

Valve Services and Actuators

Petrotec offers a comprehensive range of specialised valve maintenance services. We provide solutions for repair, retrofit and overhaul of electric, hydraulic and pneumatic actuated valves.

Strengths

- Steel line test bays with safety door interlocks, CCTV system, and ballistic glass viewing panel are designed for pressure testing up to 30,000 psi.
- Standalone PSV testing equipment for all sizes and types of PSV including vacuum breather valves.
- purpose built test set-up for certifying control and manual valves.
- Oxygen service equipment clean room (ISO 6 Classification) for maintenance, and cleaning of O2 service valves and associated equipment in a controlled environment.
- Clean room size: 160 m².
- Lifting capacity: main workshop - 20 tonnes, inside the test bays: 5 tonnes.
- OEM trained and certified engineers and technicians.
- Specialised welding services with approved WPS, PQR.

On-site service capabilities for both onshore and offshore

- ATEX certified mobile workshops, suitable for use in Zone II classified hazardous areas, offering clients greater flexibility to have repairs carried out at site, minimising turnaround time.
- In-situ overhauling of high pressure welded gate valves including lapping services.
- Onsite control valves smart positioner upgrade solutions.

Complete valve asset management

- Complete valve asset management package available, including RBI analysis, maintenance scheduling and inventory control.

OEM approved service centre

- BHGE MARC (Masoneilan Approved Repair Centre) for control valves.
- BHGE GTC (Green Tag Centre) for safety valves.
- Masterflo choke valves.
- Rotork for MOV, Pneumatic, EH actuators.



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Hydraulics

Services

- Repair of hydraulic components including pumps, motors, cylinders, valves, coolers and accumulators.
- Preventive maintenance of all hydraulic components.
- Replacement and supply of spare parts for hydraulic components.
- Engineering, design and supply of hydraulic systems (e.g. control panels and power packs).
- Supply of high pressure hoses and fittings.
- Support in installation of new hydraulic equipment.
- Modification of existing hydraulic equipment.
- Design and installation of auto lube systems.
- Manufacturing of static seals (PU, rubber, teflon etc.) for cylinders and valves

Facilities

- Hydraulic test benches for motor, pump and cylinder testing up to 75kw with data acquisition.
- Dedicated hose proof test benches with fully interlocked test compartments
- Pressure test facility up to 4,000 bar (58,000 psi).
- Large inventory of premium hydraulic, industrial and metallic flexible hose and fittings.
- Hose crimping up to 6" diameter.
- OEM certified welding facility for stainless steel flexible hose assemblies.
- In house seal design and manufacture – high performance CNC machine system for seals up to 520mm (20.5") in diameter.
- High quality raw materials for seal manufacture including polyurethane, elastomers and engineering plastics.

Wellhead control panels and hydraulic systems

- We have in-house capabilities to assist customers with the complete refurbishment of WHCP hydraulic systems. Our trained team of technicians are conversant with components from various manufacturers commonly used on this type of equipment e.g. Bifold Marshalsea, Dr. Breit, Versa, Ruelco, Sigma, etc.
- After repair, all components are tested and certified to OEM specifications. Besides WHCPs, we can also support with repair and testing of hydraulic power units, installation or work over control systems, accumulator packages, etc.



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Pump Service Centre

Petrotec's pump service centre offers repair, overhaul, retrofit and upgrades of API / Non-API pumps supported by OEM engineering.

Strengths

- 1,700m² fully-fledged workshop in Ras Laffan.
- Balancing machine up to 3,000 kgs.
- Centrifugal pump performance test loop.
- Machining capabilities including welding and hydro-testing.
- Shot blasting, painting and ceramic coating.
- Flowserve certified service centre
 - Including Byron Jackson submersible pumps.
- Pleuger certified pumps
 - Including non-Flowserve submersible pumps and motors.
- Repair of all OEM pumps and submersible pumps and motors.
- Training programs.
- Site work including laser alignment, commissioning, installation and removal.
- Condition monitoring / troubleshooting.
- Pump upgrades including hydraulic, mechanical and material upgrades as well as performance re-rates and technical assessments.
- 3D Scanning.

Cryogenic pumps and turbo expanders

- Petrotec are authorized agents for LEWA chemical dosing pumps. Our maintenance capabilities include the servicing of all dosing and metering pumps.
- Petrotec is a service partner for Cryostar SAS and provides a complete range of services for cryogenic facilities.



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FLOWERVE

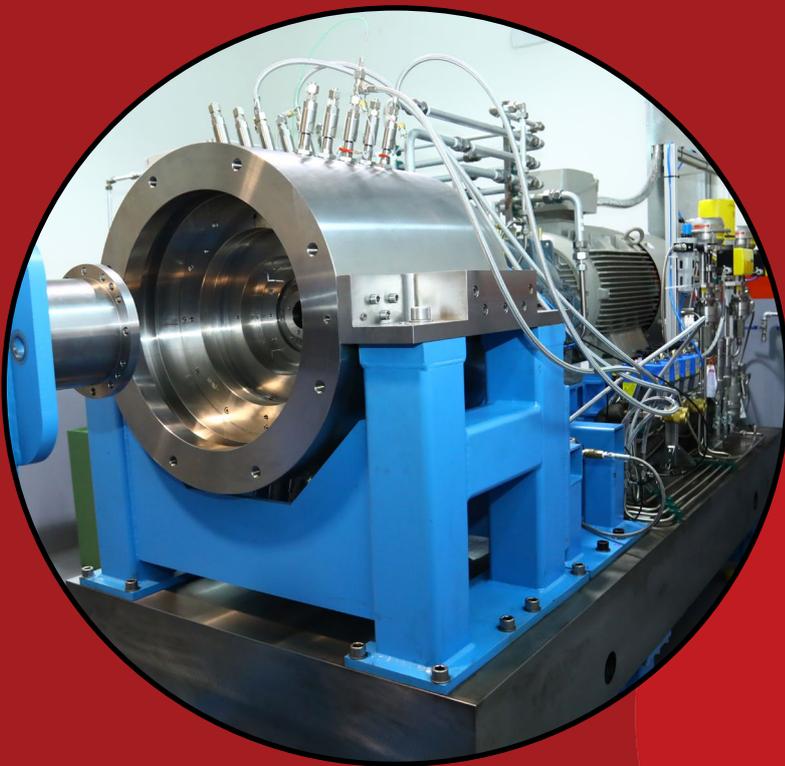
**AUTHORIZED
Distributor**

Petrotec  **پتروتك**

Mechanical and Dry Gas Seal Service Centre

Petrotec maintains an authorized mechanical seal repair facility in Qatar, incorporating a fast track workshop and fully certified and experienced engineers and technicians. This centre offers refurbishment, repair of static pressure testing of mechanical seals as well as testing of dry gas seals, plus a variety of asset management and reliability optimization services.

- 400 m² full-fledged authorized (Diamond certified by Flowserve) workshop.
- API test bench for mechanical seals testing.
- Dry gas seals dynamic tester up to ~300mm and up to 250 bar.
- Seals spares inventory.
- Inspection, repair and testing as per API 682 for all types of API and non-API mechanical seals as well as dry gas seals.
- On-site support for installation, commissioning and root cause analysis.
- Over 3,000 mechanical seals have been repaired since 2006.



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FLOWSERVE

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Petrotec  **پتروتك**

Total Purity Solutions

Oil Condition Monitoring

Ocean Team
Total Purity Solutions
A Petrotec Company

Petrotec Total Purity Solutions (Ocean Team Qatar) works with a partner laboratory certified under ISO 17025 to support different customers, offering oil analysis. Petrotec has a specialised and trained team performing the lube and transformer oil sampling as per customer request, both onshore and offshore, and recommend action plans based on oil sample reports.

Petrotec along with their partner laboratory, can provide oil analysis for:

Fluid condition:

- Viscosity
- Acid Numb
- Ruler
- Foam
- Varnish
- RPVOT

Contaminants:

- Water
- Particle count (ISO Code 4 μ , 6 μ , and 14 μ)
- Sodium
- Potassium
- Silicon
- Silver
- Lithium
- Aluminum

Additives:

- Boron
- Zinc
- Magnesium
- Molybdenum
- Barium
- Sulfur
- Phosphorus
- Calcium

Wear metals:

- Tin
- Lead
- Copper
- Vanadium
- Iron
- Chromium
- Molybdenum
- Nickel
- Manganese
- Titanium
- Cadmium
- Aluminum



Contamination Removal / Filtration

Petrotec provides different contamination solutions by using specialist filtration equipment such as:

- Online / Offline filtration skids for particles filtration.
- Water separation and dehydration unit for water removal.
- Varnish removal (soluble and insoluble) by using Electrophysical Separation Process (ESP) together with Boost VR (solubility enhancer).



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Petrotec  پترو تیک

Total Purity Solutions

Ocean Team
Total Purity Solutions
A Petrotec Company

Oil Flushing

Petrotec possesses the technical capabilities that allow them to perform oil flushing quicker than their competitors as well as meeting customer's requirements. Petrotec provides different oil flushing types such as:

- **Hot oil flushing:** Hot oil is circulated through associated systems at high velocity.
- **High velocity flushing:** An uninterrupted flushing using high flow flushing skids to pump oil through the piping at a specific flow rate to achieve the optimal Reynolds Number.
- **Pulsation flushing:** Exposing the flushing oil to pulses, caused by sudden but controlled compression, in order to create sound waves. This will generate an even higher Reynolds number in the pipe system, resulting in shorter flushing duration.

Oil Enhancement

Petrotec is the authorised distributor of Fluitec's products in Qatar since 2016. In order to reduce wasted oil, costs and to increase oil quality, Petrotec provides different "fill for life" solutions, such as:

BOOST AO

Boost AO is a proprietary technology created to replace depleted antioxidants in the oil - replenishing bad chemistry with good chemistry.

Infinity TO 32/46

Prolong the useful life of the turbine oil and also extend indefinitely the life of the machine, by preventing varnish and deposits formation.

DECON™

A patent pending technology to eliminate deposits from systems.

- Efficient cleaning of lube oil systems between fluid changes.
- Quickly and safely dissolves organic deposits from machine internals.
- Enhances deposit control performance of in-service fluids.
- Long term system protection against deposit, sludge and varnish.

FLUSHING IN HALF THE TIME

 **Boost AO**

 **Infinity TO**
THE LAST TURBINE OIL YOU'LL EVER NEED

 **DECON**

 **Boost VR**



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Petrotec  **پتروٹک**

Total Purity Solutions

Ocean Team
Total Purity Solutions
A Petrotec Company

Offshore Chemical Cleaning

Petrotec has developed equipment, methods and technologies that efficiently clean a wide variety of systems, including produced water, closed cooling water, seawater cooling, flow lines, drains, pipes, vessels, coolers, heat exchangers, wellhead X-trees etc.

- On-line cleaning technology.
- A controlled process based on meticulous measurement of the contamination type.
- Preservation of pipes and equipment.
- Dosing and injection services.

Pressure Vessel Cleaning

Petrotec has developed procedures and risk assessments for safe confined space entry cleaning of pressure vessels such as inlet separators, test separators, hazardous and non-hazardous drain tanks, etc.

- Our fleet of Ex-proof specialised equipment is suitable for offshore space limitations.
- Our workforce is well trained in confined space entry requirements and have extensive experience in offshore pressure vessel cleaning.



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Petrotec  پتروٹک

Qatar Calibration Services



A joint venture between Petrotec and Intertek Ltd., Qatar Calibration Services (Q-Cal) is accredited to ISO/IEC 17025:2005. Q-Cal's calibration laboratory is based in Ras Laffan and provides services in the laboratory or on site throughout Qatar. All activities are controlled by ISO 9001:2008, ISO 14001:2004 and ISO 45001:2018. Q-Cal offers the following services:

- Calibration services of electrical (DC and LF), temperature, pressure, torque, mass and dimensional parameters.
- High static calibration of DP transmitters using twin post DWT.
- Accredited calibration of orifice plates.
- Field calibration of instrumentation on metering skids.
- Onsite/Offshore calibration services.
- Calibration of portable gas detectors.
- Calibration of ultrasonic flow detectors.
- Three phase energy meter calibration.
- Flow calibration – flow meters using mastermeter/ultrasonic methods.
- Water draw calibration of compact/ bidirectional provers.
- Geometric survey/calibration of storage tanks.
- Performance evaluation of gas chromatographs.
- Certification (UKAS) of calibration gas mixtures and CEMS gases.
- Rental of multifunction calibrators.



ISO/IEC 17025:2005



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Petrotec  پترو تیک

Chemical Cleaning / Steam and Air Blowing Services

Solarca Qatar was formed in 2009 by a joint venture comprising Petrotec and Grupo Solarca (Spain). Solarca has its roots deeply embedded in the field of chemical cleaning and air and steam blowing, offering its expertise to various clients around the world.



Chemical cleaning

Solarca Qatar possesses the expertise of the parent company in terms of chemical cleaning and air and steam blowing and has managed to establish itself in Qatar as one of the leading companies that offer an in-depth and thorough solution to any chemical cleaning or decontamination requirement. Solarca Qatar offers chemical cleaning services to the following applications:

- Refinery and petrochemicals.
- Decontamination of process equipment.
- Pre-operational descaling.
- Combined cycle power plants.
- Thermal power stations.
- Thermosolar plants, concentrating solar power plants.
- On-line furnace cleaning.
- Tank chemical cleaning.



Steam and air blowing

Integrating SABSCO's knowhow on steam and air blowing services has put Solarca ahead of its competitors. Steam and air blowing are the process of removing oxide scales and construction debris. This process uses high velocity steam or air to mechanically remove the debris.

The three main methods used are:

- Silent steam blowing.
- Conventional steam blowing.
- Air blowing.



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Petrotec  بترولتك

Cranes and Elevators

Petrotec specialises in the supply, installation, commissioning and servicing of EOT cranes and industrial elevators, designed specifically for hazardous area environments. New EOT cranes can be tested in a FAT test rig up to 60 tons. We also offer complete maintenance services including the planning and implementation of preventive and corrective maintenance activities at client's site with a large team of OEM trained and certified CompEx engineers and technicians available on a 24 hours call out basis. We offer annual maintenance contract programmes (AMC).



Standard cranes and ATEX

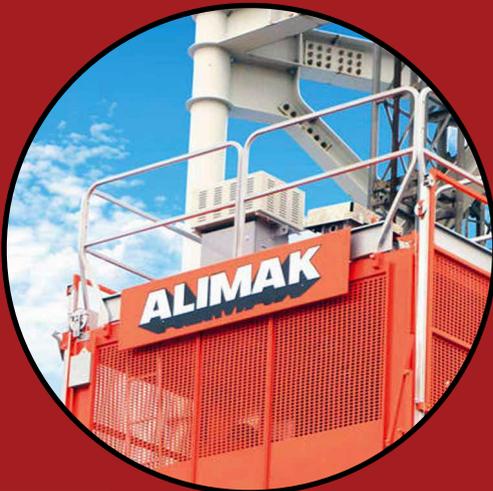
- Petrotec is the agent for STAHL crane systems in Qatar, which is a global leader in explosion protection. We provide the most comprehensive, complete programme of explosion protected lifting, drive and control technology.



Industrial lifts - rack and pinion

- Alimak rack and pinion lifts have been developed to withstand extreme conditions in the world's most hostile environments.
- Alimak SE-Ex lifts offer safe, efficient vertical transportation of personnel and materials on offshore platforms, telecom towers, LNG tanks and trains, cement plants and power stations.
- Petrotec provides supply, installation, commissioning, maintenance and spare parts for all Alimak industrial lifts.

ALIMAK



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Petrotec  پتروتك

CCU Rentals

Petrotec have partnered with Swire Oilfield Services which is the world's largest supplier of specialist offshore cargo carrying units to the global energy industry. Large rental fleet of DNV 2.7.1 certified CCUs is available for short term or long term leasing from our facility in Ras Laffan. The fleet includes:



- **Cargo Carrying Units**

These units are stackable which reduces the lay down area. They come with optional nets and custom cradles (which enhances the security of high value cargo).

- **Heli Fuel Tanks**

The logistics of offshore personnel relies heavily on helicopter operations. The reliability of this operation depends on the reliable source of JET A - 1 fuel.

- **Mini Containers**

Used for the transportation of smaller goods and specifically ideal for palletised chemicals and IBC chemical carriage.

- **Chemical Storage**

We have a wide range of high quality offshore tanks that conform to all the industry standards.

- **Open Top Containers**

Ideal for the transportation of equipment that require loading by cranes or forklifts.

- **Mud Skips**

The skips are designed to allow the safe containment and transportation of drill cuttings to treatment or disposal sites.

Offshore Aviation Services

- **Friction testing for helidecks**

Helideck surface friction testing using micro GripTester provides a cost effective, and dynamic solution that is compliant with CAA regulations.

- **Helifuel systems**

Supply and maintenance of Helifuel systems.



SWIRE



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Petrotec  پتروتك

HVAC and Refrigeration Engineering

Petrotec have partnered with HVAC & Refrigeration Engineering Ltd (HVAC), which is an international provider of heating, ventilation, air conditioning and refrigeration solutions to the oil and gas, marine and petrochemical industries.

With over 50 years' experience, HVAC's engineers and technicians ensure HVAC and refrigeration systems operate correctly, efficiently and meet ever-changing industry legislation. From design concept and system build to installation and commissioning, we ensure the comfort and safety of our customer's personnel while prolonging the life of their equipment.

Project management

- HVAC's design and project management services include engineering, procurement, installation and commissioning of all types of HVAC projects from small upgrades to large scale installations.

Oil and gas products

- Our facility tested Hazcool and Climarine products offer engineered solutions for environmental challenges, including marine, flammable and exploding areas.

Maintenance and repair

- HVAC's repair, audit, inspection and maintenance services provide reactive and dedicated campaign maintenance as well as integrity management to monitor system performance and avoid costly downtime or replacement.

Commissioning and re-balancing

- The services division of HVAC has the experience and competence to ensure that our clients' systems are functioning correctly.

Equipment and spares

- HVAC provides fans, spares and other equipment from Carrier Transicold, York, Bitzer and more. Also available is a range of ATEX mobile and temporary air conditioning units for hire.



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Petrotec  بترولتك

Pressure Vessels and Heat Transfer

Petrotec can provide complete workshop and in-situ support for a wide range of heat exchangers including the following:

Shell and tube heat exchangers / coolers

- Servicing and pressure testing.
- Plugging of leaking tubes.
- Re-tubing.
- Refurbishment.
- Modification and manufacturing of heat exchangers.
- Chemical cleaning.

Plate heat exchangers

- Servicing and testing of plate heat exchangers.
- Re-gasketing.
- Chemical cleaning.

Air cooled heat exchangers (fin fan coolers)

- Manufacturing and servicing of fin-fan coolers.
- Chemical cleaning.

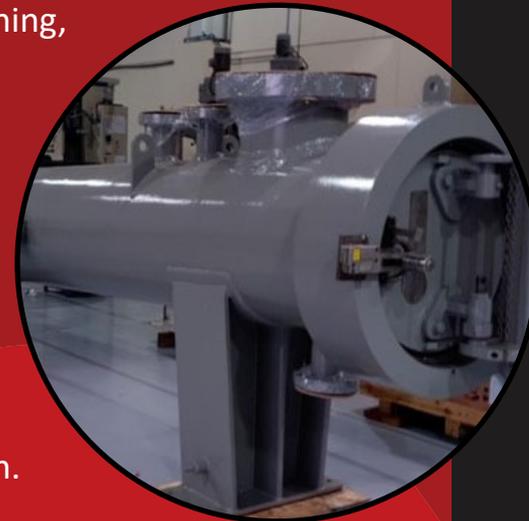
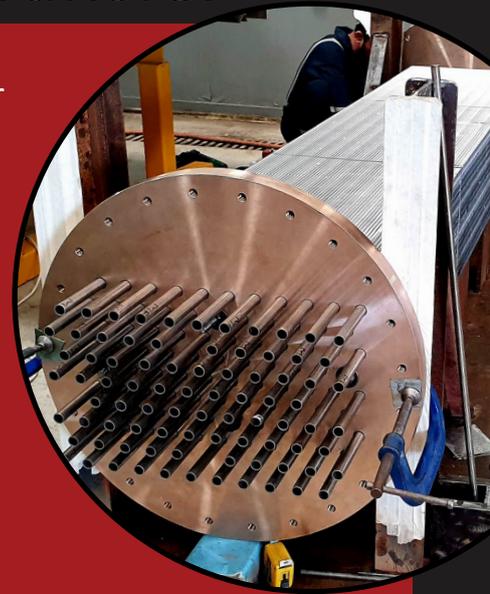
PIG launcher

- Complete refurbishment including weld build-up, machining, internal ceramic coating, and pressure testing.
- Cladding on nozzels, inlet / outlet ports.

Applications:

- Power stations.
- Oil and gas.
- Marine applications.
- Factories.

ASME "U" and "R" certified workshop located in Ras Laffan.



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On-Site Services

Hydro-Jetting

Petrotec is able to provide high and ultra-high pressure water jetting pump units up to 40,000 psi, utilising the latest hydro-blasting technology and tools available. In order to respond to our clients quickly, our units are skid mounted and TPI certified. All our technicians are extensively trained on safe operating procedures and environmental responsibility, capable of providing solutions that are customised to the client's requirement such as:

- Surface preparation
- Exchanger tubes
- Concrete demolition
- Internal and external coatings removal
- Chute cleaning
- Drill pipe cleaning

Hydro Milling

High pressure water jetting service incorporating a bi-directional hydraulically operated feeder into pipelines ranging between 2" and 50" dia. This allows for thorough cleaning of complex vertical and horizontal pipework, up to lengths of 380m horizontal and 100m vertical pipelines.

Leak Sealing

- Petrotec provides complete engineering solutions for leaking pipeworks across all industries, which includes fitting of ring clamps and box enclosures.
- Petrotec in partnership with Petroseal France, stock high temperature sealants (up to 700°C) in country for emergency response.
- All of the ring clamps and box enclosures are manufactured locally in Qatar.
- Our sealing compounds are suitable for various process lines such as steam, water, gases, hydrocarbon gases / liquids, and acids.

Spark Erosion

- Petrotec's state of the art spark erosion technology is the fastest and safest method to remove seized stud bolts, keyways etc. without damaging the equipment.
- Our solutions cover sizes ranging from M12 up to 5" and different material specifications.

Online Testing of Pressure Relief Valves

Petrotec specialised site team offers online testing/calibration/certification for a wide range of conventional pressure relief valves.



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Coatings

Petrotec is the local service partner for Chesterton. Petrotec's coating solutions protect a substrate from a variety of environmental problems such as corrosion of solder joints, moisture and mildew, fuels and process solvents, service temperatures and dust, dirt and physical damage from handling.

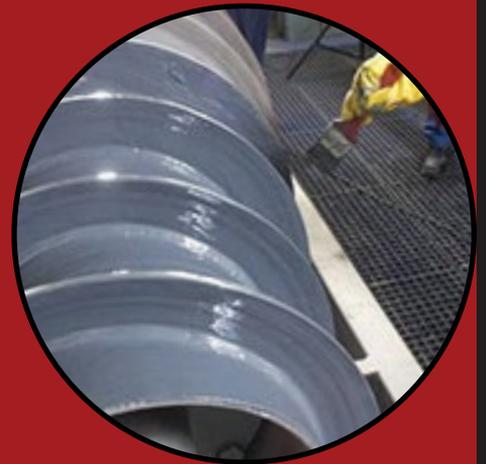
Chesterton

Chesterton composite material systems serve as the first line of defense against erosion, corrosion, abrasion and chemical attack.

- Epoxy composite suitable for erosion/corrosion exposures in dilute acids and caustics.
- Immersion lining for harsh acidic exposures and extremely low permeation rates.
- Ceramic Epoxy wear composite for light-to-moderate abrasive applications.
- Erosion resistance against flow-induced corrosion.
- High temperature erosion/corrosion composite.
- Low permeability in aqueous solutions.
- Rebuilding and fairing grade material and anti-slung for vertical sag resistance.

Typical applications:

- Pipelines.
- Pumps.
- Motors.
- Valves.
- Heat exchanger-tube sheets.
- Floating roofs.



Training

Petrotec offers a wide range of specialised and technical training packages in our training facility in Doha. The practical and theoretical courses are designed specifically to develop and enhance the skills and performance of people in the hydrocarbon and related sectors.

Our training courses are delivered by some of the most respected and highly certified trainers in the field. By offering public and tailored courses, we meet the exact needs of the world's leading energy companies.

Our training courses include:

Electrical

- CompEx electrical modules EX01- EX04, CompEx foundation and Ex-awareness.
- Rotork controls.

Instrumentation

- Rotork Fluid System (fluid power actuators).
- Bentley Nevada.
- Beamex.

Mechanical

- CompEx Mechanical EX11 (training and assessment).
- Alimak (lifting equipment).
- Flowserve (pump and seal equipment).

Safety

- IOSH (working and managing safely).

CompEx

- Petrotec are the only CompEx approved competency validation centre in Qatar.
- CompEx is the global solution for competency validation and certification for electro technical and mechanical craftsperson's working in potentially hazardous or explosive atmospheres.



CompEx



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