

REFERENCE LIST

SEMICONDUCTOR
SOLAR
PHARMA
POWER GENERATION
FOOD & BEVERAGE
PULP AND PAPER
CHEMICAL
OIL AND GAS
MINING
AEROSPACE AND TRANSPORT



General Short-Form References

For the UK and Europe



Client	Plant Type	Capacity
Filtronic Compound Semiconductor Ltd, Newton Aycliffe	Ultrapure Water Treatment system including: Raw water pretreatment including storage tank & pumps, multi-media filters, degassers, GAC filters, Organic Traps, Filtered water storage	170m ³ /h
	UPW system including Primary RO, intermediate storage, vacuum deaerators, Primary mixed beds units and safety filters, UV systems, Secondary RO & UPW storage tanks UPW supply system including UV systems, cartridge mixed bed units, filtration systems and POU units	180m ³ /h
	Wastewater Treatment System including: Acid / Alkali stream with 2 x 100m ³ balance tanks, 3-stage neutralisation	85m ³ /h 45m ³ /h
	HF stream with 100m ³ balance tank, 3-stage neutralisation, flocculation, clarifier with sludge scraper, fully automatic filter press	45m ³ /h
	Advanced fluoride removal system with intermediate buffer tank, Sand and GAC filters, two fluoride absorbers, treated water tank, and regeneration system with softener. Final discharge system with two-stage neutralisation, cooling system and discharge monitoring for pH, flow, ammonia, fluoride and flow, plus 2000m ³ "Out of Specification" tank Chemical Bulk Storage and dosing systems for HCl, NaOH, NaHSO ₃ , Al ₂ (SO ₄) ₃ , Ca(OH) ₂ and NaCl Gold recovery system	260m ³ /h
Nikon Milton Keynes	Pure Water treatment system including: Raw water pre-filtration & storage Twin stream pre-treatment each with duty / standby softeners, GAC filtration, Reverse Osmosis system Storage & pumping PW loop including mixed bed polishers, fine filtration, UV sterilisation, fine filtration	6m ³ /h
Nippon Electric Glass Cardiff	Grinding & Polishing Wastewater treatment including: Buffer tanks, neutralisation & flocculation, settlement, sand filters and discharge monitoring, sludge thickener & filter press	40m ³ /h
	Oily wastewater treatment plant including: Buffer tank, Coagulation, DAF, Sand filters, cooling towers & recycling system	60m ³ /h
	Cooling Water & Softening system including: Four softeners	100m ³ /h 150m ³ /h
	Two sand filters, two cooling towers, storage tanks etc HF & Cr treatment system including: HF reaction, coagulation & settlement systems Cr wastewater batch treatment system Final sand filtration Sludge thickener & filter press Reagent storage & dosing systems for H ₂ SO ₄ , Ca(OH) ₂ , NaHSO ₃ , HCl, PAC & polyelectrolyte	0.5m ³ /h
Toray Textiles Europe Ltd. Mansfield	Process water treatment Wastewater treatment	
Toyota Motor Manufacturing Burnaston	Deionised Water Treatment system & Associated wastewater treatment	
Toa Medical Electronics Germany	Deionised Water Treatment system & Associated wastewater treatment	
Toyotasa Turkey	Deionised Water Treatment system	
Suzuki Hungary	Deionised Water Treatment system	

Client	Plant Type	Capacity
Shin-Etsu Handotai Livingston	UPW production system including: Raw water pre-treatment with heat exchanger, 3 x Multi-media filters & degasser, 3 x GAC filters and Organic Traps with regeneration system Intermediate treatment system with Primary RO, Permeate storage, 2 x Primary mixed beds, 2 x 50m ³ DI water storage tanks, intermediate filters, Secondary RO & 50m ³ storage tank Two final polishing system with cartridge mixed bed polishers and U/F Chemical bulk storage systems for NaOH, NaCl, HCl & coagulant	110m ³ /h 2m ³ /h
	Wastewater Treatment System including: Fluoride stream with 10m ³ buffer tank, two-stage precipitation, flocculation Main Treatment stream with 2 x 90 m ³ buffer tanks, coagulation, neutralisation, flocculation and settlement with sludge scraper Biological treatment system with Two-stage denitrification, Nitrification, Settlement tank with sludge scraper, GAC filtration Sludge thickener with scraper, 2 x 1.05m ³ filter presses Regeneration wastewater neutralisation system Final Discharge monitoring including pH, turbidity, ammonia and flow Chemical bulk storage & dosing systems for Ca(OH) ₂ , H ₂ SO ₄ , NaOH, Al ₂ (SO ₄) ₃ , H ₃ PO ₄ , IPA, polyelectrolyte Raw water supply system	120m ³ /h 180m ³ /h
	Deionised Water Treatment system & Associated wastewater treatment	
Hoya Lens Deutschland		
TMI Europe Italy	Wastewater Treatment	
Vistakon Ltd. (Johnson & Johnson) Limerick	Purified Water system including heat exchanger, GAC filter, softeners, 1 ^o & 2 ^o RO, UV sterilisers, mixed bed & storage etc Pure steam generator system WFI system including mixed bed polishers, heat exchanger, Still & storage etc Product mixing & filling systems pH adjustment using CO ₂ Blow-Fill-Seal filling system Full validation	3m ³ /h TW 160kg/h 0.5m ³ /h
	Descal 1 facility including: Fully automatic coil pickling facility (H ₂ SO ₄ / H ₂ O ₂ type pickle) including all ancillary equipment, control system, mechanical handling etc. Fume extraction & Scrubbing system including packed tower scrubber Chemical bulk storage and automated dosing system including: 77%w/w H ₂ SO ₄ , 30%w/w HF, 35%w/w H ₂ O ₂ Wastewater treatment plant including: Spent Acid & Wastewater collection & balancing systems Spent Acid storage & transfer systems Two-stage neutralisation, lamella tube clarifier & discharge monitoring Sludge thickeners & fully automated filter press Lime silo, slurry tanks and slurry dosing system Treated wastewater recycling systems	50m ³ /h
Outokumpu Stainless Ltd.		
Shanks Waste Solutions, Marston Vale	Bulk storage and dosing system for 47%w/w NaOH Dosing systems for H ₃ PO ₄ & antifoam TOVEKO sand filter (model S-450) in 2205 duplex alloy & ancillaries	30m ³ /h

Client	Plant Type	Capacity
Outokumpu Stainless Ltd.	Descale 2 facility including: Chemical bulk storage and automated dosing system including: 69%w/w HNO ₃ , 35%w/wHF, 35% H ₂ O ₂ Wastewater treatment including: Spent Acid & Wastewater collection & balancing systems Spent Acid storage & transfer system Spent Alkali transfer & storage system Two-stage neutralisation system Sludge Thickener	20m ³ /h
Outokumpu Stainless Ltd.	Recycling system for wastewater from de-scaling section, hydrocyclone-based system	40m ³ /h
BOC Edwards Paris	Batch Wastewater Treatment system including: Acid, Alkali & Ammonia wastewater storage & transfer systems Batch treatment tank with semi-automatic sequence control Chemical storage & dosing systems for H ₂ SO ₄ , NaOH, Ca(OH) ₂ , CaCl ₂ and polyelectrolyte Sludge filter press with acid cloth cleaning system Final pH adjustment system with polishing filter, discharge monitoring & transfer system Segregated floor spillage systems	
Seagate Technologies Limavady	Ultrapure Water system upgrade including EDI (electrodeionisation)	
	Water supply system for process use including softeners, softened water storage, safety filters and Primary RO system Process water feed to various production processes including intermediate filter & UV systems	10m ³ /h
Sumikei Czech s.r.o. Benatky nad Labem Czech Republic	Main water recycling system for extrusion process including Secondary RO, storage and distribution Reject stream recovery system including coagulation, flocculation, sand filtration, GAC filtration, settlement of dirty wash water streams Final neutralisation for system losses , final discharge monitoring Cooling Tower dosing systems for biocide & inhibitor, 3 systems including automatic controllers	36m ³ /h >96% recovery
Inspectorate International Witham	Wastewater treatment from chemical laboratories Balance tank & pumps Coagulation, neutralisation, flocculation, tube settlement, TOVEKO sand filter, polishing filters, mercury polishing filters, final discharge monitoring & recording Dosing systems for H ₂ SO ₄ , FeCl ₃ , NaOH, polyelectrolyte Sludge thickener, sludge filter press	4m ³ /h nominal
Innos, Southampton	Process dumps transfer, collection and bleed system Rinse water collection, transfer & neutralisation Dosing system for NaOH, floor spillage collection, safety equipment Final discharge monitoring Dual containment pipework system	1m ³ /h nominal
Jaguar Cars Ltd, Halewood	Wastewater Treatment & Process Dumps collection systems for Acid, Alkali and Paint wastes. Paint coagulation, Neutralisation, Flocculation,, two lamella tube settlers, Final discharge monitoring Sludge thickener, sludge filter press & filtrate recycling Bulk chemical storage & dosing for FeCl ₃ , HCl & NaOH, incl. HCl scrubber. Additional dosing systems for polyelectrolyte & antifoam Floor spillage systems Full integrated control system with SCADA	(3 x 150m ³ and 3 x 120m ³) ≤75m ³ /h

Client	Plant Type	Capacity
GE Aerospace Hamble	<p>Total-loss wastewater treatment plant from manufacture of aircraft components. Plant includes:</p> <ul style="list-style-type: none"> Chromium reduction pH Neutralisation Flocculation Lamella Tube clarifier Continuous gravity "Toveko" tertiary sand filter Sludge collection and thickening tank plus filter press Discharge monitoring <p>Later upgrade to chemical dosing systems, to accept bulk chemical deliveries</p> <p>Later upgrade to add treatment of tartaric acid</p>	20m ³ /h
PETEC, Sedgefield	<p>Ultrapure Water production system including:</p> <ul style="list-style-type: none"> Pre-filter Raw water heater Duplex softeners Softened water storage ROCEDIS Reverse Osmosis / EDI UPW storage and supply loop with UV UPW heater and polisher unit <p>Wastewater treatment system including:</p> <ul style="list-style-type: none"> Wastewater collection, transfer & two-stage neutralisation (acid / alkali) Four spent solution transfer & collection systems 	0.7m ³ /h 3m ³ /h
Otelinox Targoviste Romania	<p>Bulk storage & acid dosing systems including:</p> <ul style="list-style-type: none"> 33m³ storage tank for 70%w/w Hydrofluoric Acid plus integral bund Tank filling system HF delivery pumps including double-walled pipework system with leak detection. HF delivery system to three process steps Control system including plc with automatic filling control system 60% Nitric Acid system including Tank filling HNO₃ delivery pumps with single skin stainless steel pipework 	
Sumikei Czech s.r.o. Benátky nad Labem Czech Republic	<p>Factory production expansion including:</p> <p>Water supply system for process use including softeners, softened water storage, safety filters and Primary RO system Process water feed to various production processes including intermediate filter & UV systems</p> <p>Main water recycling system for extrusion process including filtration, neutralisation, storage and distribution</p> <p>Final neutralisation for system losses , final discharge monitoring</p> <p>Provision for future expansion</p>	10m ³ /h 36m ³ /h >96% recovery
Ray Owen Plating Telford	<p>Special Ion Exchange system for removal of Iron & Zinc contaminants from Trivalent Chromium Passivate solution Skid-mounted system including Backwash liquor make-up & recovery & Regeneration system</p>	3m ³ /h
Alstom Power Plants RWE npower, Pembroke UK	<p>Demineralisation</p> <ul style="list-style-type: none"> Raw Water storage & back-washable filters Ultrafiltration with CIP system RO pre-filters Double Pass RO units with CIP system Permeate storage & pumping Mixed bed exchangers Bulk storage & dilution systems for 96% H₂SO₄ & 32% NaOH Neutralisation system 	2 x 86m ³ /h 2 x 84m ³ /h 2 x 60m ³ /h

Client	Plant Type	Capacity
Egbin Power Plant, Lagos, Nigeria	Raw Water Pre-treatment system upgrade / refurbishment Coagulation, pH adjustment, flocculation, settlement, gravity sand filtration, sludge dewatering, chemical dosing & control system	300m ³ /h
	Deionised Water Make-up System 2 x 100% Carbon Filter, Cation, Anion, Mixed bed system External regeneration for mixed beds Chemical bulk storage, delivery & measure systems Deionised Water Storage Wastewater Treatment system Control system All ancillaries including Health & Safety equipment	240m ³ /h
LAB S.A for KARA Roskilde Denmark	Treatment of wastewater from Flue Gas Desulphurisation 2-stage Neutralisation & oxidation, Precipitation and Flocculation Lamella clarifier, sludge thickener & fully mechanised filter press. Post-precipitation stage, pressure sand filters, pH adjustment and final ion exchange system Chemical dosing for Ca(OH) ₂ , NaOH, TMT15, Anti-scalant, FeCl ₃ & Polymer Acid cleaning facilities for main plant, auto electrode cleaning	16m ³ /h
Tallent Automotive Cannock, UK	Treatment of wastewater from metal finishing pH correction, flocculation, Lamella Tube Settler Alkali dumps tank & bleed system Sludge collection and filter press IBC-based dosing systems for H ₂ SO ₄ and NaOH Emulsion –based dilution and dosing system for polymer	10m ³ /h
	Deionised Water Treatment Plant Softener / Reverse Osmosis unit, plus all interconnecting pipework to production equipment	5m ³ /h
GE Aerospace Hamble (Second Plant)	Total-loss wastewater treatment plant from manufacture of aircraft components. Plant includes: Wastewater Balance Tank Chromium reduction pH Neutralisation Neutralisation of tartaric acid stream Flocculation Lamella Tube clarifier Continuous gravity "Toveko" tertiary sand filter Sludge collection and thickening tank plus filter press Discharge monitoring Chemical dosing for acid. Alkali and bisulphite via automatically-switched IBCs Remote plant monitoring and alarm transmission Interconnecting pipework for transfer systems from Production areas	20m ³ /h
	Treatment of wastewater from Flue Gas Desulphurisation Complete twin-stream plant, each line incorporating: Buffer tank, Coarse & Fine Neutralisation & oxidation, Precipitation and Flocculation Lamella clarifier, sludge thickener & fully mechanised filter press. Post-precipitation stage, pressure sand filters, pH adjustment and Ammonia removal (scrubber) Granular Activated Carbon filtration, Cation exchange, Arsenic removal, Final discharge control & measurement Chemical dosing facilities for FeCl ₃ , CaCO ₃ , HCl, NaOH, TMT15, Anti-scalant, & Polymer Acid cleaning facilities for main plant, auto electrode cleaning	2 x 10m ³ /h
LAB S.A for Amagerforbraending Denmark (Second plant)		

Client	Plant Type	Capacity
KCS Herr Voss for Egypt	Total-loss wastewater treatment plant from cleaning of aluminium coil. Plant includes: Acidification Oil flotation pH Neutralisation Flocculation Lamella Tube clarifier Sludge collection and thickening tank plus filter press Chemical dosing H ₂ SO ₄ , NaOH & Polymer	3m ³ /h
	Water Treatment plant including: Activated Carbon filter Base Exchange softeners Reverse Osmosis system Mixed Bed Polishers	2.5m ³ /h
Chromalloy Somercotes (Second Plant)	Total-loss wastewater treatment plant from manufacture of aerospace components. Plant includes: Ammonia treatment Acid dumps collection & bleed system pH Neutralisation Flocculation Lamella Tube clarifier Continuous gravity "Toveko" tertiary sand filter Sludge collection and thickening tank plus filter press Discharge monitoring (pH, flow, Nickel) Chemical dosing H ₂ SO ₄ , NaOH & Polymer Containment bund	5m ³ /h
Heathrow Airport Ltd. Snow-base	Total-loss wastewater treatment plant for Sweeper Waste. Plant includes: Gross solids removal & conveyor system Fuel Interceptor Wastewater Balance tank Circular Interceptor (oil & fuel removal) pH Neutralisation Trace metal precipitation Flocculation Dissolved Air Flotation Oil & Sludge transfer system and Holding tank TOC monitoring & Wastewater Diversion system Low & High TOC Concentration Holding tanks Automatic blending and discharge system On-line TOC analysis and control On-line COD analysis Automatic blending & control system IBC-based automatic dosing for FeCl ₃ , TMT15 & NaOH Automatic polyelectrolyte dilution & dosing system	10m ³ /h
GE Caledonian Prestwick	Upgrade of existing wastewater treatment plant for aero-engine maintenance (original supplied 1990) Wastewater Balance Tanks Chromium reduction pH Neutralisation Flocculation Lamella Tube clarifier Final pH adjustment Sludge collection and thickening tank plus filter press Discharge monitoring	

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