

## DETAILED PIPING SPECIFICATION

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### 1. GENERAL

#### 1.1 Work Included

- .1 The piping specification sheets on the following pages detail the requirements for each type of process pipe included in the Work.
- .2 The piping materials are listed on the specification sheets.

#### 1.2 Process Piping Commodity Summary

DA	Dry Air	PVC Sch80
HA	Humid Air	PVC Sch80
OA	Outside Air	PVC Sch80
SA	Soda Ash	PVC Sch80
SEA	Service Air	Aquatherm Greenpipe SDR 7.4, working pressure 200 psi (1400 kPa)

### 2. PRODUCTS

#### 2.1 Schedule

- .1 Pages 2 to 4 following.
- .2 Piping located in the Sequencing Batch Reactor headspace is defined as "submerged".

**DETAILED PIPING SPECIFICATION**

**DA / HA / OA**

<b>GENERAL</b>					
PROCESS FLUID	SYMBOL	MAXIMUM CONDITIONS		TEST CONDITIONS	
		PRESSURE (kPa)	TEMP. (°C)	PRESSURE (kPa)	DURATION
Dry Air	<b>DA</b>	750	30	1000	120 minutes
Humid Air	<b>HA</b>	750	30	1000	120 minutes
Outside Air	<b>OA</b>	750	30	1000	120 minutes
<b>PIPE</b>					
LOCATION	SIZE (mm)	MATERIAL	RATING	SPECIFICATIONS	REMARKS
All	10 – 200	PVC	Schedule 80	ASTM D1785, CSA 137.3	
<b>COATINGS</b>					
LOCATION	SIZE (mm)	MATERIAL		SPECIFICATIONS	REMARKS
All	10 – 200	N/A			
<b>LININGS</b>					
LOCATION	SIZE (mm)	MATERIAL		SPECIFICATIONS	REMARKS
All	10 – 200	N/A			
<b>JOINTS</b>					
LOCATION	SIZE (mm)	TYPE	MAXIMUM SPACING	SPECIFICATIONS	REMARKS
All	≥75	Solvent Weld	N/A	ASTM D2467, D2564	Note 1
	≥75	Flanges	12m	ASTM D2467	
<b>FITTINGS AND APPURTENANCES</b>					
ITEM	SIZE (mm)	MATERIAL	RATING	SPECIFICATIONS	REMARKS
Flanges	10 – 200	PVC	Schedule 80		
ELL - Short Radius ELL - Long Radius, Couplings, Tees, Reducers, Reducing Outlets and Laterals	10 – 200	PVC	Schedule 80	ASTM D2467, Solvent Weld	
Plug	10 – 200	PVC	Schedule 80	ASTM D2467, Solvent Weld	
Cap	≥75	PVC	Blind Flange Schedule 80		
Flange Gaskets		Bl. Neoprene, Viton		ASTM F477	Note 3
PVC Solvent				ASTM D2564	Note 3
<b>NOTES</b>					
<ol style="list-style-type: none"> <li>Provide Unions or flanges as shown on Drawings to allow for pipe disassembly.</li> <li>Where pipe crosses a structural joint, install at the joint location an EPDM lined elastomer spherical moulded type expansion joint capable of 0.25 degrees angular movement and ±20 mm axial movement.</li> <li>Gaskets and solvent material to be compatible with designated chemical solution.</li> </ol>					

**DETAILED PIPING SPECIFICATION**

**SA**

<b>GENERAL</b>					
PROCESS FLUID	SYMBOL	MAXIMUM CONDITIONS		TEST CONDITIONS	
		PRESSURE (kPa)	TEMP. (°C)	PRESSURE (kPa)	DURATION
Soda Ash	<b>SA</b>	750	30	1000	120 minutes
<b>PIPE</b>					
LOCATION	SIZE (mm)	MATERIAL	RATING	SPECIFICATIONS	REMARKS
All	10 – 200	PVC	Schedule 80	ASTM D1785, CSA 137.3	
<b>COATINGS</b>					
LOCATION	SIZE (mm)	MATERIAL		SPECIFICATIONS	REMARKS
All	10 – 200	N/A			
<b>LININGS</b>					
LOCATION	SIZE (mm)	MATERIAL		SPECIFICATIONS	REMARKS
All	10 – 200	N/A			
<b>JOINTS</b>					
LOCATION	SIZE (mm)	TYPE	MAXIMUM SPACING	SPECIFICATIONS	REMARKS
All	≥75	Solvent Weld	N/A	ASTM D2467, D2564	Note 1
	≥75	Flanges	12m	ASTM D2467	
<b>FITTINGS AND APPURTENANCES</b>					
ITEM	SIZE (mm)	MATERIAL	RATING	SPECIFICATIONS	REMARKS
Flanges	10 – 200	PVC	Schedule 80		
ELL - Short Radius ELL - Long Radius, Couplings, Tees, Reducers, Reducing Outlets and Laterals	10 – 200	PVC	Schedule 80	ASTM D2467, Solvent Weld	
Plug	10 – 200	PVC	Schedule 80	ASTM D2467, Solvent Weld	
Cap	≥75	PVC	Blind Flange Schedule 80		
Flange Gaskets		Bl. Neoprene, Viton		ASTM F477	Note 3
PVC Solvent				ASTM D2564	Note 3
<b>NOTES</b>					
<ol style="list-style-type: none"> <li>Provide Unions or flanges as shown on Drawings to allow for pipe disassembly.</li> <li>Where pipe crosses a structural joint, install at the joint location an EPDM lined elastomer spherical moulded type expansion joint capable of 0.25 degrees angular movement and ±20 mm axial movement.</li> <li>Gaskets and solvent material to be compatible with designated chemical solution.</li> </ol>					

**DETAILED PIPING SPECIFICATION**

**SEA**

<b>GENERAL</b>					
PROCESS FLUID	SYMBOL	OPERATING LIMITS		TEST CONDITIONS	
		PRESSURE (kPa)	TEMP. (°C)	PRESSURE (kPa)	DURATION
Service Air	<b>SEA</b>	0-750	5-30	1400	120 minutes
<b>PIPE/FITTINGS</b>					
LOCATION	SIZE (mm)	MATERIAL	RATING		
All	<75	Aquatherm Greenpipe SDR 7.4			

**END OF SECTION**