.		
14	All fittings and ancillaries are rated correctly and in line with the pressure of the system.		

Ref	Inspection/Task	Yes/No /[n/a]	Notes
15	All equipment requiring maintenance is accessible (valves, junction boxes, etc.).		
16	Piping does not block access to equipment that is part of this system or another system (e.g., air terminal units).		
17	Drain valves are provided at all low points in hose bib piping to facilitate seasonal draining.		
18	All valves [isolation, commissioning, non-return etc] are installed as per the drawings		
19	All strainers are installed as per the drawings and baskets are clean.		
20	Pipework is insulated as per the specification and vapor sealed where required.		
21	Piping is installed in a manner to ensure that insulation will not contact adjacent surfaces.		
22	Any pipe openings are temporarily sealed to maintain piping system cleanliness and integrity.		
23	All components including valves and controls are labeled in line with the project naming convention.		
24	Instruments, flow meters, energy meters and commissioning stations have been installed in line with the manufacturer's requirements and correct direction.		

Ref	Inspection/Task	Yes/No /[n/a]	Notes
	This includes distances from turbulent flows etc.		
25	Evaluation conducted to understand what instruments and equipment should be removed to allow this test, protecting them from damage.		
26	Equipment and Instruments have been removed from the system as noted in evaluation above. Spool pieces or blanking plates installed.		
27	All pressure gauges installed, and display scale as per design requirements.		
28	Pipework has been magnetic weld tested, where specified.		
29	Pipework has been ultrasonic weld tested, where specified.		
30	System has been filled and bled with air removed.		

9.3.3 System Setup

Ref	Inspection/Task	Yes/No /[n/a]	Notes
1	System set up checked to ensure it is in line with any strategies that have been developed.		
2	Pipework is installed in line with the project drawings [size, location].		
3	Review and inspect that all equipment and instruments, that		

Ref	Inspection/Task	Yes/No /[n/a]	Notes
	are used during the testing are installed / included in their correct locations.		
4	Ensure all safety precautions are taken and barriers/signage set up.		
5	Ensure that any areas/equipment are protected that would be affected if there was a water leak.		

9.4 Hydraulic Testing Method

Once all the pre-requisites have been completed, the below steps will be conducted to carry out and complete the testing:

Step	Description
1	Connect the hand pump, valves, and pressure gauge, at the system lowest point, to the drain cock valve / assembly / connection point.
2	Using the hand pump slowly increase the pressure in the system, in 0.5 bar increments until the pressure gauge reaches the required pressure, as noted in Section 7.1.
3	Once at required pressure, with the hand pump still attached and isolating valve closed, await 10 minutes for the system to settle.
4	If there is a drop-in pressure and no obvious leaks increase pressure via the hand pump until test pressure is reached.
5	Disconnect the hand pump only, leaving the pressure gauge and plug / blank valve, at this point the time should be noted on the pressure test certificate. Photograph the test showing date / time and test pressure gauge for records. The testing time should be as noted in Section 7.1.
6	Continually walk the system checking for any leaks for the period of the test and checking the pressure gauge(s) for sign of any movement. The pass-fail criteria are as per the tolerance as per Section 7.1.

Step	Description
7	The test should be aborted, and investigations made, and remedial action taken, if the test pressure moves outside of the required tolerance.
8	Once the time has elapsed for the required test and it is deemed to be accepted by the relevant parties in attendance, the testing will be complete. Photographic evidence should be taken with all information entered the pressure test certificate. Release the pressure from the system carefully, and disconnect the pressure gauge/equipment etc.
9	Once the testing has been completed the system the advice of a Chemical Engineer will be obtained, if being left for a period prior to the next stages of testing taking place

Pressure Testing Certificate

Test Number		
Project Name/Number		
System Type	**Pneumatic ☐**	**Hydraulic ☐**
System/Test Pressure	[System]	[Test]

Date Start		**Date Finish**	

Other Information	**Tools and Equipment**
Method Statement available ☐ Risk Assessment available ☐ Calibration Certificates available ☐	Pressure Gauge ☐ Handpump & Hoses ☐ Blanks and bungs ☐

Start Time		**Finish Time**	
Test Pressure Start [bar/psi]		**Test Pressure Finish** [bar/psi]	

PASS	**FAIL**

Comments

Signature	Date
Signature	Date

10 Comments/Observations

Use the following space below for any issues and observations

Ref	Comment/ Observation	Date	Status [open/closed]	Notes
1		01 March 2023		
2		01 March 2023		
3		01 March 2023		
4		01 March 2023		
5		01 March 2023		
6		01 March 2023		

11 Signatures and Witnessing

The following table will be completed to close out this document, once all testing has been witnessed/verified, documents attached as per the appendices, and all observations closed out.

Name:	Date	Company	Signature [electronic is acceptable]
	01 March 2023	[add]	
	01 March 2023	[add]	
	01 March 2023	[add]	
	01 March 2023	[add]	
	01 March 2023	[add]	
	01 March 2023	[add]	

Appendix A – Material Submission

Add a copy of the document.

Appendix B – Water Side Mechanical Schematic

Add a copy of the document marked up with testing areas

Appendix C – Water Side Mechanical Layout

Add a copy of the document marked up with testing areas

Appendix D – Calibration Certificates

Add a copy of the document covering each piece / type of equipment used.

Appendix E - Photographic Evidence

Add a copy of any photographs to prove the testing.

-END-