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Specialized Oil & Gas Engineering Co. Ltd.

SOGEC Presentation

KABBANI CONSTRUCTION GROUP®

Group of 22 Companies

IKK's contracting vehicle, consisting of 22 specialized construction companies. Our teams of professionals devote their unique talents and experience to provide exceptional levels of performance and quality.

KCG

Capabilities

Projects

110,000 +

Undertaken Projects

Experience

44 +

Years of Experience

Manpower

11,000 +

Engineers, Labors & technicians

Equipment

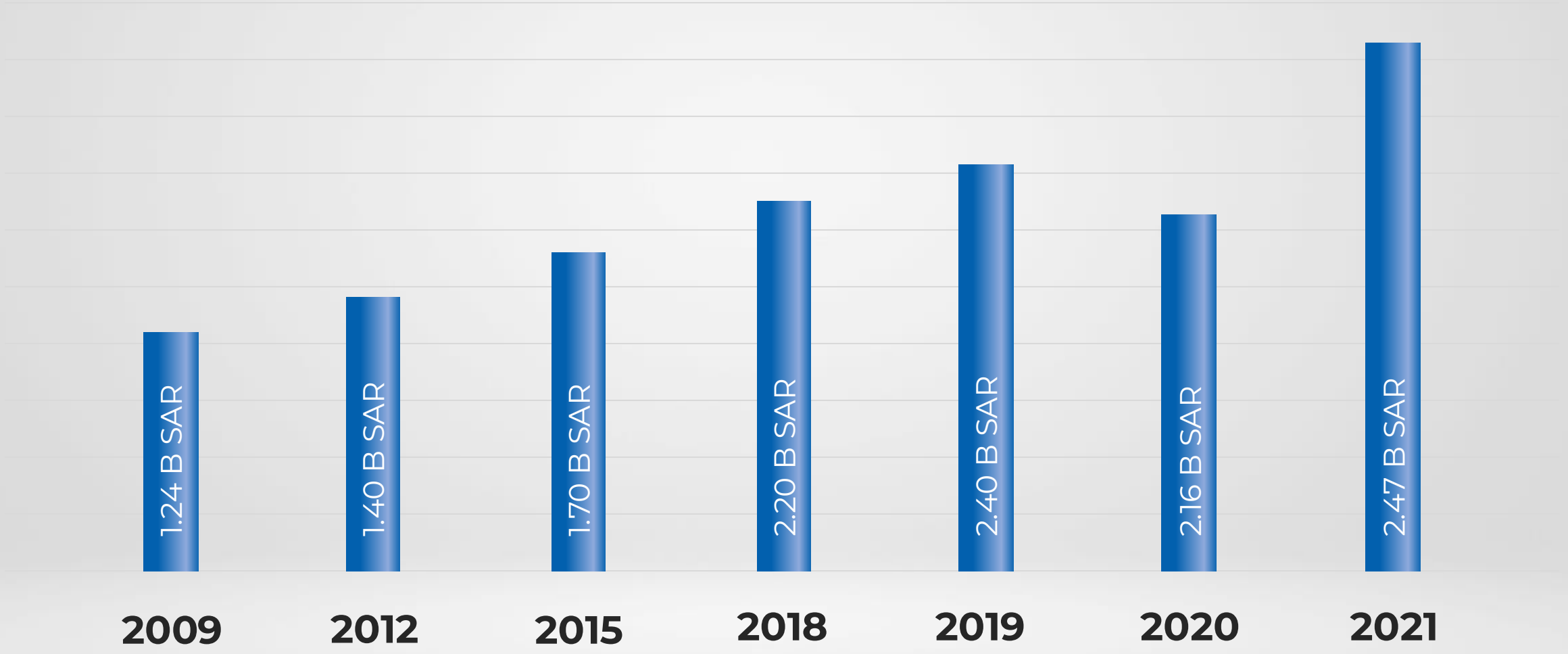
5000 +

Equipment, 1900+ Vehicles, worth 630M SAR

KABBANI CONSTRUCTION GROUP ®

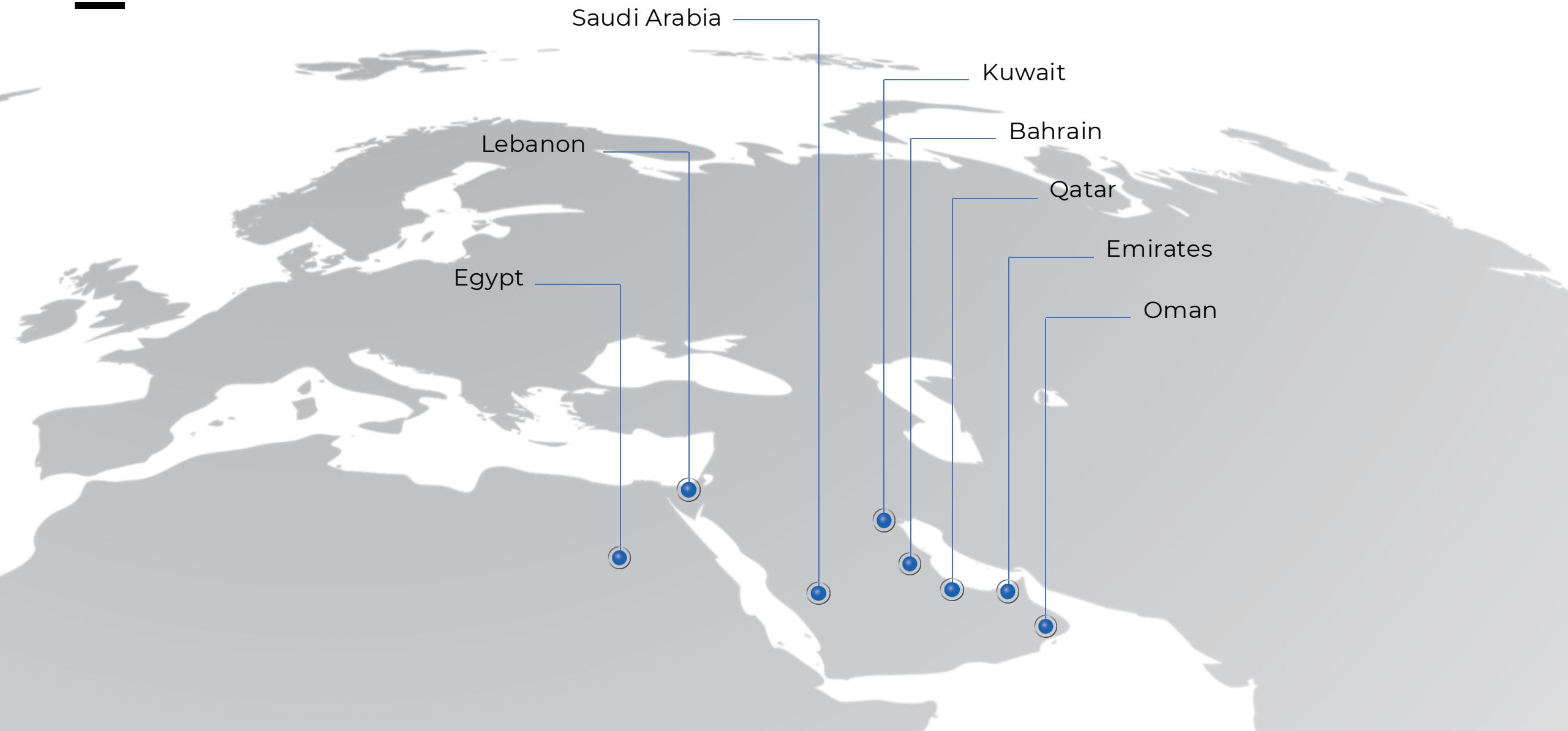
KCG

Revenues



KCG

Global Presence



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SOGEC Commitment

At SOGEC, we are committed to delivering constantly enhanced services. Our focus is not only on safety, reliability, and cost-effectiveness but also on adherence to strict timeframes set by our clients.

We uphold the highest standards of quality and integrity. Our ultimate aim is to contribute to a better world.

SOGEC General Manager
Waleed Rajab

SOGEC Vision & Values

Our Vision:

To be the chief source of Cathodic Protection Systems, Non-Destructive Testing Services, and Heat Treatment Services in the Middle East by providing safe, reliable, and cost-effective solutions and services.

Our Values:

- We CARE about the community by making active social contributions.
- We RESPECT all individuals, whether customers, suppliers, or team members.
- We PROTECT assets that are the reason for a better lifestyle.
- We SUPPORT all our contacts, anytime, anywhere.
- We HONOR commitments with all our affiliates.

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Who We Are ..

About SOGEC

SOGEC was initially launched in 2001 to meet the acute needs of Cathodic Protection Systems (CP), Conventional and advanced non-destructive Testing Services (NDT) and Heat Treatment (HT) Services, Inspection Services, Inspection Supporting Services, Vapor Corrosion Inhibitor (VCI), Internal Corrosion Control (IC), Pipeline Direct Assessment (PDA) required by the oil and gas industry.

Today, SOGEC has more than 500 employees distributed among Lebanon, Saudi Arabia, Oman, Kuwait, Bahrain, and the UAE. SOGEC is a registered vendor with the following well-reputed end clients:

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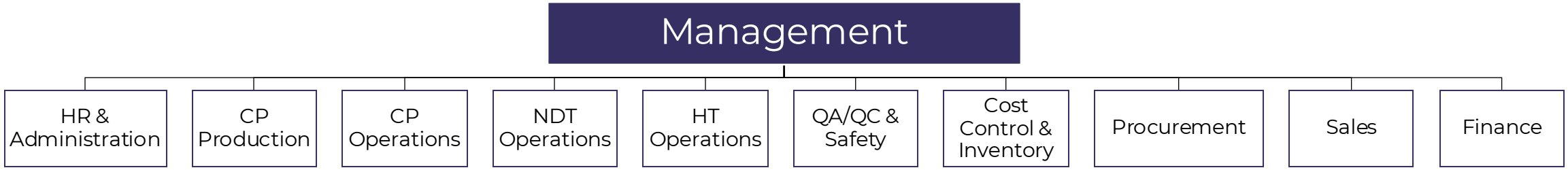
SOGEC Structure



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SOGEC Services

Services Sectors

Our Dedicated Services For:

1- Onshore Structures

2- Offshore Structures

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SOGEC Services

1. Cathodic Protection (CP)
2. Corrosion Monitoring Services
3. Pipeline Direct Assessment
4. Non- Destructive Testing(NDT)
5. Heat Treatment
6. Inspection Services
7. Vapor Corrosion Inhibitor Solution (VCI)

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1. Cathodic Protection Services

1. Cathodic Protection Team

Cathodic Protection Team

The CP team consists of around 140 employees of different crafts (Engineers, Technicians, Surveyors, Draftsmen, etc…)

Job Title	Count	CP1	CP2	CP3	CP4	PMP
Engineer	19		10	3		1
Technician	18	1	4			
Project Management	9		3	2	4	4
CAD Operators	3					
Admin	3					
Total	52	1	17	5	4	5

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1. Cathodic Protection Systems (CP)

- Pre-Design & Site Survey of CP System.
- CP System Design.
- Manufacturing & Supply of CP Materials.
- Installation of CP Systems.
- Testing, Monitoring & Commissioning
- CIPS-DCVG Survey & Reports.
- AC Interference Mitigation Systems.

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1. Cathodic Protection Services

Pre-Design & Site Survey
An initial survey is usually conducted to identify site conditions relevant to structures that require Cathodic Protection systems.

The survey would also involve the investigation of many factors (Existing systems & structures, Soil, etc...).

The survey would also include, if needed, the right advanced equipment and tools.

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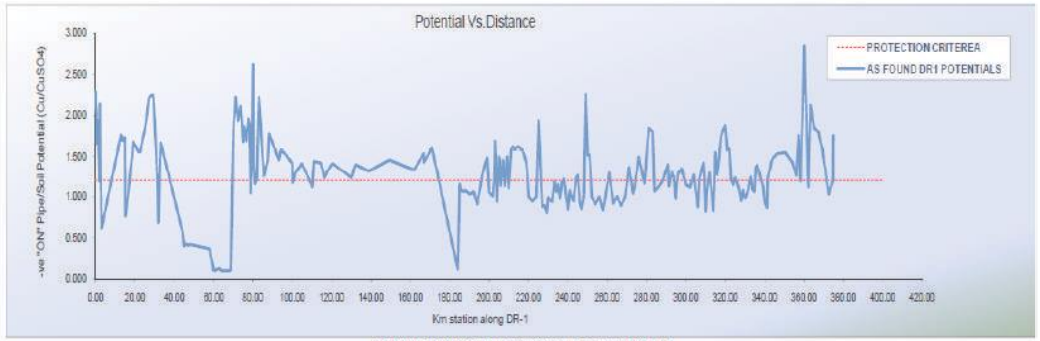
1. Cathodic Protection Services

- **CP System Design**

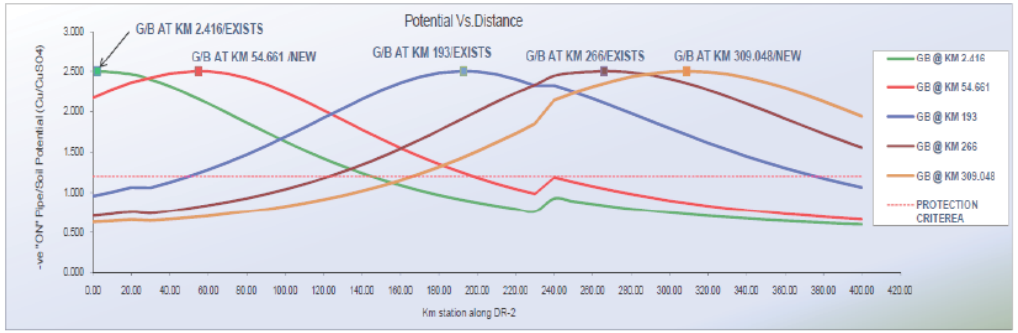
- Designs are done in a practical and cost-effective way and in accordance with client standards and specifications, by qualified NACE-certified CP-4 specialists.

- Customized software and simulations are used to decide on the system type.

- Design packages include detailed Drawings, Materials Specifications, Bills of Materials, Installation procedures, Inspection Test Plans, Method Statements, etc...



AS FOUND POTENTIAL MEASURED ALONG DR-1 PIPELINE



POTENTIAL ATTENUATION GRAPH FOR THE COMBINATION OF NEW AND EXISTING (TO BE UTILIZED) CP SYSTEMS ALONG DR-2

COATING CONDUCTANCE USED: 7.5 Micro Siemens/m² FOR POOR COATING AFTER 20 YEARS

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1. Cathodic Protection Services

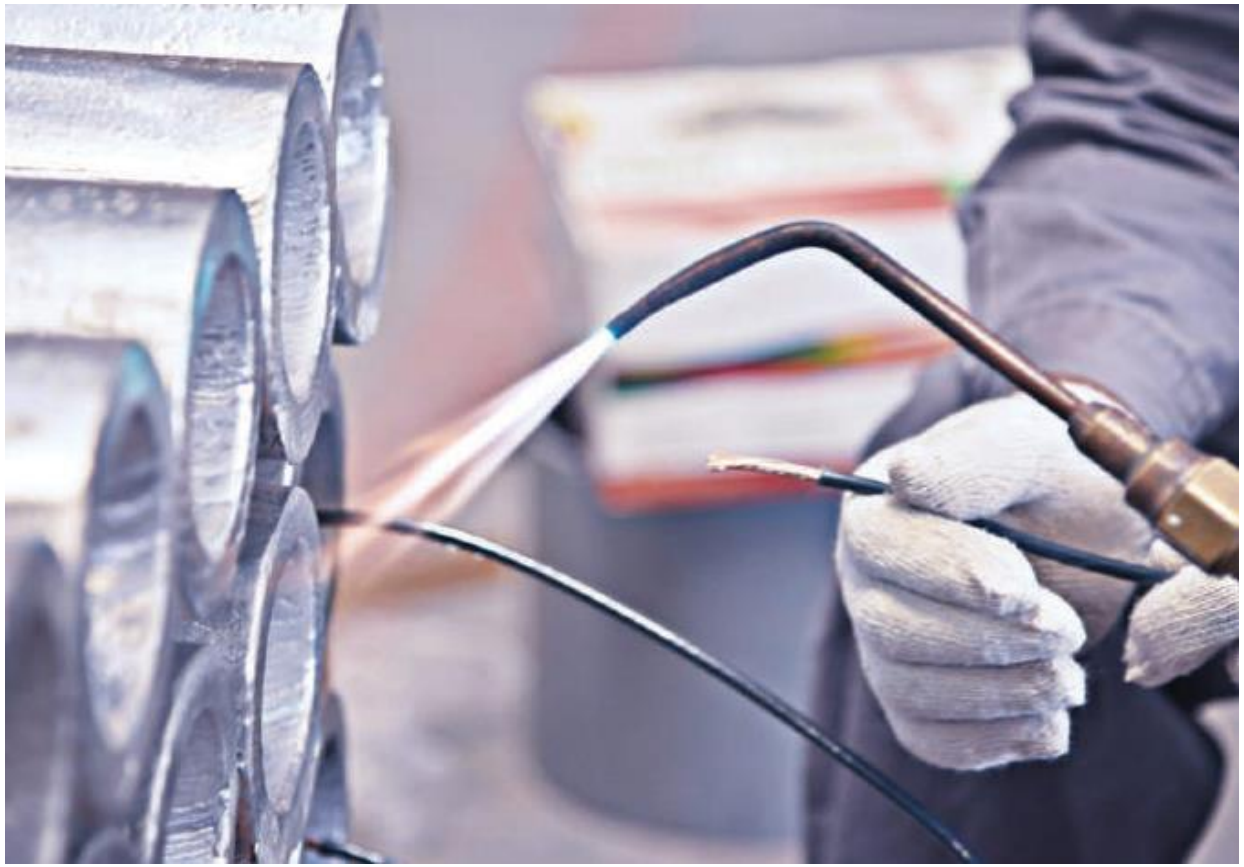
Manufacturing & Supply of CP Materials

- 4,000 sq. meter factory.

- 3,500 sq. meter warehouse plus laydown area.

- SOGEC assembles and manufactures a vast variety of CP materials, starting with a normal type of anode and ending up with the most sophisticated type of Cathodic Protection Transformer Rectifier.

- In addition to manufacturing, SOGEC also supplies items and accessories related to the CP field through its rich supply chain.



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1. Cathodic Protection Services

Manufacturing & Supply of CP Materials

- Sacrificial and Impressed Current Anodes:

1. (Magnesium, Zinc, Aluminum, etc...).
2. High Silicon Iron Anodes (TA-4, TA-5, TA-2, etc...).
3. Mixed Metal Oxide (MMO) Anodes.
4. Transformer Rectifiers (Solar, Air Cooled, Oil Cooled, Conventional, Auto Potential, Variac, Single Phase, Three Phase, etc...).
5. Other Materials:

JBs & BBs with different enclosure types and sizes, Test Stations, Reference Electrodes (RE), Cables (HMWPE, KYNAR/HMWPE, THHN, XLPE/PVC, etc...).

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1. Cathodic Protection Services

Manufactured CP Materials

High Silicon Iron Anode

Pyramid Anodes

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1. Cathodic Protection Services

Manufactured CP Materials

Air cooled transformer rectifier

Oil cooled transformer rectifier

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1. Cathodic Protection Services

Manufactured CP Materials

Junctions Boxes

MMO Tubular Anode

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1. Cathodic Protection Services

Manufactured CP Materials

Test Stations

CP Solar Power Supply System

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1. Cathodic Protection Services

Manufactured CP Materials

Item Description	Annual Capacity	Produced Quantity
High-silicon iron anode	18,000	> 100,000 Each
Prepackaged MG Anode	20,000	> 100,000 Each
Transformer Rectifier	2,800	> 10,000 Each
Test Station	12,000	> 60,000 Each
Junction Box	3,600	> 17,000 Each
Mmo Tubular Anode	12,000	> 29,000 Each
Solar Power Supply	50	> 50 Each

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Cathodic Protection Services

CP System Installation

- SOGEC can install or supervise the installation of any CP system in any part of the GCC.

- Complete installations provided can vary from a simple ribbon anode system for external tank bottoms to installations of deep anode ground beds, including drilling and civil works.

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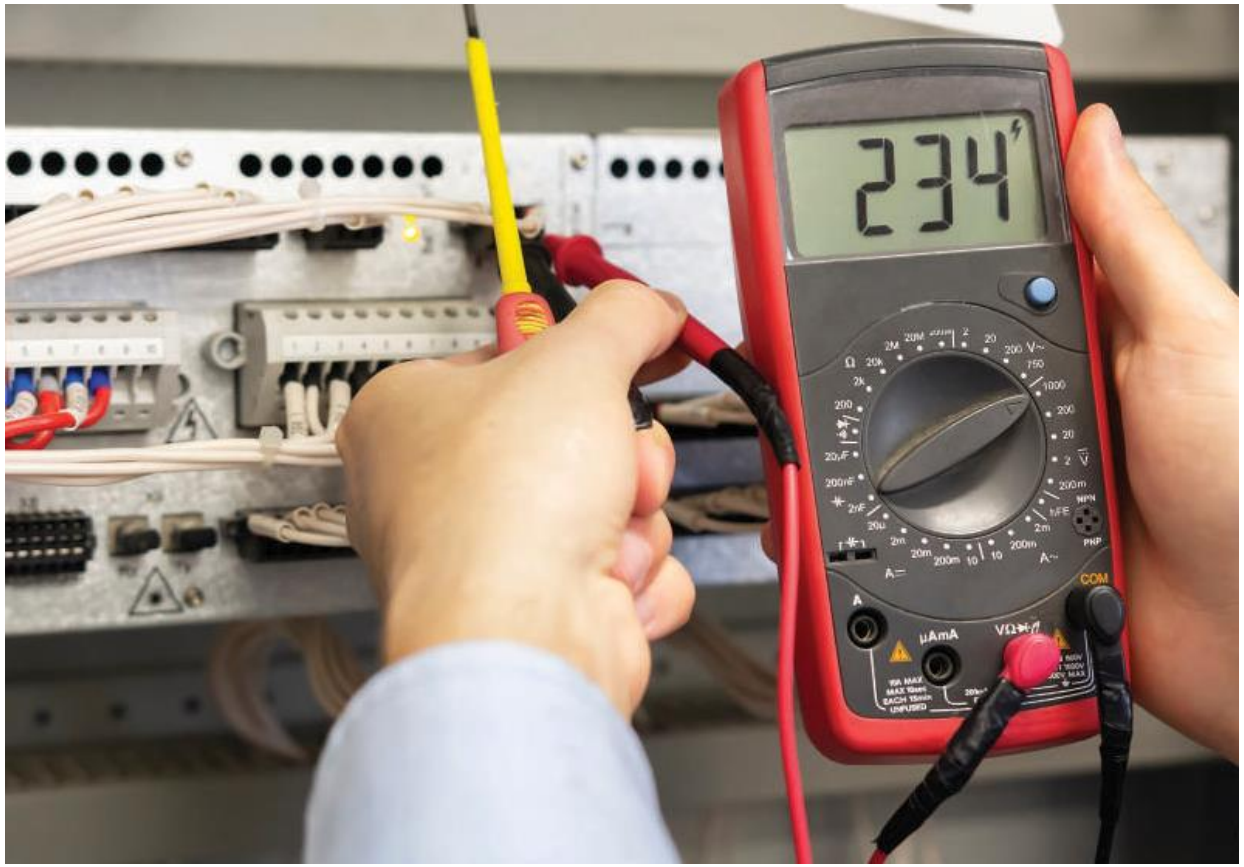
1. Cathodic Protection Services

CP Monitoring, Testing & Commissioning

- SOGEC engineers will test, commission, and make the necessary adjustments to the system to achieve the required level of protection for the structure.

- A fully detailed report on the performance of the system is usually submitted along with complete As-Built drawings at the end of each project.

- SOGEC offers monitoring software to maintain control of the CP system with regular inspection.



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1. Cathodic Protection - Projects Completed

Structure Type	Quantity Excuted
Total Projects	More than 1,000 projects with various sizes, types,, and clients
Tanks External	More than 700 tanks with different dimensions
Tanks Internal	More than 500 tanks with different dimensions
Pipelines	More than 350 pipeline sections with a length of more than 15,000 km
Plant Piping	More than 200 Plant Pipes
Well Casings	More than 1,500 oil welding casings
Piles/ Jetty/ Offshore	More than 100 platforms and 3,000 piles
Fire Hydrants	More than 1,000 fire hydrants and risers
Concrete	15 megastructurees of concrete surface area of 700,000 m2.
AC Interference	More than 20 pipeline sections with a legth of more than 120 km

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1. Cathodic Protection - Projects Completed

Client	Description
China Petroleum Pipelines Engineering Co. - CPP	Cathodic Protection System for North Gas Compression Plants (NGCP) Pipelines project - (BI-02029-0003) (permanent material) for Aramco.
Aramco	Terrain and soil corrosivity surveys along Saudi Aramco Transmission Pipeline Corridors.
National Petroluem Construction Company PJSC. NPCC	Long term agreement for offshore facilities, Zulf AHh East & West oil requirement no. facilities under Bi-10-07868 no. 5611069591 (OOK)/ 6511068664 (IK), CRPO no. 6511069593 (OOK)/ 6511068669 (IK). Saudi Aramco.
Specialized Industrial Services Co. Ltd. SISCO	Cathodic Protection System for the CRPO 4 project in Turaif for Aramco.
Tecnicas Reunidas Saudia	Cathodic Protection System for Haradh and Hawiyah Gas Compression Project.

1. Cathodic Protection - Projects Completed

Client	Description
Bonatti	Cathodic Protection System (internal & external) for 20 tanks, diameter range: (30-56 m) in Yanbu Export Refinery.
ENPPI	Cathodic Protection System for 52 tanks, diameter range: (30-110 m) in Yanbu Export Refinery.
GS Engineering & Construction Corp.	Cathodic Protection System (internal & external) for 15 tanks, diameter range: (15-50 m) in Petro Rabigh.
Specialized Industrial Services Co. Ltd. SISCO	Cathodic Protection System for the CRPO 4 project in Turaif for Aramco.
MAPA LIMAK MING. CO.	Cathodic Protection System Water Transmission System with a total length of 400 km, 12 plants, and 12 water tanks (internal & external) for SWCC Ras Al-Khair.

1. Cathodic Protection - Projects Completed

Client	Description
Worley Parsons	AC Mitigation System Design for a 20-kilometer Pipeline.
Veolia	Cathodic Protection System for 12 tanks(internal), diameter range: (10–25 m)
Hanwha Engineering & Construction Co.	Cathodic Protection System for Subsea Twin Pipelines with a length of 15 km, 2 plants, and 4 tanks (external) in Jazan Export Refinery

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2. Corrosion Monitoring Services

2. Internal Corrosion Services

Alongside external corrosion services, SOGEC is also capable of developing efficient Corrosion Management Programs and providing Corrosion Monitoring Services

Internal Corrosion Services include:

- Online Coupon and Probe Retrieval
- Corrosion Analysis in our well-established in-house laborat
- Data Logging and Remote Monitoring

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3. Pipeline Direct Assessment

3. Pipeline Direct Assessment Services

Despite the presence of various inline inspection tools, the need for a proactive inspection technique still exists. Pipeline Direct Assessment is a well-structured NACE program that helps anticipate where corrosion might happen, identifies and categorizes threats to pipelines, and helps manage and prioritize mitigation and repair actions.

SOGEC provides the three types of Direct Assessment—ECDA, ICDA, and SSCDA—with a high level of knowledge

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4. Non-Destructive Testing (NDT)

4. Non-Destructive Testing

SOGEC has many years of experience providing Conventional NDT services and is also a leader in advanced NDT techniques. We are committed to providing our customers with high-quality NDT services that meet their specific needs.
All our NDT services are supported by our experienced team and performed by our ISO 9001:2000 Quality Program.

Our Services

1. Conventional NDT Services
2. Advance NDT Services

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4. Non-Destructive Testing Team

NDT team consists of around 300 employees of different crafts (Engineers, Technicians, Inspectors, etc…)

Job Title	No. of Employees
In-house ASNT II RT	197
In-house ASNT II UT	62
In-house ASNT II UTT	152
In-house ASNT II PT	260
In-house ASNT II MT	260
RPP	148
SA UTSW	44
SA RTFI	31
SA PAUT	4
Level III	3
API Inspector	4
Radiation Safety Officer	12

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4.1 CONVENTIONAL (NDT) Services

4.1 Conventional Non-Destructive Testing (CNDT) Services

- Radiographic Testing (RT).
- Radiographic Testing – SCARPRO
- Digital Radiography Testing (DR)
- Ultrasonic Thickness Gauge Testing (UTT).
- Ultrasonic Shear Wave Testing (UT).
- Paint & Coating Thickness Testing.
- Magnetic Particle Testing (MPT).
- Dye Penetrant Testing (DPT).
- Ferrite Testing (FT)
- Leak Detection. (Vacuum Box)
- Visual Inspection.
- Holiday Test.

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4.1 Conventional Non-Destructive Testing Services

Radiographic Testing (RT)

Conventional RT is a nondestructive examination (NDE) method that uses X-rays and gamma rays for detecting internal imperfections, measuring wall thickness, and detecting corrosion.

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4.1 Non-Destructive Testing Services

Radiographic Testing – SCARPRO

Being one of the best organizations, we are offering Radiography Testing Services. This service is executed by our skilled professionals using high-grade tools and advanced technology.

Our professionals check all the quality parameters associated with this service and perform the service in the best possible manner. We offer this service as per the requirements of our clients. Further, the offered service is highly demanded by our clients for its cost-effectiveness and promptness features.

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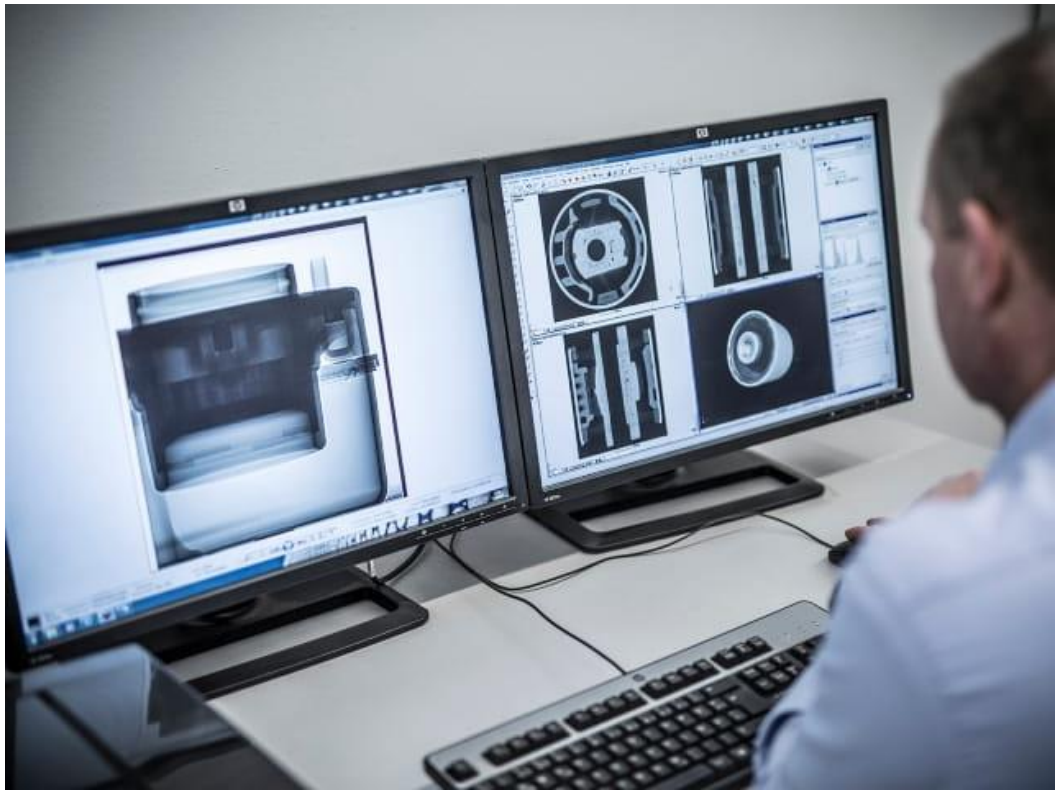
4.1 Conventional Non-Destructive Testing Services

Digital Radiography Testing (DR)

As industry leaders in advanced technology, we bring you cutting-edge solutions backed by our own R&D laboratories and a global network of resources.

Our services guarantee minimal downtime, streamlined workflow, and quantitative results that enhance your company's mechanical-integrity program.



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4.1 Conventional Non-Destructive Testing Services

Ultrasonic Thickness Gauge Testing (UTT)

Ultrasonic Thickness Testing (UTT) is a method of performing non-destructive measurement (gauging) of the local thickness of a solid element based on the time taken by the ultrasound wave to return to the surface.

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4.1 Conventional Non-Destructive Testing Services

Ultrasonic Shear Wave Testing – UT

Shear-Wave Ultrasonic Testing, also known as an "angle-beam inspection," is a UT technique that uses a probing ultrasonic transducer with a plastic wedge to test component strength. The probe conducts an ultrasonic beam at an angle into the test area, moving move back and forth as it detects any flaws based on the refraction of the beam. From there, our highly skilled technicians evaluate the gathered information.

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4.1 Conventional Non-Destructive Testing Services

Paint & Coating Thickness Testing.

Various methods of NDT are used for the measurement of coating thickness – paint thickness, plating thickness, anodising etc

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4.1 Conventional Non-Destructive Testing Services

Magnetic Particle Testing (MPT)

Magnetic particle inspection is used to locate surface breaking defects and is used on ferrous materials to look for cracks, laps, seams, voids, pits, and other surface defects or slightly subsurface defects. It can be performed in-house or in the field.

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4.1 Conventional Non-Destructive Testing Services

Dye Penetrant Testing (DPT)

Penetrant inspection is used to locate surface breaking defects and is used on nonferrous materials such as metals, composites, and ceramics, identifying surface anomalies such as cracks, seams, laminations, blow holes, laps, external bursts, and welding defects. It can be performed in-house or in the field.

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4.1 Conventional Non-Destructive Testing Services

Ferrite Testing (FT)

Ferrite testing, also referred to as a ferrite scope test, is a rapid non-destructive inspection method used to measure the amount of delta ferrite on austenitic stainless steel and duplex stainless steel materials.

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4.1 Conventional Non-Destructive Testing Services

Leak Detection

Leak Detection covers a wide range of techniques used to detect the leakage of fluids from the test part. In most cases, fluids are pressurized on one side of the test part.

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4.1 Conventional Non-Destructive Testing Services

Visual Inspection

Visual inspection is the basis for all NDT inspection programs. commonly used NDT method across all industries. It allows for a feasible and fast control of quality at every step of the fabrication or maintenance process. Visual Testing (VT) is used to detect visible flaws such as deformation, welding defects and corrosion. Many tools can be used during the inspection such as a ruler, gauges, cameras, etc

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4.1 Conventional Non-Destructive Testing Services

Holiday Test

Holiday test or a Continuity test is one of the non destructive test method applied on protective coatings to detect unacceptable discontinuities such as pinholes and voids. The test involves checking of an electric circuit to see if current flows to complete the electrical circuit.

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4.2 Advanced (NDT) Services

4.2 Advance Non-Destructive Testing (ANDT) Services

ANDT Services

- Phase Array Ultrasonic Testing (PAUT).
- Time of Flight Diffraction (TOFD).
- Tube Inspection Services (ECT, MFL, RFT, NFT & IRIS)
- Tank Floor Inspection Services (MFLT)
- Corrosion Mapping Services,
- Boroscope Inspection.

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4.2 Advance Non-Destructive Testing Services

Phase Array Ultrasonic Testing (PAUT)

A Phased Array generates an ultrasonic beam with the capability of setting beam parameters. Applications include weld inspection, complex geometries, defect detection, and location and sizing. The ability to record weld scans and to visualize the reflectors and their position within the weld makes it a qualified technology and an excellent choice for projects constructed to Various National & International Codes.

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4.2 Advance Non-Destructive Testing Services

TOFD

Time-of-flight diffraction (TOFD) method of ultrasonic testing is a sensitive and accurate method for the nondestructive testing of welds for defects. .

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4.2 Advance Non-Destructive Testing Services

Tube Inspection Services (ECT, MFL, RFT, NFT & IRIS)

SOGEC provides complete tube inspection services. This advanced tube inspection system has bundled five inspection technologies into a single unit. ECT, MFL, RFT, NFT & IRIS.

Advanced Tubing Inspection NDT Methods For Boiler & Heat Exchanger Equipment In The Petrochemicals Industry To Supplement Major Turnaround Inspections.

The Usual Means Of Examination Is To Insert Some Type of Probe Into The Tubes, One At a Time, While Data Is Recorded For Later Interpretation. The Technologies Listed Below (ECT, RFT, IRIS and MFL) Are All Able To Detect Defects on the Out Side Of The Tube From The Inside.

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4.2 Advance Non-Destructive Testing Services

Magnetic Flux Leakage Tank Floor Inspection (MFLT)

Magnetic Flux Leakage (MFL) uses a powerful magnet to magnetize the conductive material under test (usually steel). Where there are defects — corrosion or material loss — the magnetic field “leaks” from the steel.

MFL probes incorporate a magnetic detector placed between the poles of the magnet where it can detect the leakage field. During the inspection, a magnetic circuit of sorts forms between the part and the probe. The magnetic field induced in the part saturates it until it can no longer hold any more flux. The flux overflows and leaks out of the pipe wall and strategically placed sensors can accurately measure the three-dimensional vector of the leakage field.

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4.2 Advance Non-Destructive Testing Services

Corrosion Mapping Services

Corrosion mapping is a quantitative way to inspect a material where oxidation or erosion has reduced its thickness.

Variations in material thickness due to corrosion can be identified and graphically portrayed as an image. The technique is widely used in the oil and gas industries for the in-service detection and characterization of corrosion in pipes and vessels. The data is stored on a computer and may be color-coded to show differences in thickness readings.

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4.2 Non-destructive Services

Boroscope Inspections

SOGEC Advanced NDT Solutions provides a comprehensive Boroscope Inspection Service. The borescope is an essential tool for inspecting power plant components. Commonly used in high-value rotating power-plant equipment such as steam turbines, gas turbines and generators it is also extremely useful for checking the internal or external surfaces of the boiler and HRSG tubes and piping.

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4. Non-Destructive Testing Projects Completed

Company Name	End Client	Type of Service	Location
Saudi Aramco Total Refining & Petrochemicals Company (Satorp)	SATORP	Covering all Conventional NDT Services for two months of Shutdown	Jubail
Aramco's Yanbu Refinery	Aramco	Supplying 37 API Inspectors & 4 data Maintainers for two months shutdown in the refinery.	Yanbu
Consolidated Contractors Co. (CCC)	Aramco	Covering Conventional NDT PKG #07 for two years.	Jizan
CAT International Company Limited	Aramco	Covering all UTT jobs for five months.	Shaybah
Hanwha Saudi Contracting	Aramco	Covering Conventional NDT PKG #14 for three years.	Jizan

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4. Non-Destructive Testing Projects Completed

Company Name	End Client	Type of Service	Location
Nesma & Partners Contractors Co.	Aramco	Covering Conventional NDT.	Haradh
Mutlaq Al-Ghowari Contracting Co.	SWCC	Covering Conventional NDT.	Duba
Saudi Electricity Company – SEC	SEC	Providing UT Services for Power Plants in the Kingdom	All Power plants in Kingdom
Branch of China Petroleum Pipelines Co.	Aramco	Covering Conventional NDT.	Haradh
PetroKemya	SABIC	Supplying API Inspectors and NDT Technicians during the shutdown for two months.	Jubail

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5- Heat Treatment Services

5. Heat Treatment (PWHT)

- Post Weld (PWHT).
- Pre-Heating.
- Solution Annealing.
- Furnaces.
- Hardness Testing.
- Refractory Dry-out.
- Internal Firing.
- Normalizing.
- Stress Relieving.

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5. Heat Treatment Team & Equipment

SOGEC has a high level of knowledge and experience in this service and a variety of equipment to make sure that client needs that is related to Heat Treatment are fulfilled with the utmost quality.

The HT team consists of around 97 experienced employees of different crafts (Engineers, Technicians, Inspectors, Helpers, Specialists, etc…).

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5. Post Weld Heat Treatment Services (PWHT)

Post Weld Heat Treatment Services Team

The HT Services Team consists of around 97 employees of different crafts (Engineers, Technicians, Inspectors, Helper, Specialists, etc.).

Job Title	No. of Employees
Certified Welding Inspector	2
HT Technical Specialist	1
Heat Treatment Engineer	2
Heat Treatment Supervisor	4
Heat Treatment Technician	50
Positive Material Identification Technician	10
Instrumentation Specialist	2
Heat Treatment Helper	2

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5. Heat Treatment Team & Equipment

Heat Treatment Services Equipment

Equipment Description	Quantity (EA)
Heat Treatment Equipment – Transformer Unit	60
Heat Treatment Equipment – Main Voltage Unit	10
Heat Treatment Equipment – Induction M/C	1
Dual Firing Burner Sets	10
Hardness Tester – Telebrinell Method	7
Hardness tester – Digtal Method	5
Positive Material Identification M/C – OES Method	3
Positive Material Identification M/C – XRF Method	3
Heat Treatment Furnace – L: 10 m x W: 4.5 m x H: 9 m	1
Heat Treatment Furnace – L: 15 m x W: 5.5 m x H: 9 m	1

5. Heat Treatment Services

Post-Weld Heat Treatment – PWHT

Post-Weld Heat Treatment Services (PWHT) are defined as one of the heat treatment methods done after welding/machining to improve the chemical and/or mechanical properties of weldments / machined surfaces.

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5. Heat Treatment Services

Pre-Heating

Pre-heating involves raising the temperature of the parent material locally, on both sides of the joint, to a value as specified in codes.

The need for Pre-heat is usually determined by the applicable fabrication code and verified by the weld procedure qualification test.

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5. Heat Treatment Services

Solution Annealing

Our heat treatment services for annealing various metals, such as steel, aluminum, and copper, improve the ductility as well as the cold working properties of all types of metals.

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5. Heat Treatment Services

Furnaces

SOGEC offers its in-house industrial furnaces, one in Dammam and another in Jubail, with sizes of 15m length, 5.5m width, and 9m height, to perform a range of heat treatment processes in them, including Annealing, Ageing, Hardening, Solution heat treatment, Normalizing, and Stress relieving of various objects.

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5. Heat Treatment Services

Hardness Testing

SOGEC has the ability to conduct both methods of hardness testing that are available in today's market.

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5. Heat Treatment Services

Refractory Dry-out

SOGEC has extensive experience in the field of refractory dry-out and in controlled heating and ventilation for the drying of specialized refractory linings used in process industries such as the steel, petrochemical, and aluminum industries.

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5. Heat Treatment Services

Internal Firing

SOGEC has vast experience in on-site internal firing in the GCC region, ranging from pressure vessels to tanks and boilers. In this method, the workpieces or equipment are themselves converted into a furnace and heated internally by diesel or gas-fired burners located at appropriate points, and the whole equipment is completely covered with insulation material to avoid heat losses.

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5. Heat Treatment Services

Normalizing

The Normalizing Heat Treatment process involves heating steel above the critical temperature, holding it for a period of time long enough for transformation to occur, and air cooling to make the material softer but it does not produce material properties like annealing.

Normalized heat treatment establishes a more uniform carbide size and distribution, which facilitates later heat treatment operations and produces a more uniform final product.
This treatment refines the grain size and improves the uniformity of the microstructure and properties of hot-rolled steel.

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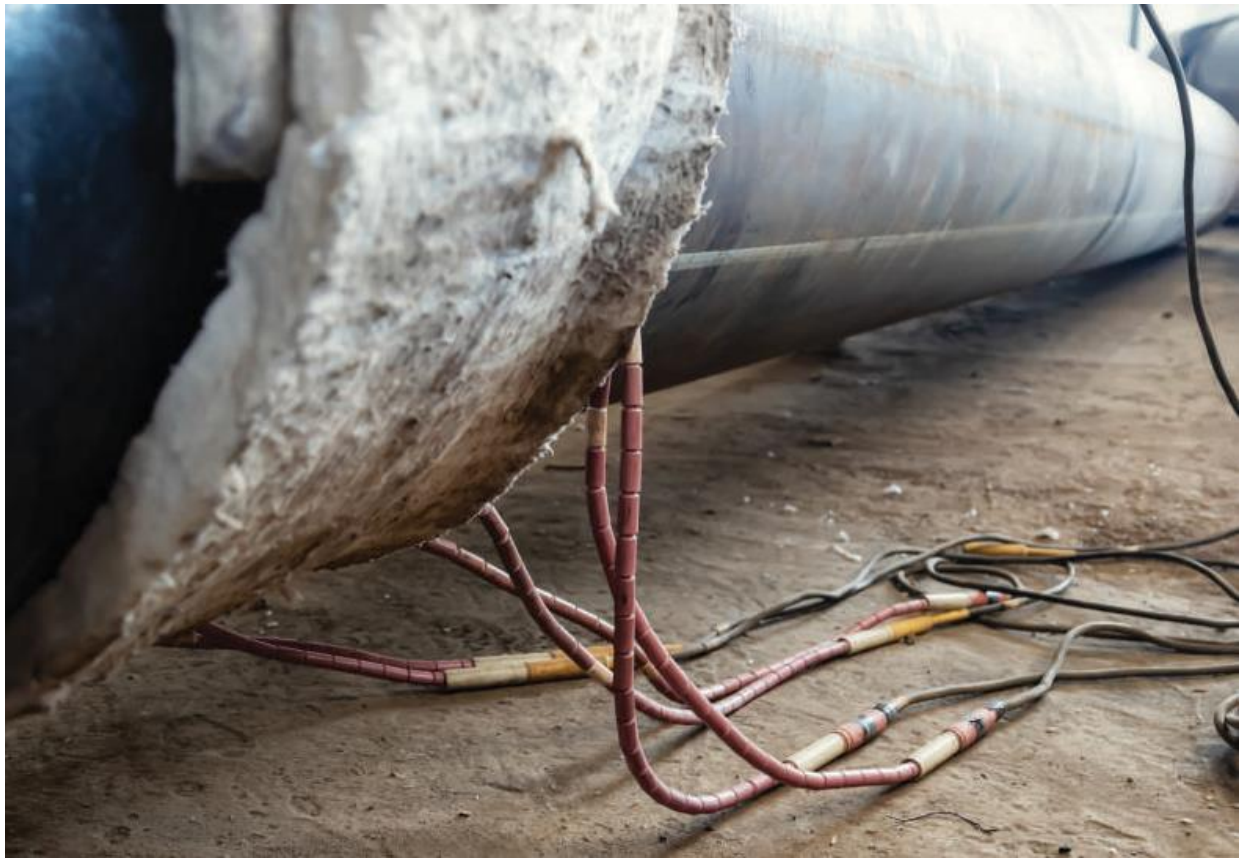
5. Heat Treatment Services

Stress Relieving

The Stress-Relieving heat treatment process involves heating subjects to a temperature below transformation temperature in order to relieve residual stresses in the material and lower the hardness values of the material, which can cause distortions in the long term in the subjected items. Internal stresses in welded structures are removed by the stress relieving method.



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5. Heat Treatment Services Projects Completed

Company Name	End Client	Type of Service
Shandong Electric Power Construction Group Saudi Arabia LLC.	Saudi Aramco	PWHT Services at Jazan Refinery, Power Block, Pkg. #4..
The Bahrain Petroleum Co. (BAPCO)	BAPCO	Provision of Heat Treatment Services for Sphere 83 T&I – OF P316 (O307136).
Kubota Saudi Arabia Company	SABIC (SADAF)	Construction of a Temporary Furnace and Providing Solution Annealing Services for Tubes.
SAIPEM Snamprogetti Saudi Arabia Ltd.	Saudi Aramco	HSBH23 Hook-Up Activity WO# 31226985.
Olayan Descon	Saudi Aramco	Providing HT Services at the Saudi Aramco Abqaiq Plant.

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5. Heat Treatment Services Projects Completed

Company Name	End Client	Type of Service
Saudi Arabian Kentz Co. Ltd.	Saudi Aramco	Supply of Heat Treatment technicians at Jazan.
Mechanical Contracting & Services Company W.L.L. (MCSC W.L.L.)	BAPCO	Providing PWHT Services at the Bapco site in Bahrain .
LARSEB TOUBRO Saudi Arabia L.L.C.	Saudi Aramco	Providing Preheating services at Uthmaniyah GOSP-11.
Dynamic Industries Saudi Arabia Limited	Saudi Aramco	PWHT Services for Berri Field (Offshore).
Petro Rabigh	Petro Rabigh	Providing HT Services at Petro Rabigh for MOIN-EC-FR-180.

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5. Heat Treatment Services Projects Completed

Company Name	End Client	Type of Service
Kaefer Saudi Arabia Co.	Saudi Aramco	Providing Refractory Dryout Service for the Thermal Oxidizer & Vent Stack at Jizan.
Hanwha Saudi Contracting	Saudi Aramco	Providing Hardness Testing Services for Jazan Refinery Terminal Facilities Project.
Gulf Consolidated Contractors Company (GCC)	Saudi Aramco	Providing Hardness Testing Services at Jubail (On Scraper Traps For Install Pipline Instruments & Scraping Facilities Job # 510).
Saudi Arabian Fabricated Metals Industry Co. Ltd. (SAFAMI)	Saudi Aramco	Providing PWHT Services at SAFAMI for the Fadhili Pipeline.
Juffali Heavy Equipment Co. (JHECO)	LUBEREF	Providing PWHT Services for the PDA Revamp Project at Luberef-II, Yanbu.
Nasser S. Al Hajri	Saudi Aramco	Providing PWHT Services for Jazan Refinery & Terminal Projects.

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5. Heat Treatment Services Projects Completed

Company Name	End Client	Type of Service
Sinopec Engineering Group Saudi Co. Ltd.	Saudi Aramco	Providing PWHT Services for the Fadhli Gas Program Project.
Saudi Archirodon Ltd.	Saudi Aramco	LFC for heat treatment services in all SABIC affiliates.
Bonatti SPA Branch	Saudi Aramco	LFC for heat treatment services in all SABIC affiliates.
DNGO Contracting Saudi Co.	SWCC	LFC for heat treatment services in all SABIC affiliates.
Samsung Saudi Arabia Ltd.	Saudi Aramco	LFC for heat treatment services in all SABIC affiliates.
National Petrochemical Industrial Company (NATPET)	NATPET	LFC for heat treatment services in all SABIC affiliates.
SKEC	SATORP	LFC for heat treatment services in all SABIC affiliates.

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5. Heat Treatment Services Projects Completed

Company Name	End Client	Type of Service
JGC Arabia	SASREF	LFC for heat treatment services in all SABIC affiliates.
Inma Steel Fabricators Co. Ltd.	JUPC	LFC for heat treatment services in all SABIC affiliates.
Saudi Aramco	Saudi Aramco	LFC for heat treatment services in all SABIC affiliates.
Technip S.A. Ltd.	SATORP	LFC for heat treatment services in all SABIC affiliates.
Nesma	SADARA	LFC for heat treatment services in all SABIC affiliates.
Nasser S. Al Hajri	SABIC KEMYA	LFC for heat treatment services in all SABIC affiliates.
Tecnicas Reunidas	Saudi Aramco	LFC for heat treatment services in all SABIC affiliates.
National Industrialization Company (Tasnee)	TASNEE	LFC for heat treatment services in all SABIC affiliates.
SABIC	SABIC (all)	LFC for heat treatment services in all SABIC affiliates.

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6. Inspection Services

6. Inspection Services

- PQR Qualification
- WQT Witnessing
- API Inspection

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6. Inspection Services

PQR Qualification

SOGEC helps customers set up their own PQR (a record of the welding data used to weld a test coupon), WPS (a written qualified welding procedure prepared to provide direction for making production welds to Code requirements), and qualify their welders.

In SOGEC, we have highly qualified and experienced Certified Welding Inspectors and Metallurgists to develop new welding procedures and overcome the difficulties in current procedures by providing a complete range of services like PQR qualification, NDT and PWHT of test coupons, and mechanical testing of the test pieces.

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6. Inspection Services

WQT Witnessing

SOGEC has experienced certified welding inspectors (AWS CWI / CSWIP) who can test your welders using the necessary methods as required by the many welding codes and standards. They are fit for the required welding task as needed.

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6. Inspection Services

API Inspection

We are an end-to-end service provider for asset integrity management, consulting, and supplier evaluation. Our API Inspection Team specializes in providing both on-site and off-site management to complete your turnaround on schedule. Our inspectors can provide support while your plant is in operation, in addition to turnaround-based inspection programs.

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6.1 Inspection Supporting Services

6.1 Inspection Supporting Services

Positive Material Identification (PMI)

Positive Material Identification (PMI) quickly and accurately identifies the composition of more than 100 different engineering alloys onsite.

We perform both X-Ray Fluorescence (XRF) and Optical Emission Spectroscopy (OES), two methods of conducting a PMI examination.

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6.1 Inspection Supporting Services

In-situ Metallography

In-situ Metallography is a non-destructive testing tool that is used to extend the life of components by preparing & evaluating the replication of microstructure.

Application areas include fertilizer, petrochemical, aerospace, chemical plants, foundries, forge shops, steel plants, automobiles, oil & gas, offshore structures, and chemical processing industries.

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6.1 Inspection Supporting Services

ASNT Level III Consulting Services

SOGEC NDT Consulting Team has many years of individual and collective experience in the application of NDT technologies to a wide variety of complex Projects and their expertise can Support you find solutions to your inspection challenges.

Our ASNT-certified Level 3 consultants can assist you with:

- Technical Procedure Development NDT
- Process Implementation
- NDT Engineering
- Employee Certification
- Process Control Documentation
- Process Auditing
- Compliance Audit Preparation
- Radiation Safety Support

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7. Vapor Corrosion Inhibitor Solution (VCI)

7. Vapor Corrosion Inhibitor Solution (VCI)

- In-Service Tanks
  - Chime Ring Dry
  - Chime Ring Injection
  - Underside Injection

- Out-of-Service Tanks
  - Chime Ring Dry
  - Chime Ring Injection
  - Underside Injection
  - Internal Flood
  - Dry Tube
  - Underside Drip Tube

- Roof Protection
  - Fixed Roof Tanks
  - Floating Roof Tanks

- Pipeline Casing Protection

- Offshore Rigs/Platforms/FPSOs

- Equipment Preservation

- Spare Part Protection

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7. Vapor Corrosion Inhibitor Solution (VCI)

Corrosion Inhibitor Solutions

SOGEC / Zerust Oil & Gas Tank SSB Inhibitor Delivery System (IDS) solutions provide a cost-effective means to mitigate the underside corrosion of aboveground storage tanks while the tanks are in or out of service. Whether tank bottoms, single or double, rest on compacted sand, concrete, soil, or bitumen, our solution extends the serviceable life of these assets.

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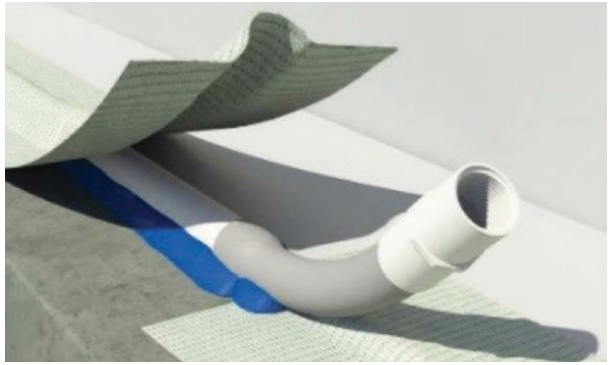
7. Vapor Corrosion Inhibitor Solution (VCI)

Chime Ring Dry

Chime Ring Dry IDS Solution is recommended for storage tanks with concrete or bitumen foundations. The innovative VCI/SCI (Soluble Corrosion Inhibitor) injection system is used to protect the tank bottom from corrosion. Perforated PVC pipe is installed around the entire annular chime area. The VCI dry sleeves are installed into the PVC pipe, and the system is sealed to create an enclosure to contain the VCIs. The VCIs migrate and absorb onto the metal surface. The diffusion of VCIs provides corrosion protection in the critical 3 to 4 meters from the annular chime ring.

VCI Dispersion from Mesh Sleeve



Chime Ring Dry IDS Pipe

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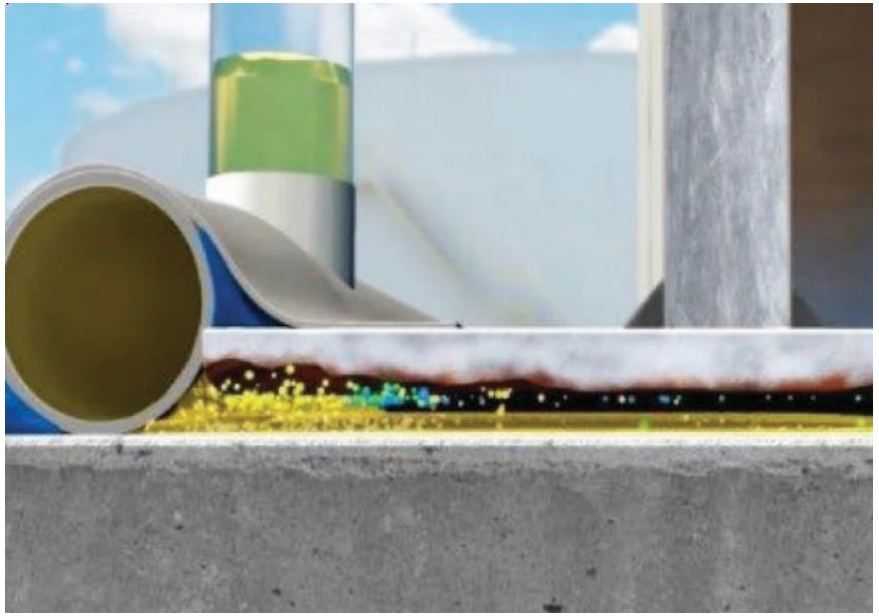
7. Vapor Corrosion Inhibitor Solution (VCI)

Chime Ring Injection

The Chime Ring Injection IDS solution is suitable for storage tanks with concrete, bitumen, or sand with liner foundations. Innovative VCI/SCI (Soluble Corrosion Inhibitor) injection system to protect the tank bottom from corrosion. As the inhibitor slurry is pumped into the perforated PVC chime ring system, the VCIs migrate and absorb onto the metal surface.

Meanwhile, the liquid inhibitor slurry works to neutralize any contaminants it may contact on either the bottom plates or foundation.

The combination of VCIs and SCIs works together to protect vulnerable areas of the tank bottom plates from corrosion.



VCI Dispersion from Slurry

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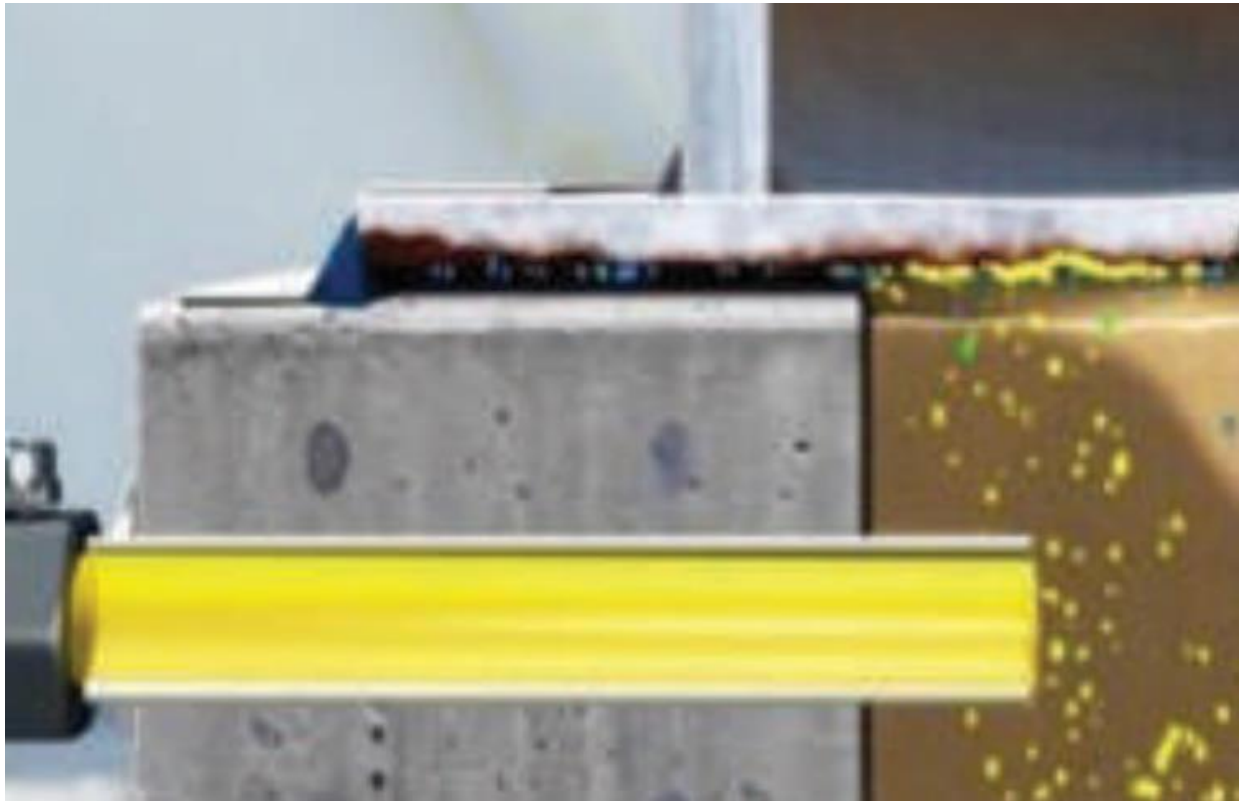
7. Vapor Corrosion Inhibitor Solution (VCI)

Underside Injection

Underside Injection IDS solution is designed for tanks with compacted sand fill and Release Prevention Barriers (RPBs), double bottoms with sand between the old and new floors, or tanks sitting on a hard pad such as concrete or asphalt. As the slurry flows throughout the entire sand bed, the SCIs effectively neutralize contaminants on contact. Conversely, the VCIs emitted by the slurry migrate and absorb onto the metal surface. The VCIs permeate the sand bed through capillary action and gravity, providing protection to the entire tank floor.



VCI Dispersion from Slurry

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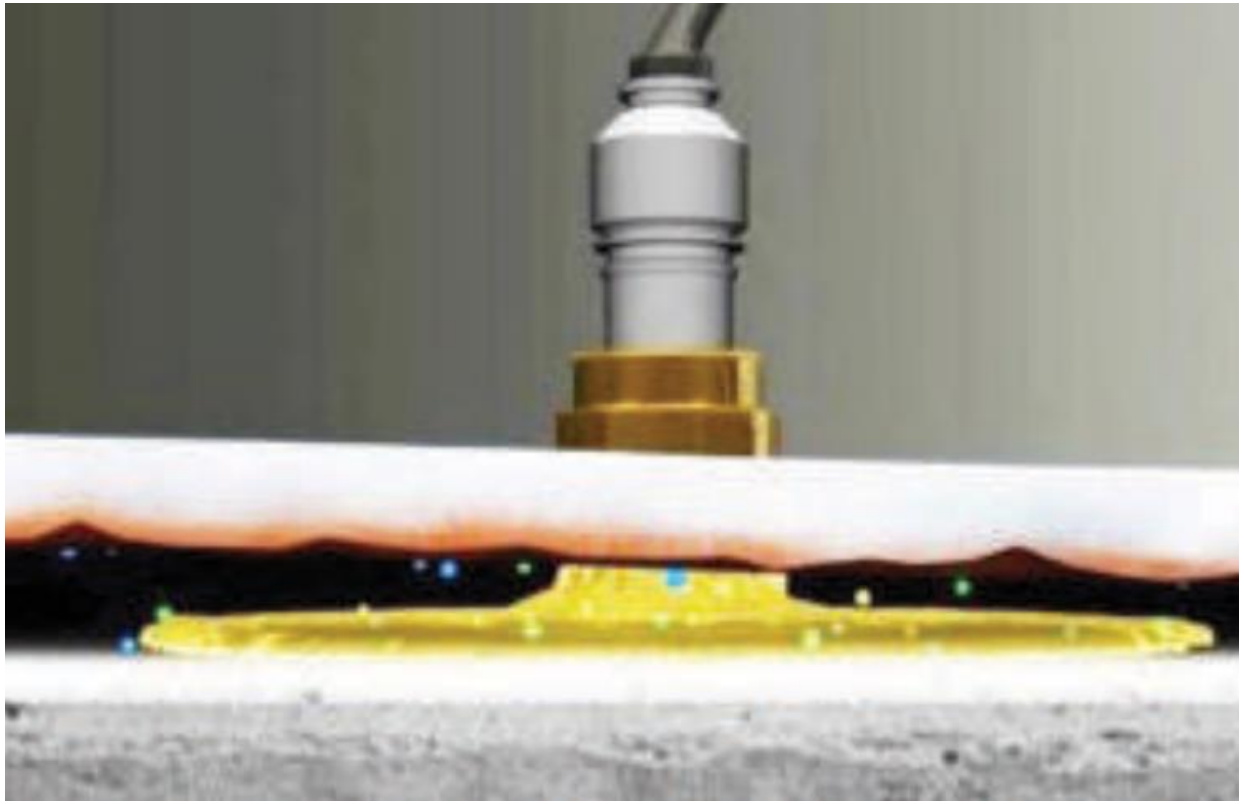
7. Vapor Corrosion Inhibitor Solution (VCI)

Internal Flood

The Internal Flood IDS solution is suitable for tank foundations of concrete, bitumen, or compacted sand with a liner. Low-viscosity inhibitor slurry is pumped into one or more temporary injection ports installed in selected locations through the tank floor.

The VCIs emitted by the slurry migrate and absorb onto the metal surface. The SCIs work to neutralize any contaminants they may contact on either the bottom plates or foundation.



VCI Dispersion from Slurry

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7. Vapor Corrosion Inhibitor Solution (VCI)

Dry Tube

The Dry Tube IDS system is designed to protect tank bottom plates during construction or new floor installation. This solution benefits tanks with concrete, bitumen, and compacted foundations with or without liners.

Shallow trenches are cut into the foundation. Perforated, mesh-covered PVC pipes are placed within the trenches, and the trenches are then filled with sand. and dry mesh sleeves of VCI inhibitor are installed into each of the pipe tubes. VCIs work to mitigate corrosion on the metal bottom plates of the tank.

VCI Dispersion from Mesh Sleeve

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7. Vapor Corrosion Inhibitor Solution (VCI)

Underside Drip Tube

The Underside Drip Tube IDS is an innovative solution that protects tank bottom plates of single- or double-bottom tanks during construction or new floor installation. A network of perforated PVC pipes with mesh sleeves is installed in rings on top of the tank liner in the sand foundation. Low-viscosity inhibitor slurry is pumped into the designated ring wall port(s) in the sand bed, and the perforated PVC pipe network distributes the slurry evenly throughout the system.

The VCIs are released from the sand bed, protecting the metal bottom plates of the tank. The SCIs in the inhibitor neutralize contaminants in the sand bed. The injection port(s) can be used for future inhibitor injections.

Underside Drip Tube

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7. Vapor Corrosion Inhibitor Solution (VCI)

Inhibitor IDS System Benefits

- Provides the option for replenishment.
- Can be combined with simple monitoring.
- procedures to ensure the effectiveness of the solution.
- Corrosion protection for voids & interstices that are impossible to protect with other methods.
- Protection for tank bottom plates and welds with little to no surface preparation.
- VCIs offer non-permanent corrosion protection at the molecular level that is safe and eco-friendly.
- Zerust's methods of VCI dispersion ensure.
- Uniform distribution.
- The service life of tank bottoms can be increased.
- Significantly at minimal cost.

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7. Vapor Corrosion Inhibitor Solution (VCI)

Solution Effectiveness

IDS solutions are comprehensive and proven methods for protecting storage tanks with soil-side bottoms. IDS solutions reduce overall costs for tank farm owners while increasing corrosion prevention efficacy. Tank operations do NOT need to be stopped during inspection or maintenance of the SSB solutions.

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7. Vapor Corrosion Inhibitor Solution (VCI)

Pipeline Casing Protection (Liquid, Powder & Gel)

Underground pipelines are required to have Cathodic protection to protect them from corrosion. When these pipelines run under roadways, railway lines, etc. they have historically been required to have protective metal casings. Over time, there may be movement of the product carrying the inner pipeline (“carrier pipe”) and/or the casing that brings the carrier and casing into contact. This results in a “metallic short” that causes the Cathodic protection current to pass through the casing.

- High Viscosity Gel Application
- Powder Application
- Slurry Application

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7. Vapor Corrosion Inhibitor Solution (VCI)

Equipment Preservationl

IDS solutions are comprehensive and proven methods for protecting storage tanks with soil-side bottoms. IDS solutions reduce overall costs for tank farm owners while increasing corrosion prevention efficacy. Tank operations do NOT need to be stopped during inspection or maintenance of the SSB solutions.

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SOGEC Safety

- SOGEC's utmost and primary priority at all times and places is to deliver safety in all of its plans. Safety is a way of life that we implement in every aspect of our activities, whether while driving a car, installing a system, or even replacing a light bulb in our premises.

- Loss prevention programs are always being audited, recorded, & analyzed to implement better & safer practices while delivering services.

- Because a human being is what matters most to us, SOGEC never jeopardizes or risks any of its employees or affiliate personnel under any circumstances.

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SOGEC QA / QC

- ISO 9001:2015 Certified.
- ISO 45001:2018 Certified.
- ISO 14001:2015 Certified.
- Semi-Automated Quality Management System (QMS).
- No major NCR was issued to SOGEC for any of its completed projects.
- No material returns to SOGEC due to bad quality.
- SOGEC ensures that the execution of any project will comply with contract specifications, drawings, local regulations, and good construction practices.

Certificate of Registration

Intertek

This is to certify that the quality management system of

Specialized Oil & Gas Engineering Co., Ltd. (SOGEC)

Main site: Al Khalidiyah Al Janubiyah, P.O. Box: 6897, Dammam 31452, Kingdom of Saudi Arabia

has been assessed and registered by Intertek as conforming to the requirements of:

ISO 9001:2015

The quality management system is applicable to

The provision of heat treatment, positive material identification testing services, hardness testing, Non destructive testing, leak sealing, sales & installation of chlorine analyzer systems, maintenance of industrial machinery and installation. Design, supply and manufacturing, installation, and commissioning of Cathodic protection systems.

Certificate Number: QMS 21111009001-03
Issue Date: 09 May 2017
Certificate Expiry Date: 08 May 2020

UKAS MANAGEMENT SYSTEMS 014

Authorised Signature: Colin Moldowean – President, Business Assurance
Intertek Certification Limited, 10A Victory Park, Victory Road, Derby DE24 8ZF

Intertek Certification Limited is a UKAS accredited body under schedule of accreditation no. 014.

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The certificate remains the property of Intertek, to whom it must be returned upon request.

Intertek Intertek Intertek Intertek Intertek

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SOGEC List of Suppliers

SOGEC is the Authorized Distributor inside the Kingdom of Saudi Arabia of the following highly recognized international suppliers and service providers:

- JA Electronics Manufacturing Co.
- Rustrol Systems.
- Loresco.
- Metricorr.
- Zerust Oil and Gas.

JA ELECTRONICS MANUFACTURING COMPANY

RUSTROL® SYSTEMS

Zerust® OIL & GAS
WORLDWIDE CORROSION SOLUTIONS

MetriCorr

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Thank You.

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