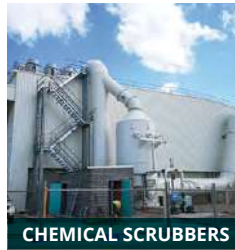


CAPABILITY PROFILE

- ▶ Designers, build-to-order manufacturers and turnkey suppliers
- ▶ World-class air pollution & odour control solutions
- ▶ Industrial fibreglass (FRP) products
- ▶ Chemical drainage & coating systems



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CHEMICAL SCRUBBERS



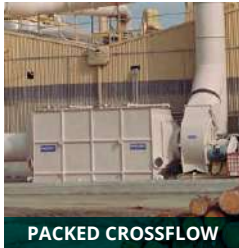
SIEVE TRAYS



GREEN DOME ODOUR FILTERS



VENTURIS



PACKED CROSSFLOW



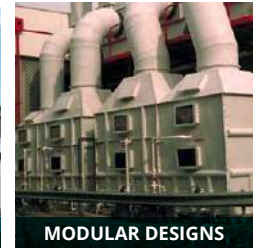
MIST ELIMINATORS



STRIPPERS/DEGASSERS



CYCLONE SEPARATORS



MODULAR DESIGNS



VOID TOWERS



PILOT PLANTS

EXPERTS IN: AIR POLLUTION & ODOUR CONTROL

World-class solutions for tough air pollution and odour control projects.



BIO-TRICKLING FILTERS



CARBON BEDS



MICROSCRUBBERS



SPECIALTY SENSORS



SCRUBBER ASSESSMENT



TOWER INTERNALS



TANK COVERS



DUCTING

EXPERTS IN: INDUSTRIAL FIBREGLASS (FRP) PRODUCTS

World-class products for storing and handling corrosive fluids and for use in air pollution and odour control projects.



FANS



FRP LINERS



PUMP STATIONS



VALVE CHAMBERS



SURGE TANKS



EPOXY GROUT



FRP PIPE



WHISPAPIPE



COATINGS & LININGS



VORTEX DROPPERS



FRP MANHOLES



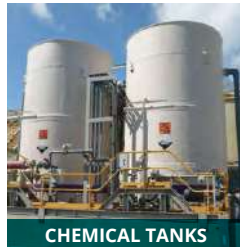
FRP FLUMES



SILENCERS



STACKS & DIFFUSERS



CHEMICAL TANKS

More of our wide range is available on our website armatec.co.nz

ARMATEC WORKS WITH INDUSTRY AND LOCAL AUTHORITIES TO REDUCE EMISSIONS TO THE ENVIRONMENT

We are committed to the journey towards carbon neutrality and zero waste, for ourselves and our clients. We value leadership, trust and commitment.



BRYAN AND KEN HOLYOAKE

Operating for over 40 years, we manufacture fibreglass products in New Zealand and leverage our international manufacturing, engineering, agency and distribution partners to bring you worldwide capability.

Armatec serves broadly across industries including dairy, wastewater, pulp & paper, fertiliser, food, chemical plants, galvanisers and marine.

We offer a unique combination of trusted solutions, strong technologies, in-house design by experienced Chemical Engineers, pilot plant testing capability & highly skilled fibreglass technicians.

From concept to commissioning, our team works with customers, consultants, contractors, and global technology partners to implement cost effective and innovative solutions to reduce emissions to the environment.

We deliver on what we promise and look forward to working with you on your next project.

Bryan Holyoake, *Managing Director*

Ken Holyoake, *Chairman*

KEY PARTNERS & MEMBERSHIPS



AS/NZS ISO 9001
AS/NZS ISO 45001

BUREAU VERITAS
Certification



OUR TEAM

Our family owned and operated company is led and driven by skilled, passionate and highly experienced specialist **Chemical Engineers & Fibreglass Technicians** with many years of experience between us.



OUR SERVICES

- ▶ Industrial Fibreglass design & supply, standard or customised.
- ▶ In-house Engineering & Design
- ▶ Commissioning & Operational Support
- ▶ Maintenance & Repair of FRP equipment
- ▶ Inspection & Modification of FRP equipment
- ▶ Research & Development assistance

OUR PRODUCTS

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SEWER ODOURS

H₂S

VOCs

MERCAPTAN

DMS

DMDS

BIOLOGICAL SCRUBBERS (BTfs)

armatec.co.nz/biological-scrubbers

For efficient removal of H₂S, VOCs and other odours from air streams using controlled biological activity.

- ▶ Lower operating costs, compact footprint, proven performance, simple operation, no hidden operating costs & extensible.
- ▶ Tower, low profile, and modular systems available to suit site requirements and area available.
- ▶ Used in Wastewater treatment plants, Pumping stations, Rendering plants, Pulp & Paper plants, Food processing plants.
- ▶ Pilot Plant available on request.

CARBON BED ADSORBERS

armatec.co.nz/carbon-bed-adsorbers

For removing volatile gases and odours from air streams.

- ▶ Ideal when concentrations are low, and the air volume is relatively large, using activated carbon.
- ▶ Used for removing H₂S from sewer gases, odour control, solvent recovery, air purification and as final stage after a wet scrubber or biological scrubber.
- ▶ Tower, low profile, and modular systems available to suit site requirements and area available.
- ▶ Can be factory fitted with Plug and Play capability to minimise site work.
- ▶ Trial or hire units available on request.

SEWER ODOURS

H₂S

VOCs

MERCAPTAN

DMS

DMDS





MICROSCRUBBERS

armatec.co.nz/products

Multi-staged biological scrubber and activated carbon bed for turn-key odour control systems.

- ▶ Main photo features 2-stage BTF plus carbon bed for >99% removal of medium to high odour loads.
- ▶ Multi-stage modular units are compact, low profile, simple to specify, ship, install and operate.
- ▶ Safe and secure installation. Appropriate for residential environment.
- ▶ Smaller systems are factory built and commissioned ready for use. Larger systems are built in flanged sections, shipped in standard containers, site erected and internal joints sealed with fibreglass at site.
- ▶ First modular unit fabricated in 1989 to minimise freight costs. Modular designs ideal for meeting site height restrictions.
- ▶ Modified or underground Biological and Activated Carbon systems available to suit any space or streetscape requirement.



GREEN DOME ODOUR FILTERS

armatec.co.nz/green-dome-odour-filters

Passive and Active filters to eliminate sewage odours from pump stations, air release valves, tanks & more.

- ▶ A key component of a no-odour sewerage network.
- ▶ Passive units require no power, acting as breathers.
- ▶ Active units include fan to remove corrosive gases from sewers.
- ▶ Both have purpose designed carbon bed absorbers for removing odours such as hydrogen sulphide (H₂S) and volatile gases (VOCs).
- ▶ Low-profile, sleek, damage-resistant and effective.
- ▶ Complete with dipstick to monitor carbon usage and plan for replacement.

SEWER ODOURS

H₂S

VOCs

MERCAPTAN

DMS

DMDS

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DISTRIBUTED IN
AUSTRALIA BY:

xylem
Let's Solve Water



ALL FIBREGLASS PUMP STATIONS & VALVE CHAMBERS

armatec.co.nz/pump-stations

Corrosion resistant, custom-designed fibreglass pre-assembled packaged units ready to install.

- ▶ Guaranteed leak-free. Reduced site time, simple installation. Factory fitted with all inlet and outlet connections, outlet piping, pump rails, valves, etc as required.
- ▶ Minimises site work, multiple subcontractors, and confined space entry. Installation can be done in less than one day.
- ▶ Matching all fibreglass valve chambers factory fitted with valves and piping to suit.
- ▶ Use with Green Dome Odour Filters for odour-free installations.



PROUD PARTNERS
IN NZ WITH:

xylem
Let's Solve Water

SLIMLINE GREEN DOME ODOUR FILTER

armatec.co.nz/green-dome-odour-filters

Odour control optimized for tight street-scape spaces, in a variety of options including passive, active and above-ground ARV installations.

- ▶ ARV system contains both ARV and Carbon Unit in single cover, that allows for good access for inspection and maintenance work. ARV is protected from corrosion, and wastewater leaks contained and stored. Fittings available to suit ARV.
- ▶ Elongated 'slimline' rectangular design for neat fit in tight spaces, with all the same benefits of traditional circular Green Domes
- ▶ Comes with first batch of Carbon and dipstick.
- ▶ Simple & flexible installation procedure.





VOID TOWERS FOR SSP PLANTS FLUORIDE EMISSIONS

armatec.co.nz/void-tower-scrubbers

Systems with proven ability in achieving low fluoride emission limit regulations

- ▶ High performance void tower scrubbers highly engineered to achieve ultra low fluoride limits.
- ▶ Systems designed to handle silica deposition that occurs.
- ▶ Ensures air emission limits are able to be met with surety, while the plant maximises production.
- ▶ Achieves fluoride emission of less than 5mgF/m^3 .
- ▶ "The Armatec scrubbers handle everything we throw at them", said one plant engineer.



PROUD PARTNERS WITH



SIEVE TRAYS, VENTURIS, WET CYCLONES, STRIPPERS

Specialist high-efficiency removal of solid and liquid particulates from gas streams. Strippers remove gases from liquids.

- ▶ Equipment selection depends on the details of application.
- ▶ Venturi, multi-throat venturis, and cyclone separators used in chemical plants, galvanising, pulp & paper, particle board & food processing.
- ▶ Strippers used to remove carbon dioxide and hydrogen sulphide from water to reduce corrosion and odour.
- ▶ Designs selected utilising the vast international expertise of Verantis of USA.



PROUD PARTNERS WITH



ALL ARMATEC PACKED
BED WET SCRUBBERS
ARE MADE UNDER
LICENSE TO VERANTIS

AMMONIA

CHLORINE

SO₂

CHEMICAL SCRUBBERS

armatec.co.nz/wet-packed-scrubbers

For high-efficiency removal of corrosive, noxious and odorous gases and particulates.

- ▶ High collection efficiency with Tellerette Tower Packings.
- ▶ Traditional vertical counter-current scrubbers and horizontal crossflow scrubbers to suit site requirements.
- ▶ High efficiency mist eliminators to remove droplets from discharge.
- ▶ Used in industry such as chemical plants, waste water treatment, rendering, tanneries, pulp & paper, particle board & food processing.
- ▶ Pilot Plants available on request.



PROUD PARTNERS WITH



ALL ARMATEC PACKED
BED WET SCRUBBERS
ARE MADE UNDER
LICENSE TO VERANTIS

MIST ELIMINATORS & AIR WASHERS

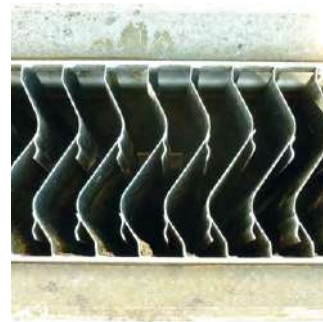
armatec.co.nz/mist-eliminators

Range includes Kimre knitted mesh pads, Chevron curved blades, and packed beds.

- ▶ Removes liquid particulate and mists from air discharges to meet specific criteria.
- ▶ Low pressure drop systems.
- ▶ Choice of equipment depends on source of mist, liquid droplet sizing, mist loading, and particulate loading if any.
- ▶ Minimal usage of water resources.

ACID MISTS

 **armatec**
ENVIRONMENTAL





FIBREGLASS DUCTING

armatec.co.nz/fibreglass-ducting

For use on corrosive, odorous, noxious and acidic gas streams.

- ▶ High quality, complete range of elbows, flanges, dampers, tees, wyes, branches, plenums and more.
- ▶ Factory spooled to speed site installation. Standard site jointing is 'butt and strap' joints for leak-free completion.
- ▶ Duct sizes from 100mm to 1800mm in diameter plus with capacities to more than 30 cubic metres per second.
- ▶ All engineering advice provided in-house for optimal design. Fabricated directly from plans in made-to-order approach for a perfect fit.



FIBREGLASS FANS

armatec.co.nz/fibreglass-fans

For use on corrosive, odorous, noxious and acidic gas streams.

- ▶ Rugged, high-efficiency, low-noise, low-maintenance centrifugal and axial fans made under license to Verantis – world leaders in air pollution control technologies.
- ▶ Backward curved CLUB range for highest efficiency. Straight bladed CMHP fans for highest degree of self cleaning. Forward curved CH and CMHR fans for higher pressures.
- ▶ Fans are available in sizes from 100mm to 1800mm in diameter with capacities ranging from 0.2 to 50 cubic metres per second at static pressures to over 760mm water gauge.



PROUD PARTNERS WITH



ALL ARMATEC FRP FANS ARE MADE UNDER LICENSE TO VERANTIS – WORLD LEADERS IN FANS



STORAGE TANKS - WASTEWATER

armatec.co.nz/horizontal-surge-tanks

Fibreglass storage tanks for handling surges of wastewater during high flow events.

- ▶ Fully reinforced and ribbed for buried installation.
- ▶ Complete with manhole risers, pipe connections, etc.
- ▶ Often supplied in conjunction with all fibreglass packaged pump stations and valve chambers.
- ▶ Corrosion resistant inside and outside for long life.



FIBREGLASS TANK COVERS & HOODS

armatec.co.nz/fibreglass-covers

To contain and collect off-gases from tanks, sumps, conveyors & more.

- ▶ Fibreglass covers are ideal as corrosion resistant and light weight. Wide range of designs available to suit every application.
- ▶ Span unsupported or with central support beam. Integrated stiffening, nonslip flooring & safety rails, colour coding. Main photo to right shows 12 metre diameter walkable cover with no central support.
- ▶ Segmented barrel vault designs (non-walkable) for large diameter round tanks.
- ▶ Used in wastewater treatment, pulp and paper, fertiliser works, food industry, rendering plants, metal treatment.





STACKS, SILENCERS & DIFFUSERS

armatec.co.nz/stacks-chimneys-diffusers

Custom designed and built to meet specific site requirements.

- ▶ Fibreglass is light in weight and corrosion resistant inside and outside, making it ideal for stacks as the final discharge for an air pollution control project.
- ▶ Top nozzle fitted to achieve efflux velocity, or a diffuser can be fitted to enhance initial dispersion.
- ▶ Silencers are fitted between the fan and stack to dampen transmitted noise.
- ▶ Acoustic attenuation can also be added to fans and over fan motor to minimise noise at boundary.



FRP CHEMICAL STORAGE TANKS

armatec.co.nz/fibreglass-tanks

Full range of fibreglass tanks including for above ground chemical storage.

- ▶ Contact moulded for maximum chemical resistance in most demanding of chemical service.
- ▶ Designed and manufactured in premium resins to international standards.
- ▶ Fully designed and manufactured to handle seismic events.
- ▶ Full range of accessories such as accessways, nozzles, lifting lugs, hold-down systems, ladders, handrails as required.





MANHOLES, SUMPS & FLUMES

armatec.co.nz/fibreglass-manholes-sumps

Light weight fibreglass units are ideal for corrosive wastewater.

- ▶ Main photo shows flume with integral manhole – installed in a single day.
- ▶ All designs to suit site requirements. Ideal in difficult to access sites.
- ▶ Used in geothermal areas to resist corrosion and high ground temperatures.
- ▶ Lid styles to suit site. A popular design is to have a riser that is cut to final height after installation.
- ▶ Special high grade resins used for dairy and chemical applications.



COATINGS, LININGS & EPOXY GROUT

armatec.co.nz/coatings-linings

Full range of heavy duty fibreglass coatings and linings to protect concrete and steel tanks and bunds from corrosive chemicals.

- ▶ Using premium resins for maximum chemical resistance in most demanding of chemical service.
- ▶ Typically glass reinforced for maximum strength and durability.
- ▶ Includes Armaline® range of moisture tolerant epoxy coatings, ideal for wastewater applications. For when it is difficult to thoroughly dry the substrate, or for short shut downs.
- ▶ Epoxy foundation grout for anchoring critical machinery. Flowable to suit site needs.

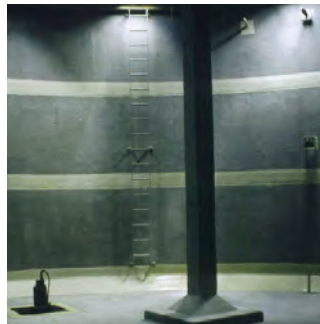
WASTEWATER

H₂S

ACIDS

ALKALIS

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FRP PIPING FOR CHEMICAL DRAIN SYSTEMS

armatec.co.nz/fibreglass-piping

Complete fibreglass drainage systems including piping, fittings, traps & more.

- ▶ Fibreglass manufactured by the traditional contact moulding process using premium resins for maximum chemical resistance.
- ▶ Corrosion resistant inside and outside gives long service life. Buried pipes made to required pipe stiffness – typically SN5000.
- ▶ Factory spooled as required to speed site installation.
- ▶ Used in wastewater treatment plants, pulp and paper plants, dairy factories, fertiliser works, etc.
- ▶ Also WhispaPipe for noise insulated wet marine exhaust tubing for diesel engines.



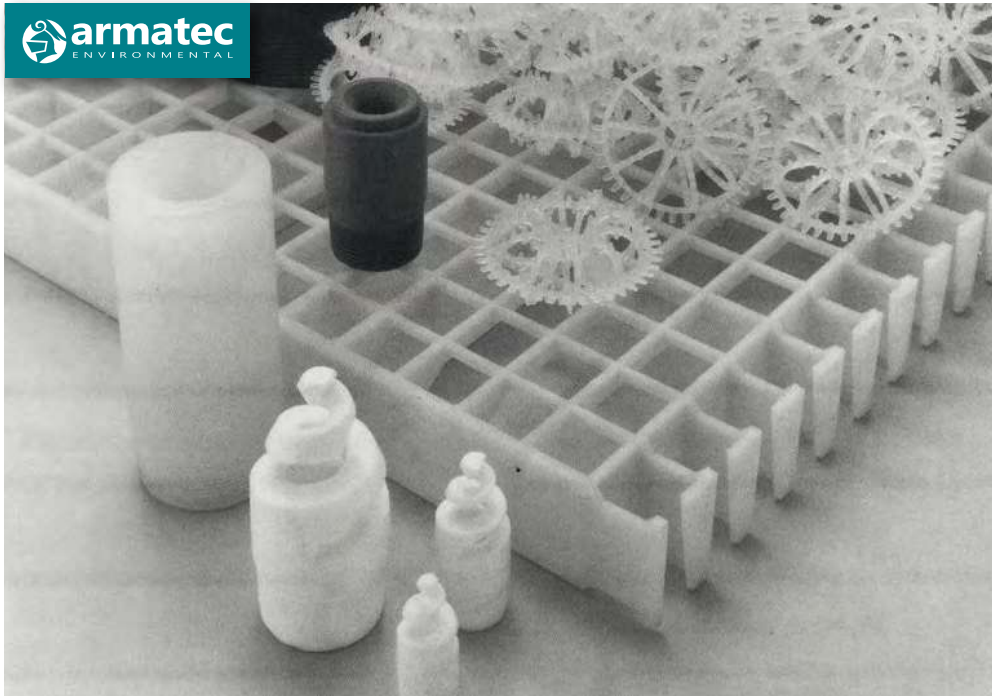
VORTEX DROPPER FORMERS & FRP LINERS

armatec.co.nz/vortex-dropper-formers

Light weight fibreglass units are ideal for corrosive wastewater.

- ▶ Main photo shows all fibreglass vortex dropper former being positioned ready for external reinforcing with concrete. Internal surfaces have abrasion resistant lining for long life.
- ▶ FRP Liners are used to rehabilitate corroded pump stations and manholes. A pre-made fibreglass liner is lowered inside the deteriorated unit, pipework made off, then the annulus between the fibreglass and the concrete is grouted.
- ▶ Both result in a robust long life fibreglass surface with wastewater.





SCRUBBER INTERNALS, PILOT PLANTS & SITE SERVICES

Full range of services from scrubber internals to pilot plants, to site installation, commissioning, optimisation and condition monitoring.

- ▶ High performance Tellerette® tower packings plus nozzles, etc.
- ▶ Pilot plants, commissioning and optimisation studies for scrubbers.
- ▶ Condition monitoring of fibreglass.
- ▶ Instrument rental – Acrulogs for hydrogen sulphide in PPM and PPB ranges.
- ▶ Site surveys of target gases such as hydrogen sulphide and fluorides.



TURBULENT MICRO HYDRO POWER

armatec.co.nz/turbulent

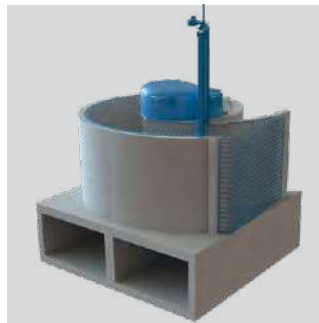
Elegant low impact, high efficiency turbines

- ▶ High plant factors (frequently exceeding 90%) & low maintenance requirements.
- ▶ Low complexity, decentralised power solution without dams.
- ▶ Low RPM vortex facilitating safe fish passage & flood-proof design.
- ▶ Retrofits to existing infrastructure, or river site from 1m drop.
- ▶ Water infrastructure networks & hydroelectrical plants through to Pāpakainga & Marae.
- ▶ Stable predictable power generation day & night without the need for a battery bank, sun or wind.

IN COLLABORATION WITH:



Ngāti Tāwhirikura Hapū



Working with industry and local authorities to reduce emissions to the environment

NEW ZEALAND | AUSTRALIA | EGYPT | MIDDLE EAST | UK



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