

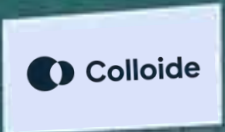


Chemical Dosing Solutions & Systems

Catalogue



Colloide



Our experience is accumulated over a 20 year period. During this time, we have gained extensive experience in Design, Manufacture, Installation and Commissioning of Chemical Dosing Systems.

Colloide design and build customised chemical storage and dosing systems for a wide range of chemicals and applications. These packages are tailored to suit our clients' requirements while adhering to European Standards, Ciria and HSE guidance.

Excellence in Fluid Technology

We create added value for people and the environment.

Storage capacity, duty/standby configurations, materials of construction, etc. are tailored to the application, to provide adequate storage and ensure that the system can be operated and maintained safely.



Our foundation

The chemical storage and dosing systems are fully fitted with instrumentation such as level controls, leak detection, flowmeters, etc. and are generally PLC controlled with an operator interface panel or PC used to allow the operator to view the plant operation and change parameters.



Capabilities

Location – We have the capability to deliver your requirements anywhere across the UK, Ireland, Scotland, and Wales.

Supply Chain – We have sourced suppliers and developed a reliable relationship, with suppliers based across the UK and Ireland. Our supply chain is accredited to high Quality, Health and Safety and Environmental standards.



Availability – We have the capacity to engineer equipment on a short lead time, due to our ability to design and build off-site.

Customised Requirements – Our standardised design can be adapted to meet bespoke requirements for drinking water and waste water sites.

Dosing Technology

Bespoke options & expertise

We understand each project is unique with bespoke requirements. That is why for 20 years our capabilities have expanded to enable the delivery of a wide range of options.

When you partner with Colloide on a project you can expect the following features and benefits for your chemical dosing system(s).

- Systems are designed and built to suit the confines of a particular site and individual needs.
- Long-standing relationships with an extensive range of component suppliers, such as chemical dosing pumps, and access to the latest technologies.
- Range of standard packaged systems also available, which can be dropped on site, effectively independent of the main plant.
- We pre-build as much equipment off site as possible, minimising the on site work.
- Health & safety and environmental protection at the forefront of all system, including bunding, dual containment, splash protection, leak detection, labelling, training, etc.



Our Dosing Systems



Phosphorus Removal

Removing phosphorus from wastewater to the low levels required by the Water Framework Directive.

Page 8



NaOH Dosing

Used in a wide range of industrial and chemical processes for pH correction, descaling etc.

Page 9



Sulphuric Acid

Sulfuric acid is the most commonly used acid in the world. It is frequently used to bring the pH level of wastewater back to normal.

Page 10



Orthophosphoric Acid

The use of orthophosphoric acid is a practice used by the water industry to safeguard customers from ingestion of lead and to prevent metal dissolution.

Page 11



Septicity Control

Septicity can be reduced by adding sodium nitrate or calcium nitrate chemicals to the flow. Ferric chloride can also be added to precipitate sulphide. Discover our new 'Plug and Play', skid-mounted, chemical dosing systems.

Page 12-13

The best solution for your application



NaOCL

More commonly known as bleach, this chemical is often used to eliminate viruses and bacteria during the disinfection stage.

Page 14



Modular Chemical Dosing Systems

A wide range of kiosks are available.

Page 15



Examples of customised solutions

A range of chemical dosing systems made to our client's specific needs.

Page 16-17



Project Portfolio Highlights

Key projects that showcase high-standard builds and expertise. Producing results and protecting the environment.

Page 18-21



Our Services

We will work with you and your project team from the design stage through to construction, installation and maintenance.

Page 22-23

Our Dosing Systems



Awards & Accreditations

We are continuously striving to evolve as a company and be the very best we can be within our sectors.

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Our Technologies

Water treatment and energy solutions.

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Our Locations

Serving our customers across the UK, Ireland and further afield.

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Customised Solutions & extensive project portfolio



Phosphorus Removal



Overview

Chemical Dosing Systems for the removal of Phosphorus. Available in configurable arrangements from single duty to multiple duty/ standby arrangements. Multi chemical, compatible for phosphate removal. Ferric Sulphate, Ferrous Chloride, Ferric Chloride and Aluminium Sulphate. Complete with dedicated local control panel to monitor tank level, reorder chemical, switch pump duty etc. Available with segregated Fill Point enclosure and fill panel to integrate to your interceptor tank.

Technical Data

Unit Data		0 - 30	0 - 200	0 - 630
Flow capacity	l/h	0 - 30	0 - 200	0 - 630
Permissible counter pressure	bar (max)	16	16	16
Permissible suction head	mWC (max)	3	3	3
Number of pumps	Quantity	8	8	8

Basic Designs

- Peristaltic or Diaphragm Dosing Pumps
- Local control panel with touch screen HMI
- Ultrasonic Tank level monitoring
- Each pump within segregated pump enclosure
- Segregated Fill Point enclosure
- Calibration and valve arrangement
- Optional pressure relief, flow sensors and loading valves



NaOH dosing



Overview

Fully configurable NaOH metering systems. Complete with diaphragm dosing pumps in duty/ duty or duty/ standby configurations. Contained within segregated pump enclosures allowing safe maintenance without loss of metering. Available with transfer system and batching tanks. In house bespoke control systems.

Technical Data

Unit Data				
Flow capacity	l/h	0 - 30	0 - 60	0 - 940
Permissible counter pressure	bar (max)	16	16	16
Permissible suction head	mWC (max)	3	3	3
Number of pumps	Quantity	8	8	8



Basic Designs

- Diaphragm dosing pumps
- Local control panel with touch screen HMI
- Tank sizes to suit your system
- Pressure transducer level monitoring
- Each pump within segregated pump enclosure
- Segregated fill point enclosure
- Calibration and valve arrangement
- Optional pressure relief, flow sensors and loading valves

Sulphuric Acid



Overview

Sulphuric acid dosing systems constructed from pvdf fusion bond pipework and chemical compatible dosing enclosures. Fully segregated pump enclosures, available in duty/ duty and duty/ standby sets.

Technical Data

Unit Data

Flow capacity	l/h	30 - 940
Permissible counter pressure	bar (max)	16
Permissible suction head	mWC (max)	3
Number of pumps	Quantity	8

Basic Designs

- Diaphragm dosing pumps
- Local control panel with touch screen HMI
- Tank sizes to suit your system
- Pressure transducer level monitoring
- Each pump within segregated pump enclosure
- Segregated fill point enclosure
- Calibration and valve arrangement
- Optional pressure relief, flow sensors and loading valves



Orthophosphoric Acid



Overview

Orthophosphoric acid dosing systems are available as skid assemblies or plug and play kiosk enclosures. Available in bespoke arrangements with coriolis flow meter to monitor dosed chemical.

Technical Data

Unit Data				
Flow capacity	l/h	0 - 30	0 - 200	0 - 940
Permissible counter pressure	bar (max)	16	16	16
Permissible suction head	mWC (max)	3	3	3
Number of pumps	Quantity	8	8	8



Basic Designs

- Diaphragm dosing pumps
- Local control panel with touch screen HMI
- Tank sizes to suit your system
- Pressure transducer level monitoring
- Each pump within segregated pump enclosure
- Segregated fill point enclosure
- Calibration and valve arrangement
- Optional pressure relief, flow sensors and loading valves

Septicity Control



Overview

Septicity occurs in sewage or sludge when the micro-organisms have utilised all the dissolved oxygen and any nitrates that may be present. Dosing of chemicals such as Calcium Nitrate/ Sodium Nitrate helps to reduce irritating odour problems. Colloide developed a simple compact product to provide metered chemical.

Technical Data

Unit Data			
Flow capacity	l/h	0 - 30	0 - 120
Permissible counter pressure	bar (max)	16	16
Permissible suction head	mWC (max)	3	3
Number of pumps	Quantity	8	8

Basic Designs

- Duty Peristaltic dosing pump
- Tank sizes to suit your system
- Local control panel
- Ultrasonic level monitoring
- Calibration and valve arrangement
- Optional pressure relief, flow sensors and loading valves



Plug and Play', Skid-Mounted, Chemical Dosing Systems

Working closely with the Severn Trent Water standard product and design team developed a solution for septicity dosing at pumping stations or sites with restricted space.

Product highlights

- Smaller footprint using Forbes innovative Innatank system
- Skid mounted 'Plug and Play' to reduce onsite installation time
- Full factory assembly and testing
- Reduction in process instrumentation using the flow and pressure monitoring capabilities of Grundfos SMART Digital intelligent dosing pumps
- Reduction in both capital investment and Whole Life Costs



NaOCl Dosing



Overview

Sodium Hypochlorite dosing systems, suitable for water or wastewater treatment system. Available in dosing skid or full containerised dosing systems, complete with duty standby tanks and local control panel. De-gassing system available to reduce maintenance shutdowns.

Technical Data

Unit Data		0 - 30	0 - 200	0 - 940
Flow capacity	l/h	0 - 30	0 - 200	0 - 940
Permissible counter pressure	bar (max)	16	16	16
Permissible suction head	mWC (max)	3	3	3
Number of pumps	Quantity	8	8	8

Basic Designs

- Diaphragm dosing pumps
- Local control panel with touch screen HMI
- Tank sizes to suit your system
- Pressure transducer level monitoring
- Each pump within segregated pump enclosure
- Calibration and valve arrangement
- Optional pressure relief, flow sensors and loading valves



Modular Chemical Dosing Systems



Overview

Colloide can provide factory constructed chemical dosing plants to your specification. Designed in house, constructed and fully tested in our factory. Constructed from GRP or bespoke corrugated steel. These allow simple integration with site systems without long and disruptive construction times.



Examples of Customised Solutions



Raglan WwTW

Upgrade Welsh Water chemical dosing Framework

The main reason for the upgrade to Raglan was to meet the more stringent phosphorus removal requirements, placed on the water industry. Welsh Water anticipate an increase from 26.12% to 34.6% from 2015 to 2025 on their percentage of sludge generated from the phosphorous sites compared to the total sludge produced.



Frankton STW Upgrade

Colloide's solution included a 2 pump package dosing system with a 5m³ storage tank to satisfy the chemical dosing requirements for the site. Through the AMP circa 100 single and multiple tank systems were delivered with tanks sizes ranging between 2m³ and 60m³. Dosing rigs containing between one and six dosing pumps, with a variety of duty and standby configurations, have been supplied to suit individual site requirements.



Finham STW standard product chemical dosing systems

The largest variation of the standard product delivered at Finham Sewage Treatment Works. Colloide designed, supplied, installed and commissioned a package Ferric Sulphate dosing system at Finham STW which consisted of four 60m³ chemical storage tanks and a dosing kiosk containing four pumps configured in a Duty/Duty/Duty/Common Standby arrangement.



Case Study

Mattersey Thorpe (STW) Chemical Dosing



Client:
Severn Trent Water

Principal Contractor:
NMCM

M&E sub-contractor:
Colloide

Location:
Mattersey Thorpe,
Doncaster

Project:
Chemical Dosing

On this project Colloide acted as Mechanical and Electrical sub-contractor, working under principle contractor, North Midland Construction PLC (NMCM) for Severn Trent Water as part of overall upgrade works at Mattersey Thorpe Sewage Treatment Works.

Scope of work included:

A 5m³ Tank 1 Pump Chemical Dosing System was installed by Colloide to satisfy the phosphorus removal requirements of this project.

The chemical dosing system consisted of a chemical storage tank, chemical fill point and dosing kiosk.

The dosing kiosk contained a chemical dosing LCP and all associated pump and instrumentation.

Technical information

The main components of the system

Fill Point Kiosk

The fill point kiosk is the point for chemical delivery into the storage tank. For delivery to be permitted, the green “delivery permitted” lamp in the fill point kiosk must be lit. If the green light is not lit, no chemical delivery is permitted, regardless of the indicated tank level.

Inside the fill point kiosk there is a beacon and sounder, which warn:

- that the storage tank has reached its FULL level, or
- that the ultrasonic level transmitter has failed or is out of range, or
- that there has been a rapid drop in level in the storage tank, or
- that the leak detection probe in the storage tank bund has been activated. No chemical delivery is permitted if the red beacon is lit, nor if the sounder is sounding.

Chemical Storage Tank

The chemical storage tank is situated inside a bund, which is equipped with a float switch that is activated if liquid enters the bund (level around 1 inch). This can indicate that there is a leak on the storage tank or on the pipework exiting the storage tank, but the liquid can also come from the dosing skid bund.

The storage tank itself is equipped with:

- fill pipework
- outlet pipework with isolation valve
- overflow pipe (leading into the bund)
- drain valve
- vent
- ultrasonic level transmitter (with displays in fill point kiosk and on control panel)
- pressure gauge tube (gauge dial in fill point kiosk)

Dosing Kiosk

The dosing kiosk contains: dosing skid, control panel, heater, distribution board. Each pump draws chemical from the storage tank through the common suction pipework. A flow switch installed on the outlet pipework in each pump compartment indicates if there is any flow from the pump. There is a pressure relief valve (set to 3.5 bar) on the pipework of each pump compartment.

Each pump compartment in the dosing skid is equipped with its own leak detection float switch, where a pump is physically installed. In addition, any leaks inside the pump compartments will eventually overflow into a raised hole in the bottom of the pump compartment. It then flows to the common bund of the dosing kiosk, and then through the dual containment of the suction pipework, ending up in the storage tank bund. The storage tank bund is also equipped with a float switch.



Case Study

Diageo pH correction & effluent treatment



Client:
Diageo

Location:
Belfast,
Northern Ireland

Project:
pH, Correction System

In order for Diageo to gain their discharge licence, updated by Northern Ireland Water the effluent limits needed to be monitored and controlled.

Throughout studies it was apparent that each parameter was within its limit. The pH limit, however, was fluctuating in and out of its limit.

Therefore, Colloide were contracted to provide Diageo with a pH control system to regulate the pH of the effluent leaving the plant, ensuring that it was kept within the license limits of 5 –10.

Throughout our initial testing we found the pH levels were crossing both the upper and lower limits, therefore it was necessary to be able to adjust the pH value both ways, Colloide proposed a solution which included an acid and sodium hydroxide dosing system to allow control of the pH in both directions

Project Deliverables

The main components of the system

- A new pumping station that would pump the effluent to an above ground contact tank where the chemicals are mixed into the effluent.
- The current flow direction is altered through the valve chamber allowing the flow to pass into the new pumping station.
- A contact tank mounted at ground level. The acid and sodium hydroxide are dosed at the inlet end of this tank.
- A pH measurement system, made up of three separate PH probes operating within triple validation mode, mounted on the outlet of the contact tank.
- Acid storage and dosing system including 1000L tank and bund, duty/standby dosing pumps, pipework, etc.
- Sodium hydroxide storage and dosing system including 1000L tank and bund, duty/standby dosing pumps, pipework, etc.
- Antifoam dosing system.
- Main control system to monitor and control all of the plant from main process pumps to dosing systems.

Following completion, equipment training and the handover consultation Diageo have without fail reached their desired limits which align with the limitations set by Northern Ireland Water standards. Diageo are now competent that if any issues are to arise their newly installed validation system will keep them on track to increases or decreases of their pH values.



Our Services

Our services range from design through to construction, installation, commissioning, maintenance and overall project management. Our experience is wide ranging, from major water utility installations and innovative ‘first of its kind’ district heating projects through to work with breweries on process improvements and biomass heating installations.

We have the skills to take on the role of either principal contractor, specialist sub-contractor or equipment supplier, and are equally comfortable and experienced in all roles.

Colloide’s reputation for reliability, innovative thinking and professionalism is of paramount importance to us.

In all cases, we work in partnership with our clients and their consultant engineers and, whether it is a solution to an existing problem or future proofing against upcoming process and environmental challenges, we believe that Colloide is second to none in terms of technical excellence and customer service.



Design



Maintenance



Construction



**Project
Management**

Full turnkey project management service or specialist subcontractor

Design

We have the experience and skills to recommend and design engineering systems for our clients.

Whether a new build installation, refurbishment, process improvement or future proofing existing operations, we are always focused on getting the most effective and practical solution for each individual situation.

Our specialist experience includes:

- water and waste water treatment;
- industrial effluent handling;
- process optimisation through MEICA;
- energy centres, heat recovery and renewable energy.

Construction

Colloide provides a full end-to-end service, from our in-house manufacturing capability through Colloide provides a full end-to-end service, from our in-house manufacturing capability through to on-site installation and commissioning. Our in-house skills include mechanical, electrical, chemical and process engineering and project management expertise. Whether working as the primary contractor or a sub-contractor, our engineers are trained to provide a seamless service from installation through to commissioning, process proving and training of client operatives before completing handover. With our commitment to ongoing research, development and training, we ensure that our extensive range of technologies and products stays ahead of the game.

Maintenance

We offer clients a range of operation and maintenance services, from planned support programmes and standard warranty back-up, through to a 24 hour emergency call out service. Our team of service engineers are trained to the highest health, safety and quality standard, providing a seamless support service to our clients.

Project Management

Our involvement in a project can range from equipment supply through to a full project management EPCM role. Managing the supply chain, project partners and budget, we ensure that projects are completed on time, within budget, to the agreed specification and with the necessary risk management, health, safety and quality controls.

Awards & Accreditations



Colloide is committed to maintaining the highest standards of health and safety, quality and environmental management. This commitment is reflected in the independently audited accreditations held by the company: ISO 9001, ISO 14001, ISO 45001, SSIP.

INVESTORS IN PEOPLE® We invest in people Gold

Colloide is proud to be accredited with the prestigious Investors In People Gold Standard. IIP has long been acknowledged as the most successful framework for business improvement through people, and is a reflection of our commitment to staff training, professional development and personal growth.



Our Product Range



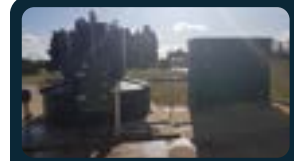
Activated Sludge Treatment



Anaerobic Digestion



Biomass Heating and Heat Pumps



Chemical Dosing



Bridge Scraper Systems



Clarifier Systems



Control Systems



DAF



Deep Bed Sand Filters



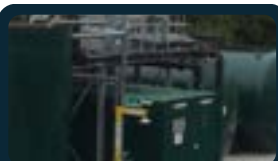
District Heating & Energy Centres



Dynamic Sand Filters



MBBR



MBR



Membrane Filtration



Multi Cell Media Filtration



Pressure Filters



Pumping Stations



SBR



Tekleen Filters



Rapid Gravity Filters

Our Locations

With headquarters in Cookstown, Northern Ireland as well as offices in Ireland and further afield, Colloide guarantees the best possible customer care on-site.

Colloide Engineering System

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**Getting the best solution
for our clients through**

**skills, innovative thinking
and a flexible papproach**



A highly skilled process engineering company, with specialist skills in water treatment, energy, environmental and facilities engineering solutions.



Colloide



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