



CORROSION TECHNOLOGY SERVICES

Asia | Caspian | Europe | Middle East | North Africa | United Kingdom



INDUSTRIAL



CONCRETE



OFFSHORE

COMPANY PROFILE



Who We Are

The CTS Group has over four decades of experience in some of the world's most aggressive environments. With offices in eight countries and three geographic regions CTS is recognized as one of the world's leading cathodic protection companies.

CTS' strength lies in its engineering and production facilities. CTS employ approximately 140 staff across three continents; with over 70 NACE or ICORR qualified engineers, nobody is better positioned to assist with your cathodic protection and corrosion needs.

The CTS Group is a market leader in the provision of corrosion prevention solutions particularly focused on cathodic protection in the following industries:

- Oil & Gas
- Utilities
- Civil Infrastructure

CTS can provide consultancy services, design surveys, specialized site / field surveys, material supply, design services, installation supervision,

interaction testing and commissioning, monitoring and fault finding activities of cathodic protection systems. We also specialise in condition assesment for civil structures and design of remote monitoring and control system and networks.

CTS manufacture a wide range of equipment in-house including power supplies and remote monitoring and control systems. We have manufacturing or distribution centers in the following countries:

- Bahrain
- Kingdom of Saudi Arabia
- United Arab Emirates
- United Kingdom

The CTS Group is known for its contribution to the Corrosion Community, having been featured in Materials Performance Magazine, supporting international trade shows, exhibitions and supporting regional NACE events.



Our Mission Statement

CTS aspires for a leading global market position by delivering world-class engineering services, reinforcing world-wide corporate alliances, and upholding top-tier quality and ethical standards.

Our Quality

CTS provides high-quality engineering services to its global portfolio of clients. We are committed to a policy of quality assurance complying with ISO-9001, ISO 14000 and ISO 18001 and ensure that these policies are understood, implemented, and maintained throughout the Group.

Our scope of certification includes Site Surveys, Feasibility Studies, Audit, Design & Engineering, Material Supplies, Installation Supervision, Testing & Commissioning, Maintenance & Monitoring related to Cathodic Protection and Corrosion Prevention Systems

Our Vision

To deliver excellence and to be recognised internationally through:

- Building Robust Client Loyalty.
- Adopting Optimal Engineering Methodologies. Deliver superior value, flexible, cost-effective, and integrated engineering solutions in compliance with the latest design/construction international and local codes and standards across our complete range of services.
- Empowering Our Staff: Continually train and develop our staff to ensure they reach their full potential and deliver the best service for all our clients.

Accreditations

CTS support the following organisations.





Industrial Cathodic Protection

The CTS Group has been actively engaged in design and consultancy services, installation, supervision and maintenance surveys, temporary cathodic protection / sacrificial cathodic protection and permanent cathodic protection / impressed current cathodic protection.



Industrial Complexes

- Underground Piping
- Storage Tanks and vessels
- Reinforced concrete structures and foundations
- Water Screening Equipment
- Internal Corrosion
- Coating Inspection



Pipelines

- Transmission Pipelines
- Distribution & Gathering Networks
- Pre-stressed concrete cylinders pipe



Oil & Gas Production

- Refineries
- Bulk Handling Plants
- Well Casings
- Flowlines
- GOSPS



Power Plants

- Underground Piping Networks
- Condensers & Waterboxes
- Cooling Water & Pipelines Internal
- Storage Tanks
- Intake pumps and screens
- Reinforced concrete structures and foundations



Specialist Pipeline Surveys

CTS Group has surveyed thousands of kilometres of pipeline across hundreds of sites from deserts to mountains. We can conduct pipeline condition surveys using a range of techniques including:

- Close Interval Potential Surveys (CIPS)
- Direct Current Voltage Gradient survey (DCVG)
- Coating evaluation by Pipeline Current Mapping (PCM)
- Soil analysis and SRB testing
- Stress Concentration Tomography (SCT) pipeline inspection

Design & Consultancy Services

CTS engineers have carried out FEED studies and consultancy services on major projects, including:

- Pipelines
- Well casings
- Tank farms
- Corrosion assessment of reinforced concrete structures
- AC Mitigation Studies
- Corrosion and condition assesment for reinforced concrete structures.
- Specifications production for the cathodic protection of reinforced concrete structures

CTS are licensees of Safe Engineering Systems (SES) Right of Way Pro TM software which is used for modelling induced AC voltages on pipelines close to high voltage power lines.

CTS work closely with UK Computer modelling specialists BEASY who can provide predictions on current and potential distribution as well as predicting interference with impressed current cathodic protection systems.



Cathodic Protection of Steel in Concrete

The corrosion engineers of CTS are amongst the world's leading experts in the field of Cathodic Protection to both new and existing steel reinforced concrete structures. CTS also possess unrivalled expertise in the field of condition surveys, potential mapping and corrosion rate studies, design and specification services, materials supply, installation supervision, commissioning and maintenance of cathodic protection systems for all types of steel reinforced concrete structures.

These services have been successfully implemented on a wide range of structures, including:

- Power Plants
- Seawater Cooling Structures
- Pre-stressed Cylinder Concrete Pipelines
- Bridges
- Docks & Jetties
- Piling
- Prestigious Buildings
- Foundations
- Caissons
- Canals

Condition Assessment of Reinforced Concrete Structures

CTS has conducted Condition Assessment of many types of Reinforced Concrete Structures. We are able to report current condition and determine future corrosion risk. We are usually able to determine the root cause of corrosion and are able to support structure owners and contractors in durability disputes.

Example of the structures investigated are:

- Leaking basements for building and towers
- Concrete cooling towers
- Intake and Discharge Structures
- Car Parks
- Bridges and Civil Infrastructure
- Concrete canals
- Jetties and Berths

In order to undertake the condition assessment we employ the following techniques.

- Crack and delamination mapping
- Potential mapping
- Chloride content analysis and profiling
- Corrosion Rate measurement using Linear Polarisation Resistance
- Concrete Resistivity
- Petrographic analysis

We have expertise in analysing the data as a whole and do not simply report results.

TR Cabinet	Channel	Zone	Design Current A	Anode Capacity A	Channel Setpoints			Channel Output			RE Potentials mV								Date/Time	Status
					Current A	Voltage V	Control Mode	Current A	Voltage V	Operating Current Density mA/m ²	RE1	RE2	RE3	RE4	RE5	RE6	RE7	RE8		
F1-1	F1-1-Z1	F1-1-Z1	3.00	4.00	1.00	10.00	I	1.00	0.75	3.33	-216	-251	-272	na	na	na	na	na	2015-04-19 12:27:53	OK
F1-1	F1-1-Z2	F1-1-Z2	3.00	4.00	1.00	12.00	I	0.99	5.04	3.30	-449	-208	-247	na	na	na	na	na	2015-04-19 12:28:00	OK
F1-1	F1-1-Z9	F1-1-Z9	3.00	4.00	0.05	12.00	I	0.05	7.16	0.17	-369	-289	-259	na	na	na	na	na	2015-04-19 12:32:07	OK
F1-2	F1-2-Z2	F1-2-Z2	4.00	5.00	1.00	12.00	I	2.00	2.56	5.00	-201	-212	-283	na	na	na	na	na	2015-04-19 12:25:00	OK
F1-2	F1-2-Z4	F1-2-Z4	4.00	5.00	1.00	12.00	I	2.00	2.92	5.00	-122	-107	-170	na	na	na	na	na	2015-04-19 12:25:00	OK
F1-2	F1-2-Z10	F1-2-Z10	4.00	5.00	1.00	12.00	I	2.00	4.97	5.00	-302	-179	1	na	na	na	na	na	2015-04-19 12:25:00	OK
F1-3	F1-3-Z8	F1-3-Z8	3.00	4.00	1.00	12.00	I	2.00	1.61	6.67	-191	-81	-145	na	na	na	na	na	2015-04-19 12:25:00	OK
F1-3	F1-3-Z7	F1-3-Z7	3.00	4.00	1.00	12.00	I	2.00	1.97	6.67	-214	-237	-100	na	na	na	na	na	2015-04-19 12:25:00	OK
F1-3	F1-3-Z11	F1-3-Z11	3.00	4.00	1.00	12.00	I	2.00	9.15	6.67	-229	-166	-222	na	na	na	na	na	2015-04-19 12:25:00	OK
F1-4	F1-4-Z6	F1-4-Z6	4.00	5.00	1.00	12.00	I	2.00	1.64	5.00	-169	-82	-92	na	na	na	na	na	2015-04-19 12:25:00	OK
F1-4	F1-4-Z8	F1-4-Z8	4.00	5.00	1.00	12.00	I	2.00	2.33	5.00	-97	-186	-128	na	na	na	na	na	2015-04-19 12:25:00	OK
F1-4	F1-4-Z12	F1-4-Z12	5.00	6.00	1.00	12.00	I	2.00	8.74	4.00	194	-163	-136	na	na	na	na	na	2015-04-19 12:25:00	OK

Remote Monitoring and Control

Remote monitoring and control have become an important aspect of our business. We have worked with most of the suppliers of remote monitor/control equipment and understand the differences and advantages of different systems.

We have undertaken design and supply of many complex systems incorporating thousands of remote monitoring devices many of which also incorporate remote control.

We have worked with software and hardware suppliers to develop cathodic protection software packages that give our clients the tools they need to best monitor and operate their CP systems. We use a variety of networking options to enable access the CP systems via RS485, Ethernet, GMS, or Satellite communications.

Where clients do not want any external access we can provide standalone monitoring/control or facility only intranet access. Where clients want global access we can provide internet access, alarm emails and SMS text messaging.

Our experience in remote monitoring and control have made us wary of supplying systems that are rapidly overtaken by software platform advances (e.g. where systems only run certain versions of Windows etc.) and are able to advise our clients on how to overcome these issues.

The advantage of remote monitoring and control are as follows.

- **Safety** - Less miles covered by technicians to monitor CP systems and much more data on the system to ensure the asset is protected thus avoiding failures.
- **Data Handling** - Because data is collected digitally it is easy to generate reports and plot trend data.
- **Detect Problems** - Power outage and low protection levels can be seen much quicker.
- **Reduce Cost** - Monitoring remotely reduces technician cost and remote control means expert operation of systems is possible for a fraction of the cost.



Offshore Cathodic Protection

The CTS Group has successfully completed major offshore and shoreline projects. Some of the typical offshore structures for corrosion protection have been:

- Submerged pipelines
- Drilling rigs
- Marine Terminals
- Sheet and tubular piles
- Dock structures and jetties
- Single buoy moorings
- Offshore wind farms

CTS also provide services for design and supply of retrofit cathodic protection for ageing structures.

Marine Services

CTS Group provides inspection and maintenance services to vessels docked at major ports and repair yards. In addition, we also provide spare parts for all types of impressed current and anti fouling systems and design and supply sacrificial anodes for vessels ranging from tugs to tankers.



Materials Supply

Our global capabilities extend across the complete spectrum of Cathodic Protection products and materials, including:

- Cathodic protection power supply units
- Junction boxes, cathodic protection cable and power distribution equipment
- Impressed current and sacrificial anodes
- Remote monitoring and remote monitoring & control systems
- Instrumentation, survey and monitoring products

Maintenance

CTS offer engineering services for long-term maintenance plant and pipelines. Services we are providing include:

- Cathodic Protection maintenance and data analysis
- Condition assessment of Reinforced Concrete Structures
- Coating Inspection
- Internal Corrosion Monitoring
- Ad Hoc installation works



Partners

CTS partner with various companies in different territories to offer 'best of breed' solutions. For specific information on which companies and product lines CTS represents in your territory, please contact your local office.

Abriox Ltd

Rectifier Monitors
CP Monitors
www.abriox.com

Aegis Technical Systems LLC Switch Mode Power Supplies

Remote Monitoring & Control Systems
www.aegisme.com

De Nora Permalec

MMO anodes for protection of steel
in concrete
www.denora.it

NuovaGiungas

Monobloc Isolating Joints
www.nuovagiungas.com

RohrbackCosasco Systems Inc.

Internal Corrosion Monitoring
equipment and services
www.cosasco.com

Speir Hunter Ltd

Non-Contact Stress Concentration
Tomography (SCT) for Pipeline Inspection
www.speirhunter.com

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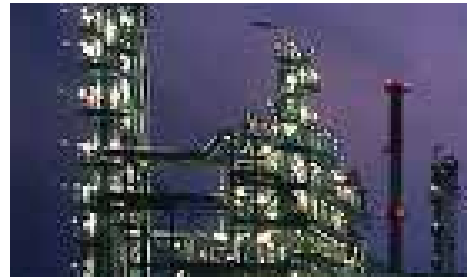
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Providers**



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