

**EMPLOYER'S REQUIREMENTS – PHASE 1****ZD3 TECHNICAL REQUIREMENTS – POOL INSTALLATION****Pipework**

All pool circulating and plant room pipework is to be manufactured from Unplasticized Polyvinyl Chloride (uPVC) material (9bar Minimum) The fittings are to be of the solvent weld type and at connecting points to valves and equipment galvanised mild steel backing rings are to be supplied. Pipework fixing to be fitted using Galvanised unirax frame and pipe clamp supports.

Pipework is to be sized on the following water velocities:

Suction Pipework:	1.5 m/s
Discharge Pipe:	2 – 2.5m/s
Supplier	IPS Equal or approved

**Pool Fittings**

Inlet and outlet fittings must be 316L St St. For Number and sizes see pool drawings. They must achieve efficient distribution of water in each of the pools under all operating conditions and must take into account the following velocities:

Inlets:	1.0 – 2m/s
Outlets:	0.5m/s
Supplier	Certikin/Fluidra Equal or approved

<b>Plant Details</b>	Turnover: 1.5 hours Plant Flow: 32 m <sup>3</sup> /hr Bather Load : 18
<b>Plant Type</b>	Vertical pressure, medium rate sand filtration with the treatment of the water being achieved using the dual disinfection process incorporating UV and Calcium Hypochlorite with pH correction by means of Acid solution addition.
<b>Vessels</b>	No. and Size: 1 x 1.4m diameter Type: Medium Rate Material: GRP Backwash: 38.5m <sup>3</sup> /h Model: Astral - equal or approved
<b>Main Circulating Pumps</b>	No. Off: 2 x 100% - Duty/ Standby Model: NB50-200/213 Power: 3.3 kw, 3Phase, 50hz Model: Grundfos - equal or approved

<b>Instrumentation</b>	<p><b>Compound Gauge (Suction Header)</b></p> <p>Qty: 1 Type: 100 mm dia. st st, Bourdon type, glycerine filled Range: -10 to +10 m H<sub>2</sub>O</p> <p><b>Temperature Gauge (Suction Header)</b></p> <p>Qty: 1 Type: 100 mm diameter, bimetal with G ½" st st pocket Range: -20 to +60°C</p> <p><b>Pressure Gauge (Pump Discharge)</b></p> <p>Qty: 1 Type: 100 mm diameter, Bourdon type, glycerine filled Range: 0 to +40 m H<sub>2</sub>O</p>
<b>Flow Meter</b>	<p>Qty: 1 Type: Averaging pitot tube with 150 mm diameter dp gauge assembly for DN 80 pipe</p> <p>Max calibrated flow: 70 m<sup>3</sup>/h Gauge mounting: Wall adjacent to pipework</p>
<b>Primary Disinfection</b>	<p>UV: WF-115-3 Power: 0.75kw, 3Phase, 50hz Supplier: ATG equal or approved</p> <p>Complete with Inline Strainer on UV outlet.</p> <p>Qty: 1 Type: In-line conical top-hat strainer Materials: Stainless steel Size: DN 80 Mesh Size: 20 mesh (0.9 mm) Mounting: In horizontal discharge piping</p>

<b>Calcium Hypochlorite System</b>	<p>A chemical disinfection system to provide breakpoint chlorination is required as follows:</p> <p>Qty: 1</p> <p>Manufacturer: Gaffey Technical Services Pellet-Pro PP10E-15/15 for use with Hypo-70 or HTH Easiflo tablets Hopper capacity: 10 kg Dosing solution strength: 0.5 – 1.0 % w/w Cl<sub>2</sub></p>
<b>CO2 Ph Regulator</b>	<p>A complete liquid CO<sub>2</sub> system, is required. The system comprises: Qty: 1 x 100% duty Type: AC/1 Swimming Pool pH Control System Manufacturer: Messer UK or similar Output Range: 0.6 - 5.0 litres per minute</p>
<b>Pool Heating</b>	<p>A by-pass plate heat exchanger, booster pump, piping and valves are provided. The primary control equipment is provided by others.</p> <p><b>Heating:</b></p> <p>Duty: 28kW Inlet Temperature °C – 80.0 / 60.0 TBC by MEP Contractor</p> <p>NOTE: Above sizes are subject to confirmation at tender addendum</p>
<b>Pool Heating Booster Pump</b>	<p>Duty: 3.2m<sup>3</sup>/Hr @ 100% duty Pump Model: NB 32-160.1/137 @ 5MTH Power: 0.25kW / 3 Phase Model: Grundfos/ Lowara/ Waterco - equal or approved</p>

<b>Pool Attractions</b>	<p>Five body massage jets are supplied in the wall of the pool. The features are activated by a locally mounted colour-change illuminated switch, and is supplied complete with pump and all necessary interconnecting piping, fittings and valves</p> <p>Pump: Qty: 1 Maker: Grundfos or Equally Approved Model: NB32-125/106 Duty range: 13m<sup>3</sup>/h @ 12 mTH Motor size: 1.1kw Connections: DN50 Suction DN32 Discharge</p>
<b>Level Control</b>	<p>The balance tank is provided with a sight glass located within the plantroom.</p> <p>Water levels are detected by adjustable sensors located alongside the sight-glass and make-up operation is enabled by switching-relays mounted in the electrical control panel.</p> <p>QTY: 3 Sensor Type: Proximity, capacitive Maker: Omron Model: E2K, NC, complete with mounting brackets</p>
<b>CWS Make-Up</b>	<p>Evaporation loss, filter backwashing and bather drag-out is automatically replenished by fresh water introduced to the balance tank through a solenoid actuated make-up valve.</p> <p>The make-up valve pre-assembly, incorporating strainer, by-pass and isolating ball valves, is wall-mounting in the plant-room and the piping between the MUV and the balance tank is provided.</p> <p>Qty: 1 Type: Burkett 0290 230V/50Hz, 2/2-way NC solenoid valve, servo assisted, coupled diaphragm/armature assembly Item No: 045293 Size: G 1" – 10.0 m<sup>3</sup>/h (Kv) Materials: Brass body, NBR seals Approvals: WRAS Pressure: 6 bar max</p>
<b>Under Water Lighting</b>	<p>8no. Underwater LED Light with ABS faceplate to be provided by pool sub-contractor.</p> <p>Qty: 8 Type: PAR 56 Multicolour LED Light with ABS faceplate Manufacturer: Astral or Equal &amp; Approved Model: 37159</p>

<b>Electrical Control Equipment</b>	Type: Wall mounted / Free standing Manufacturing: Factory built, prewired and assembled to BS 5486 Part1
<b>Wiring</b>	Pool contractor is responsible for supply of control panel and all outgoing wiring with local isolators. Main contractor is responsible for the supply of mains power into plant room control panel. All main Filtration and features to be interlocked with the Circulating Pumps
<b>Pool Cover</b>	A roller-type heat retention cover is supplied and fitted by Pool SubContractor at the location indicated on drawings. Wall mounting-plates and a suitably rated, RCD protected, local electrical supply terminating in a lockable isolator in the position and details given on the assembly drawing, to be provided by the Build Contractor.  Qty: 1 Type: Wall mounted, radio control-motorised Maker: Forge Leisure Pool cover construction: Light blue UV stabilised PE coated fabric laminated to 5 mm PE foam with an underside PE embossed laminate complete with spool tapes, tow ropes and lanyards Storage spool/roller: 316 st st Mounting brackets: Galvanised steel with white GRP housing covers Complete with: Control box incorporating contactor, overload protection and isolator
<b>Electrical Supply</b>	Total Connected Load: See Electrical Characteristics Sheets SLP2012004

#### **Plant room & Pool Area System Requirements**

<b>Plant Space</b>	Adequate provision must be made for safe daily operator access & for effective and efficient service maintenance of the entire system
<b>Ventilation</b>	4No. Air changes required in the plant pit. Temperature in the plant pit should not fall below 10°C or rise above 25°C
<b>Chemical Room Ventilation</b>	4No Air changes required with forced mechanical ventilation to atmosphere. Chemical ventilation must be kept separate until atmosphere.
<b>Electrical Supply per Feature to Filtration Control Panels (Total Connected Load)</b>	As Per Individual systems above
<b>Sound proofing</b>	Plant room structures to incorporate all acoustic requirements for sound insulation, deafening and vibration.
<b>Filter Backwash</b>	Backwash drainage connection(s) required in plantroom c/w adaptor couplings suitable for industrial pipework and capable of a flow of:-  a) swimming pool filter 38.5m <sup>3</sup> /hr, 90mm O.D. pipe

<b>System Water Supplies</b>	Cold water supply adequately sized to the latest local water by-laws. It is generally required that a water storage tank and with type A-F air gap(British Standard) c/w pump set are supplied to ensure that pool water cannot contaminate drinking water supply. To supply the following systems  Swimming Pool, 28mm connection, 5.0m <sup>3</sup> /hr.
<b>Chemical Room Water Supplies</b>	1No. 15mm bib tap & hose supply to each Hypo and c02 rooms
<b>Initial Pool Fill Up Water Supply</b>	No. 28mm bib tap and hose local to each pool c/w 6m of hose pipe
<b>Safety Shower Water supply ( If Fitted )</b>	1No. 28mm at 2 bar local to chemical rooms safety drench shower
<b>Hot &amp; Cold water Supply</b>	Hot & Cold water supply local to plant room sink
<b>Temporary Pipe Test Water Supply</b>	Required local to Pool & Plant room area complete with 20m hose & ½" BSP female connection required capable of supplying 2bar pressure
<b>Plant Removal</b>	As Per Detail Drawings
<b>Floor Gulleys</b>	Floor Gulleys should be provided local to the Circulation Pumps, Filters, Sample Board, Chemical Area and Sink area.
<b>Concrete Plinths</b>	Plinths to be provided for the following – Circ Pumps, Filter Vessels, Booster Pump and UV.
<b>Electrical Supply</b>	Incoming electrical supply to the electrical control panel isolator by main contractor. Outgoing wiring and local isolators for all electrical plant items by pool contractor.

<b>Balance Tank</b>	GRP 10,000L Ø1.25m x 9.125
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<b>Commissioning (Including commissioning chemicals)</b>	Commissioning of the water filtration & Feature systems requires that that cleaning & disinfecting of the pools & balance tanks. Filling with potable water, During this time provision of power, heat by main contractor & commissioning chemicals are provided by pool contractor
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## **PREFERRED SUPPLIERS**

### **The Following Are Preferred Suppliers To Be Engaged By The Specialist Pool Installer**

#### **Filter Vessels**

##### **ASTRALPOOL UK**

Europe

United Kingdom: UNITS 30-32, PALMERSTON BUSINESS PARK

NEWGATE LANE, FAREHAM HANTS PO14 1DJ

Tel: +44 1329 514000 Fax: +44

1329 514036 e-mail:

[sales@astralpooluk.com](mailto:sales@astralpooluk.com) web:

[www.astralpool.co.uk](http://www.astralpool.co.uk)

##### **Certikin International Ltd**

Witan Park, Avenue 2, Station Lane Industrial Estate

Witney,

Oxfordshire OX28 4FJ

[enquiries@certikin.co.uk](mailto:enquiries@certikin.co.uk)

#### **Pumps**

##### **Grundfos Pumps Ltd**

Grovebury Road

Leighton Buzzard

Beds LU7 4TL

Tel - 01525 850000

Email [-grundfosuk@grundfos.com](mailto:-grundfosuk@grundfos.com)

#### **Primary Dosing**

##### **ATG UV Technology:**

Genesis House, Richmond Hill, Wigan WN5 8AA

United Kingdom

**Telephone:** +44 (0) 1942 216 161 **Email:**

[info@atguv.com](mailto:info@atguv.com)

**Chemical treatment**

**Grundfos Pumps Ltd**

Grovebury Road  
Leighton Buzzard  
Beds  
LU7 4TL  
Tel: 01525 850000  
Email:grundfosuk@grundfos.com

**Gaffey Technical Services**

Unit 3a Huncoat Business Park,  
Newhouse Rd,  
Accrington  
BB5 6NT

**Pipe Work**

**IPS Flow Systems**

Seaham Grange Industrial Estate,  
Seaham

**Heat Exchangers**

**SPX/ APV**

Building A, Compass House  
Manor Royal  
Crawley West Sussex, RH10 9PY  
United Kingdom

**Aquaden**

2 Crescent Way South  
Forest Hall  
NEWCASTLE UPON TYNE  
Tyne & Wear  
NE12 9AS  
Tel: 0191 2189706  
Mobile: 07860 961140  
Fax: 0191 2663232  
Email: dennis@aquaden.co.uk