

COMPANY PROFILE





Your First Choice Partner in Oil and Gas

Suite 4-07, Level 4 AMODA Building 22 Jalan Imbi 55100 Kuala Lumpur, Malaysia

> Tel: +6 03 2711 1011 Fax: +6 03 2711 1022

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COMPANY BACKGROUND

Profile

JURUNATURE SDN. BHD. (hereinafter also referred to as "**JURUNATURE**") was incorporated and registered on 8th April 1999 with the intention of focusing in trading of niche products and providing best-in-class services, specializing in the Oil and Gas (O & G) / Petrochemical industry. As a prudent company and in order to succeed in this highly competitive trade, the Company realized the need to aggressively research the global markets for products that are innovative, practical and much sought after by the Oil and Gas industry.

After an extensive 10 months of deliberation and fact-finding on products, *JURUNATURE* became active and began securing partnership arrangements and pairing-up with major International trading companies beginning March 1, 2000.

Today, *JURUNATURE* is proud to be credited as a system and service provider of innovative safety solutions to the oil & gas petrochemical industry. We endeavor to tailor a package that provides the most technically advanced system, product, and service solution that meets the budgetary constraints of our Clients.

Through an extensive knowledge of the industry from the inside as a Client and from the outside as an EPIC Contractor, *JURUNATURE* has developed a complex yet highly effective and sophisticated global network of suppliers and partners, which we truly believe that *JURUNATURE* have mastered the discipline of smart-partnering.

JURUNATURE has successfully collaborated with distinguished and leading international companies in representing their presence in Malaysia. Numerous leading international companies have shown their absolute confidence in the Company by appointing the Company to be their **EXCLUSIVE** Agent/Partner in Malaysia.





Corporate Information

Registered name of Company	:	JURUNATURE SDN. BHD.
Date of incorporation	:	8 th April, 1999
Office address		Suite 4 – 07, Level 4, AMODA Building, 22 Jalan Imbi, 55100 Kuala Lumpur
Telephone	:	+6 03 – 2711 1011
Fax	:	+6 03 – 2711 1022
Authorized Capital	:	RM 5,000,000.00
Paid-up Capital	:	RM 1,000,000.00
Board of Directors	:	Dato' Sri Muhammad Syafiq Bin Abdullah Datin Sri Dr. Maison Binti Shaik Abdul Rahman Abdul Hanif Bin Abu Bakar
Company Secretary	:	HOMELAND Consulting Sdn Bhd (Tan Yen Nee – MAICSA 7026045)
Banker's Name and Address	:	ALLIANCE BANK MALAYSIA BERHAD 150 – 152, Jalan Cerdas, Taman Connaught, 56000 Cheras, Kuala Lumpur
Accountant	:	NASHARUDDIN WONG & CO 3A01, Block A Pusat Dagangan Phileo Damansara 1 Jalan 16/11, Off Jalan Damansara 46350 Petaling Jaya, Selangor
Certifications	:	ISO 9001 : 2015 Quality Management System ISO 45001 : 2018 Occupational Health & Safety ISO 14001 : 2015 Environmental Management





Vision, Mission, and Shared Values

Core Values

Focus on customers	We always strive to exceed customers' expectations.
Deliver results	We are driven by result through innovation and continuous improvement.
Value people	We work as a team, respect and care for one another.
Uphold integrity	We demonstrate integrity in our words and actions.
Mutual respect and trust	In everything we do, in every interaction, both, we strive to operate with the upmost mutual respect and trust in every interaction both internally and externally
Open communication	Partnerships with our customers and co- workers must be based on trust, professionalism and transparency.

Philosophy

JURUNATURE will keep contributing positively to the achievement of Malaysia's VISION 2020 by developing and growing our resources and increasing our competence in our specialized fields of work.

JURUNATURE will maintain the highest level of Quality, Safety and Environmental standards and awareness in all work that we undertake, no matter the size and that we will continue to ensure all work done is done to the highest level of client satisfaction.

JURUNATURE will continue to be a company with a strong Corporate Social Responsibility and it is our aim to continually honour our obligations to our shareholders, employees, stakeholders, clients and partners.

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Vision

"Your First Choice Partner in Oil & Gas"

Mission

- Creating values in the Oil and Gas market by providing high end technology solutions and offerings in line with Malaysia's aspiration to be an innovation-led economy.
- We strive to be the global leader in providing products and services of unsurpassed quality for the oil and gas industries, adding value to all of our clients as well as exceeding their expectations.
- To exceed the needs and expectations of our customers at all times by continuously providing high quality products and services, complying fully with their specified requirements on time and within budget.
- Enhance our shareholders' value through its employees and providing a dynamic environment for both our employees and sub-contractors by creating an atmosphere of optimism, teamwork, creativity, resourcefulness.





Company Policy

With qualified and technically experienced staff, the company is maturing into a vast and dynamic organization. Continuing to strive for excellence, the company is stepping up efforts in being recognized as a major trading company with unmatched records in all fields the Company ventures into.

Our company policies are:

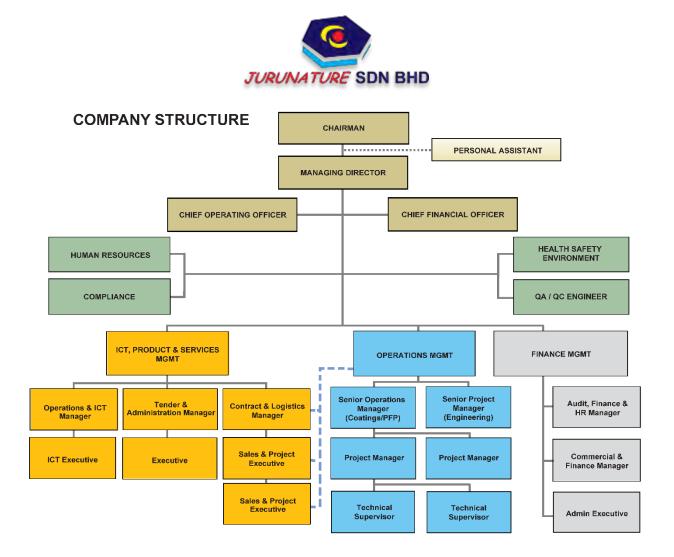
- To strive for excellence and be recognized as **<u>THE</u>** leading company in <u>its field of business.</u>
- To establish and <u>maintain good working and mutually beneficial</u> <u>relationship</u> with all clients.
- To sustain the <u>highest Safety and Health standards</u> and to ensure the Safety and Health of its employees are given the highest priority.
- To ensure <u>highest standards in ethics and integrity</u> are complied with.
- To be <u>very competitive in pricing</u>, yet uncompromising in the quality and professionalism of work completed, and
- To be <u>sensitive to the environment</u> and conserve the state of the environment.





COMPANY STRUCTURE

Organization Chart







Our people



We understand that our people are the key to our success and we're committed to:

- Fostering a culture based on our beliefs and behaviors Our beliefs unite us to do the right thing, help others and realize potential and are supported by a set of behaviors that ask us to be authentic and respectful, work together and create value through excellence.
- Improving health, wellbeing and lifestyle providing a safe and healthy work environment, as well as a range of benefits to ensure work/life balance.
- Providing career development opportunities supporting individual goals, providing career paths and ensuring performance is matched by reward.
- **Fostering a culture of achievement** through providing innovative learning opportunities.
- **Flexible working** providing real choices to manage the balance between work and personal life.
- An inclusive workplace environment creating a culture where men and women from an array of different backgrounds, generations and cultures feel genuinely included and valued.
- **Creating opportunities for community involvement** through opportunities to work directly on community activities, providing support and processes to make this happen or by taking time to give back.



















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BUSINESS ACTIVITIES

JURUNATURE as an EPIC Contractor, *JURUNATURE* has developed a complex and yet highly effective and sophisticated global network of suppliers and partners.

In the area of product offer, *JURUNATURE* has successfully collaborated with distinguished and leading International companies in representing their presence in Malaysia. Several leading International companies have shown their absolute confidence in the Company by appointing the Company to be their EXCLUSIVE Agent/Partner in Malaysia.



MLNG 3 SLUGCATCHER PROJECT



KIKEH DTU TRUSS SPAR PROJECT



HELANG TOPSIDES PROJECT



KIKEH DTU TRUSS SPAR PROJECT







Jurunature lahirkan lebih ramai jurukimpal berkemahiran tinggi

Kerja tidak glamor tapi lumayan

JOHOR BAHRU 10 Mei Mungkin tamai yang menganggap kerja sebagai jurukimpal tidak glatnor, namun ia sobenarnya mem-heri pendapatan lunayan kerana ti dak ramai yang memiliki kemahiran tersebut.

dari potensi itu, sebuah bumiputera, Jurunature , bertekad melahirkan le-i pekerja mahir dalam bi-palan gas dan petroleum, nengiktiraf profesion ter-ratikat berkenaan melam-ogram akceditasi bagi para

h ramai pekerja muhir berkenaan yang ber-inggi. ah Urusannya, Datuk Seri ad Syafiq Abdullah ber-

aknya mengambil lan bekerjasama dengan i ubangunan Industri J (JDB) melancarkan ak ujian kemahiran itu su mempunyai nilai tan mempunyai dapat bersaina tempatan dan anta

ah empatan uan ama-nahu menjadi contoh ke-rikat lain yang memye-rogram akreditasi untuk ia dan yang penting me-sama strategik ia memberi an dan membuka mata an dan membuka mata inaan untuk memasilikan orja mendapat perakuan CIDB.



liah kepada 400 lagi kakitangan di syarikat kami secara berpering-kat peringkat, bagi membelehkan mereka terug melangkah jauh bu-ke peringkat joloal ketana ia mem-janjakan pendapatan lumayan," ka-ianya kepada Ubasar Malaysio di semanya kepada Ubasar Malaysio di sema keta da basara dalaysio di sema keta da basara dalaysio di sema keta da basara dalaysio di

juan syarikatnya mengendalikan program itu kerana CDB bakal me-wajibkan semua pekerja binaan di negara ini mendapatkan akreditasi atau pentauliahan yang dijangka di-laksanakan awal tahun depan bagi semua pekerja binaan tempatan yang mempunyai tahas bend

Menerusi program akroditasi itu, pekerja binaan akan menjalani satu tienabirak kanuntuk mengesahkan bagi memeruhi piawaian. Menurunya, Junmaenur berharap bukan sahaja dapat melahirkan lebih ramai juru kimpal berkureditasi, ma-lah membentuk jurukimpal berkua-lik, cekap serta mencagai standard

Jurunature berharap bukan sahaja dapat melahirkan lebih ramai juruldimpal berakreditasi, malah membentuk jurukimpal berkualiti, cekap serta mencapai standard keperluan industri petroleum dan gas yang semakin berkembang.

MUHAMMAD SYAFIQ ABDULLAH







'Bidang yang menarik, beri kepuasan'

Mariku to Mel – zeberapa al mengaku nereka men-temahiran yang dipelajari ture 36m, Baka, di anu, ran Selamat, 50, yang te-ebur bidang tersyang te-ebur bidang tersyang te-burb bidang tersyang te-burb bidang tersyang te-peranan pelantar minyak dan segi pembinana braktur, dasanya kerja mengimpal kan tumpuan dan kereli-ana keruntungan syarikat

kan tampuan dan keteli-ma keuntungan syarihat ing kepada kemahiran dan mendad penyalia di Ju-kan mengaku bidang kan-tan mendag yaan me-namenda kanar, keja an menda kanar, keja an ang yaan me-gada mata kaar, keja an mengaku bidang yaan remenda kaar, keja an mengaku bidang yaan an mengaku bidang yaan remenda kaar, keja bara



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Qrang ramai diminta bantu kesan Harmiza

PEJABAT UTUSAN MALAYSIA 07-3332880 / 333. 07-3329934



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PRODUCT AND SERVICES

Product and Services Overview

JURUNATURE is now recognized as a leading provider of many specialist products and services to the industry. The company is further renowned for quality and production in-line / every time with the client's schedule.

Our range of products and services include:

- Humidur Single Coating System
- HiCO₂ Dry Ice Blasting
- Passive Fire Protection Services
- Jurunature's PFP Casting System
- JuruFlex J120 Jet Fire Jacket System
- Fire & Blast Protective Systems
- Fire Rated Doors
- FRP Grating Systems
- Welding Electrodes
- Field Joint Coating Services
- Enertherm Sprayable Insulating Coating
- C-Saddle Pipe Supports
- Topside Robotic Inspection
- Emission Monitoring and Reporting
- Fabrication Works
- Dredging & Land Reclamation, Offshore, Environmental, Infra Marine

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- Vegase Safety Engineering in Gas Detection, Liquid Hydrocarbon
- ProTXcoat High Temperature Insulation and Repair Coating
- Sacrificial Anodes with Induction Melting Technology
- VSAT Systems and ICT Solutions











HUMIDUR[®] Single Coating System



HUMIDUR[®] = HUMIdity + DURability

ACOTEC = Anti COrrosion TEChnology

Humidur® is the brand of protective and marine coatings developed by Acotec. With 30 years of expertise in anti-corrosion coatings, anti-fouling coatings and top coats, Humidur® offers solutions to a wide variety of markets: the offshore oil and gas market, petrochemical industry, shipping, marine industry and energy market.

Heavy-duty performance and outstanding properties

The system has proven to be maintenance-free when there has been minimal or no mechanical impact.

Humidur® is a system designed to use in all kinds of water and has a high chemical resistance at the same time. The system has proven to be effective in salt, brackish, fresh, drinking and even waste water. It also protects steel tanks and pipes with more aggressive chemicals.

In the marine and shipping industry, the products may also be used in submerged, splash zone and tidal areas and in atmospheric zones. In other words, Humidur® is able to function on the complete structure. This is proven in practice on multiple structures for several decades!

Five Humidur systems covers most structures

- 1. Successful in all types of water environment
 - Proven system in salt brackish fresh water
 - · Officially approved for potable drinking water structures
- 2. Ideal for structures in water
 - Works in fully submerged zone, tidal / splash zone and atmospheric zone

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- Perfect for pipelines, offshore and marine structures, ballast tanks
- 3. Increased Flow velocity
 - Smooth surface
 - Perfect in moving water increase flow velocity, capacity



- 4. Cures under water
 - Immediate use of structure
 - Minimum downtime
 - Unique efficiency in coating of submerged and splash zones!
- 5. Single-layer system
 - 1 layer built up to the requested DFT
 - No primers required
 - Reduced production and application costs substantially
- > User friendly; min surface preparation
- > 30-year claim-free system and satisfied customers worldwide
- Ideal solution for Sweating Lines and CUI
- Surface tolerant: even under minimal surface preparation conditions the coating withstands extreme conditions (adhesion values reach up to 25 MPa)



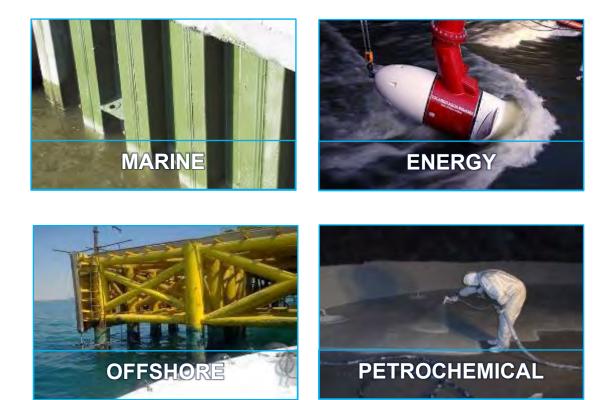






APPLICATIONS

The manufacturer of Humidur®, Acotec, provides the full service from coating manufacturing, to coating application and quality control in cooperation with its clients. Acotec can provide the full equipment and technical assistance which makes the Humidur® products to the most complete products on the market.









KEY BENEFITS

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Cost Effective

- Single Coat
- Minimal surface preparation and shutdown
- No Primer and Top Coat required
- Allows for NDT inspection at 400µm DFT
- 1/3 losses compared to 3 layer coating system
- Up to 30 Year Warranty

Significant Productivity Increase

- Up to 40% productivity increase over 3-layer system
- No revisit for 2nd and 3rd coat application 1 day application time vs. min 3 days for 3-layer system
- No intermediate curing times for multiple layers
- Cures Underwater



Increased Window of Application

- Can be applied :
 - In high humidity conditions i.e. as high as 95% Humidity
 - Within a temperature Range -35°C to 150°C
 - To pH levels 0 < pH < 14</p>
 - To salt levels < 65 mg/m2



Enhanced HSE Management

- It is environmentally friendly (no VOC's, no coal tar, no heavy metals, no isocyanates)
- Eliminates need for multiple solvents/chemical
- No risk of pollution; solvent free no heavy metals, coal tar or isocyanates
- No leaching when curing under water
- No HSE risk 100% VOC free
- Minimum risk of explosion due to higher flash point (>100°C)













Case Studies: HUMI DUR Application at PETRONAS PCOGD, Kertih

Detail: HUMIDUR Single Coating Systems Application on Ambient, Hot and Sweaty Pipes Client: PETRONAS PCOGD Date: 12-13 Nov 2019 Location: PETRONAS PCOGD, Kertih, Terengganu

Ambient Pipe with Normal Surface **Temperature (less than 50°C)**



Before application



Mechanical preparation to ST2



Coating applied during normal surface temperature



Before application



Mechanical preparation to ST2



Coating applied during normal surface temperature



Pipe with Hot Surface Temperature (60°C - 70°C)



Before application



Mechanical preparation to ST2



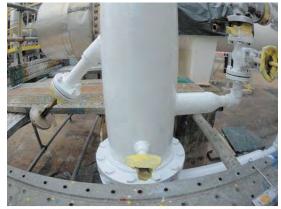
Coating applied during hot surface temperature



Before application



Mechanical preparation to ST2



Coating applied during hot surface temperature



Pipe with Hot Surface Temperature (60°C - 70°C)



Before application



Mechanical preparation to ST2



Coating applied during hot surface temperature



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Before application



Mechanical preparation to ST2



Coating applied during hot surface temperature





Pipe with Cold Surface Temperature (13°C - 25°C)



Before application



Mechanical preparation to ST2



Coating applied during cold surface temperature





Case Studies: Offshore Platform Onsite Repair

Detail: Corrosion repair and overcoat with Humidur with minimal preparation <u>Client:</u> Talisman Energy UK Ltd <u>Applicator</u>: CAN Offshore Ltd <u>Date:</u> Feb-Mar 2013 <u>Location:</u> Offshore UK, North Sea







Case Studies: Offshore Platform Nodes Repair

Detail: Coating repairs of nodes by rope-access <u>Client</u>: Talisman Energy UK Ltd <u>Applicator</u>: Stork Technical Services <u>Date</u>: Sep-Oct 2014 <u>Location</u>: Offshore UK, North Sea









Case Studies: Offshore Platform Repairs

Detail: Coating repairs of assets <u>Client</u>: Shell Sarawak <u>Applicator</u>: Jurunature and Dayang team <u>Date</u>: 2015 <u>Location</u>: Offshore platform, Malaysia water





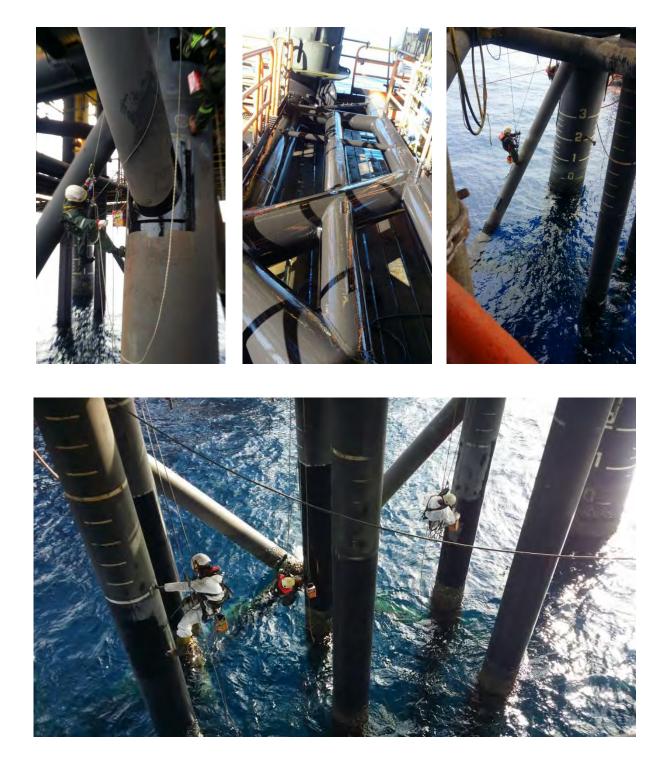


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Case Studies: Offshore Platform Repairs







PETRONAS Approval Letter - August 2018



Our Reference: ENGG/MCI/CORRES/10.08/2018/03 Your Reference: JNSB/PPCTC-HMDR/0308/2018

6th August 2018

JURUNATURE SDN BHD (480488-P) Suite 4-07, Level 4 AMODA Building, 22 Jalan Imbl, 55100 Kuala Lumpur. Attn: Dato' Sri Muhammad Syafiq

Dear Sir,

Re-APPLICATION FOR HUMIDUR SINGLE COATING SYSTEM FOR STANDARD COATING TESTING WAIVER AND BE LISTED UNDER PETRONAS APPROVED LIST

We are pleased to inform you that PETRONAS Protective Coating Technical Committee (PPCTC) is hereby confirmed that we had carried out technical assessment for 'Humidur Single Coating System' by JURUNATURE SDN. BHD. In-lieu of coating standard testing procedure as per PTS 15.20,30 Protective Coatings and Linings.

The Humidur Single Coating System is now APPROVED for usage at PETRONAS facilities and its subsidiaries with Immediate effect until a period of 5 years from the date of this letter. Asset owner is advised to discuss detail on products specification, application, warranty term and limitations prior using it with the vendor.

List of Humidur Single Coating System are as following:-

- 1. Humidur ME (Modified Epoxy)
- 2. Humidur FP (Full Protection)
- 3. Humidur TC (Top Coat)
- 4. Humidur AF (Anti Fouling)

Above products will be listed under PETRONAS Approved Protective Coating Master List.

Tower 1, PETRONAS Twin Towers, Kuala Lumpur City Centre, 50088 Kuala Lumpur, Malaysia T: =(603) 2025 5000, 2051 5000 F: +(603) 2026 5050 www.petronas.com





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PETRONAS Approval Letter - August 2018





Product Approval @Shell

Technical assessment of Humidur coating system Received fast-tracked SHELL Global approval in May 2016 and currently undergoing Global roll-out for all its facilities & plants.

Executive summary

Within Shell assets and projects there is a tendency to use alternative coating systems compared to the conventional primer/epoxy midcoat/UV resistant topcoat coating system for atmospheric conditions, especially for maintenance purposes for offshore applications.

One of the options is a maintenance coating system, the Humidur coating system, manufactured by Acotec, Belgium. The Humidur coating product is a single layer surface tolerant 2-component solvent-free modified epoxy coating.

It is the intention to extend the use of this optional maintenance coating system to Shell assets globally. This report describes the technical assessment of the Humidur coating system based on manufacturer information, Shell assets experiences, other track records and (third) laboratory test reports.

It was concluded that Humidur FP can be approved to be used within Shell assets and projects for Sa2¹/₂ blasted steel and provisional for St2 and St3 prepared steel surfaces.

Restricted SR.16.11493 May 2016





Product Approval @Aramco













HiCO₂ Dry Ice Blasting



Most innovative technology that uses high-density CO_2 as a form of blast medium, which eliminates the need for extraction, waste removal, and encapsulation. The process also offers you the opportunity to blast and paint at the same time. Used for removal of heavy corrosion, epoxy coatings, PFP coatings and hard scales and is the world's first corrosion removal system using dry ice. The world's first mobile high-density dry ice production system and are pioneers in offshore dry ice blasting projects. Significant savings due to the reduction of site preparation, clean-up costs and waste disposal costs as there is no waste as the ice evaporates. Significant time saving as it takes on 25% of the total time compared to traditional methods (eg. Grit blasting).

SURFACE PREPARATION

Recent tests have achieved the following results, following blasting with our system:

- Cleanliness inspection in line with SA2.5 standard
- Profile reading 70 microns after blasting Cat D corroded surface
- Salt readings 0 after blasting the above
- Adhesion tests readings of 15-27MPa achieved on the above surface after recoating

Generating a new surface profile

DI Global carried out TSA testing with the Shell TRT department.

Tests past which proved the DIG MM system is capable of producing a surface cleanliness & sufficient profiles to pass TSA adhesion and bend tests.







Technology achieves significant savings due to the reduction of site preparation, clean-up costs and waste disposal costs.

SAFETY AND ENVIRONMENT

Technology is safe to use, with reduced hazards to the operator and surrounding environment. The CO2 we use comes from recycled sources.

TRACK RECORD

Our client list includes the following:

• Shell, Total, Valero, Nexen, EnQuest and Brunei LNG

CASE STUDY

The table below documents a recent case study and the savings that were achieved. The time savings were realised through the lack of encapsulation and clean-up, completing the scope in just under 25% of the time for traditional methods.

Activity	Grit Blasting	DIGMM System	Time Saving
Encapsulation	4.5 hours	0.2 hours	4.3 hours
Blasting	2 hours	2 hours	0 hours
Clean Up	2 hours	0 hours	2 hours
Total	8.5 hours	2.2 hours	6.3 hours







Comparison Between Conventional and HiCO₂ Dry Ice Blasting



- □ Time taken to tape up stainless steel and encapsulate first half:
 - 1 hour 30mins for x 3 man
- □ Time taken to blast the first half:
 - 2 hours of trigger time x 1 man
- □ 27 bags of garnet
- □ 675 kgs of garnet
- Clean up all of Garnet:
 - 1hour x 2 man
- Total Man hours for first half set-up, blast, clean up:

8hours 30 mins

Grit blasting

vs

Dry ice blasting



- □ Time taken to tape up stainless steel and encapsulate FULL works:
 - 10mins x 1 man
- □ Time taken to blast the FULL works
 - 1 hour of trigger time x 2 man
 - 10 mins of Bristle blast x 1 man
- □ 100kg of Dry Ice
- Clean up
 - N/A
- Total Man hours for FULL works set-up, blast clean up:

2 hours 20mins



Comparison Between Conventional and HiCO₂ Dry Ice Blasting (con't)



Grit blasting vs Dry

Dry ice blasting







REMOTE PRODUCTION

HiCO₂ Dry Ice production units are fitted with the latest in dry ice production technology. Various sizes and capacities can be accommodated. Our standard equipment is delivered in a 10ft shipping container.







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SUMMARY

Expertise:

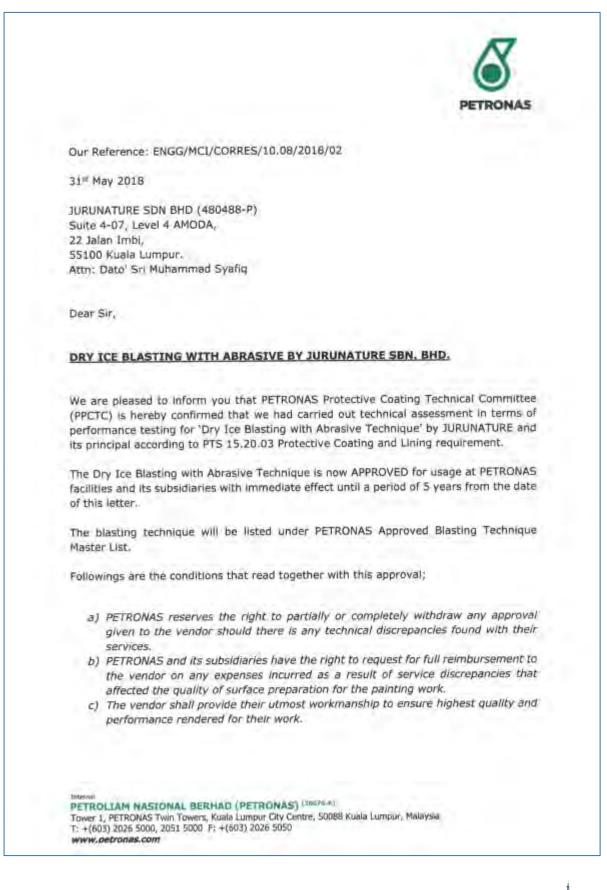
- Dry Ice Blasting technology (either HiCO₂ alone OR with MM under high air pressure to remove various contaminants)
- ✓ Pioneer in offshore dry ice blasting projects
 - The revolutionary, patented technology has been developed specifically for **surface preparation and fabric maintenance purposes** in the Oil & Gas industry, and similar applications
- ✓ World's first heavy corrosion removal technology using dry ice
- ✓ Removal of epoxy coatings, PFP coatings & hard scales
- ✓ **<u>No salt residue</u>** (eliminate premature coating failure)
- ✓ World's first mobile high-density production system
- ✓ The technology achieves surface preparation in line with international coating standards, and has been approved by major coating suppliers.
- ✓ Equipment is **ATEX Certified** for use in **Zone 1** environments.

Ultimately:

Reduce cost, improve efficiency & minimise waste (30-50% savings in blasting costs, 50% increase in productivity)



PETRONAS Approval Letter – May 2018



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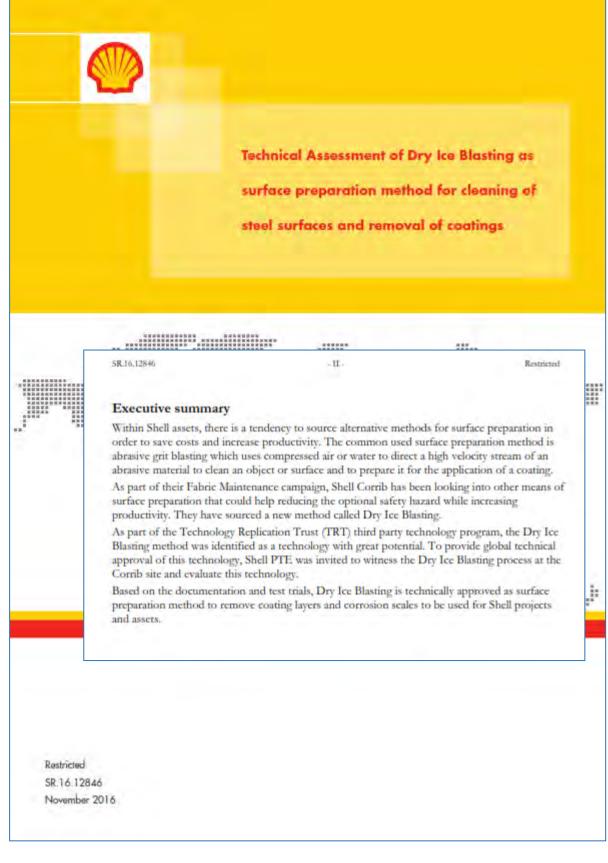
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PETRONAS Approval Letter - May 2018

Page 2 of 2 We are looking forward to your active participation in our energy business. Thank you, Yours sincerely, For PETROLIAM NASIONAL BERHAD (PETRONAS) Muhammad Hawari bin Hasan Chairman for PETRONAS Protective Coating Technical Committee Group Technical Solutions Materials, Corrosion and Inspection (MCI) Infrastructure, Engineering Department Group Technical Solutions Project Delivery & Technology PETRONAS C.C Head Infrastructure, Engineering Group Technical Solutions Project Delivery & Technology Head Material, Corrosion and Inspection Engineering Group Technical Solutions Project Delivery & Technology Custodian (Inspection) Material, Corrosion and Inspection Engineering Group Technical Solutions Project Delivery & Technology PETROLIAM NASIONAL BERHAD (PETRONAS) (30076-8) Tower 1, PETRONAS Twin Towers, Kuala Lumpur City Centre, 50088 Kuala Lumpur, Malaysia T: +(603) 2026 5000, 2051 5000 F: +(603) 2026 5050 www.petronas.com



SHELL Technical Assessment – Nov 2016









- Passive Fire Protection Services
- Jurunature's PFP Casting System
- JuruFlex J120 Jet Fire Jacket System
- Fire & Blast Protective Systems
- Fire Rated Doors
- FRP Grating Systems
- Welding Electrodes
- Field Joint Coating Services
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- Vegase Safety Engineering in Gas Detection, Liquid Hydrocarbon
- ProTXcoat High Temperature Insulation and Repair Coating
- Sacrificial Anodes with Induction Melting Technology
- VSAT Systems and ICT Solutions



Passive Fire Protection

JOTUN

Jotachar JF750

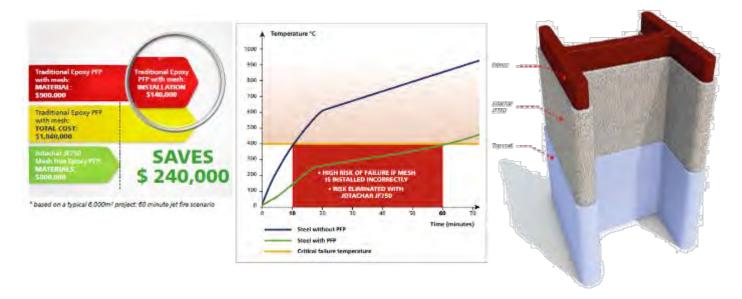
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A cornerstone of *JURUNATURE* 's business is Passive Fire Protection Services (PFP). *JURUNATURE* have developed to become the leading contractor in Malaysia for the supply and application of Epoxy Passive Fire Protection systems. *JURUNATURE* have developed a strong relationship with Jotun, who are one of the world's leading manufacturers of paints, coating and powder coatings, and who have introduced the next generation of epoxy passive fire protection, which others considerable benefit to the industry.

Jotun introduces Jotachar JF750, the industry's first mesh free next generation solution for hydrocarbon and jet fires. Jotachar JF750 incorporates an advanced fibre matrix, eliminating the need for complex mesh reinforcement. When exposed to a fire, Jotachar JF750 produces a robust and temperature stable insulating char whilst risks associated with incorrect mesh installation are eliminated.

Jotachar's mesh free solution provides significant benefits for owners, fabricators and applicators compared to systems that require mesh reinforcement:

- Increased productivity
- Installation time reduced with up to 50%
- Maintenance cost reduced
- Saves material costs with up to 50%
- Less risk
- Potential one-coat system for 30 or 60 minute jet fire scenarios



JURUNATURE's PFP Casting System

PROCAST PFP Casting systems. (Jurunature's own and manufactured)

For items requiring maintenance, such as valve or flange; removable PFP casting is used. The protection rating provided is determined by the thickness of the PFP application, plus the thickness and type of material it is covering. The PFP thickness is also determined by the fire protection rating requirements of the client.







A foam cut-out for trial fitting to a flange



Valve casting sealed to the quick release connector's flange, to allow uninterrupted access to the quick release connector.



Completed 36" Main SDV, installed and fitted with its PFP castings and wet applied PFP.



SDV after wet application and all but the flange castings are completed. The flange covers were to be fitted offshore, after installation of the valve.



Valve body after wet application. Note, the nameplate and data plate have been left uncovered. They were later covered by removable PFP access panels.







PFP Casting syste - Installed offshore Peninsular Malaysia















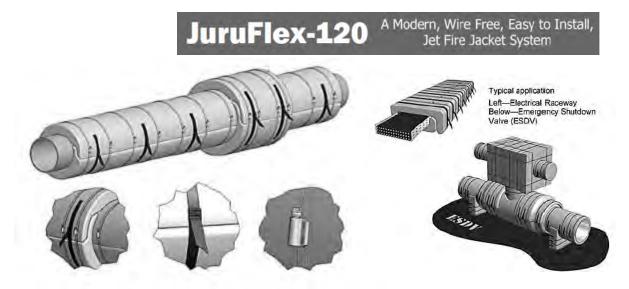








JuruFlex - J120 - Jet Fire Jacket System



JuruFlex-J120 Jet Fire Jacket System, which offers a modern, wire free, easy to install alternative to industry requirements.

The effects of hydrocarbon fires within the oil & gas industries both on and offshore can be catastrophic and can result in major loss of life and capital investment.

JuruFlex-J120 passive fire protection is a best of breed flexible protection jacket system with quilted construction to facilitate complex structural shapes.

JuruFlex-J120 is designed for rapid installation using the **JURUNATURE** safe-locking securing system and is fully removable and re-installable for inspection and maintenance.

JuruFlex-J120 is a certified system, tested to the new and more onerous jet fire standard ISO 2289921 ("Determination of the resistance to jet fires of passive fire protection materials").

JuruFlex-J120 can be installed around critical plant shutdown equipment such as valves and actuators, pipes and associated equipment, electrical raceways, junction boxes and vessels.

Advantages of JuruFlex-120

- Simple to install and remove
- Inspection hatches can be incorporated
- Asbestos free
- Manufactured using non RCF fibre
- All testing witnessed & certified by Lloyd's Register
- J120 certified
- NO lacing wire

Typical JuruFlex-120 applicators

- Valves & Actuators (ESDVs, MOVs etc)
- Vessels
- Pipework & Flanged Joints
- Electrical Raceways (cable trays & conduits)
- Junction Boxes





Fire & Blast Protective Systems



www.jurunature.com

Mech-Tool Engineering Ltd [MTE] is the leading global supplier of solutions protecting people and equipment from fire, blast and radiant heat hazards for the offshore and onshore oil and gas, nuclear, renewable energy, chemical and petrochemical industries.



JURUNATURE

provide Fire & Blast Wall solutions and were the first to fabricate outside MTE premises for Kumang under the supervision of MTE.

Blast Walls are high integrity fully welded gas tight systems manufactured from profiled steel and insulated to achieve the specified fire ratings. They are resistant to overpressures in excess of 7 barg and have been designed and supplied with fire ratings of up to H120 and 60 minute jet fire, type approved by Lloyd's Register. We have performed well over 100 full scale blast tests to prove the validity of the fire wall design procedure,

Blast Relief Systems are tailored to the individual requirements of each project, taking varying aspects of the specification into account to offer the optimum solution. Fire Walls are high integrity, fully welded gas tight systems manufactured from profiled steel and insulated to achieve specified fire ratings up to H120 and 60 minute jet fire, which are type approved by Lloyds Register. Lightweight prefabricated walls are designed to achieve the most cost-effective and efficient solution to the specified hazard. To prove the validity of the fire wall design procedure we have performed well in excess of 100 full scale fire tests. For simplicity of installation they require no intermediate support steel, whatever the span; and being stainless steel they are maintenance-free.







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www.jurunature.com

Since 1975, Rapp Bomek delivered more than 35,000 doors to oil and gas installations, ships and other projects to Norway • Australia • Brazil • Canada • China • Europe • Korea• Middle East • Russia • Southeast Asia • West Africa • USA

Rapp Bomek designs and manufactures full range of project specific doors:

- **manual-, pneumatic- and electric operated** sliding doors to meet the requirements in SOLAS 74 and IMO FTP code and according to NORSOK standard C-002: M1, M2 and H1.
- Sliding doors product range: NR, A0, A60, H0, H60 and H120.
- Hinged and sliding, Single and double, Light-duty A-0/A-60 rated, Super light-duty A0/A60 rated, Medium-duty A-0/A-60 rated, Heavy-duty A-0/H-120 rated, Combination doors, fire rated and weather/watertight, Non-rated, Louvered, Pneumatically operated, Hydraulically operated and Electrically operated



Service and maintenance

- Professional service team of more than 20 highly trained service engineers who can provide installation and maintenance on all types of fire doors and systems/equipment.
- Extensive experience, and the necessary certificates and safety courses required for offshore work and have performed installations, surveys, maintenance and recommendations for upgrading and cost effective improvements
- Developed a "Total Agreement" concept, utilized by many platforms and FPSOs in order to reduce costs for the platform operators with long-term frame agreements with several oil companies for maintenance on fire doors and fire door systems.





FRP Grating Systems



WE ARE COMMITTED TO QUALITY

When traditional building materials such as wood, steel and aluminum fail to solve your design problems, discover the endless possibilities of STRUCTURAL FIBERGLASS. D.E.F.I. offers the best in FRP Grating Systems. With our large inventories, we are able to provide quick shipments.

Our products are suited for most all industries: Subsea applications, municipal applications, industrial applications, water park applications, as well as decorative applications where strength in the product is a must. View our projects for more information on what we can do.

We will offer you practical alternatives and high-performance composite profiles. We know that traditional materials rot and corrode over time, however, our materials are non-conducive, corrosion resistant, light weight and very versatile.







Welding Electrodes





- Welding Consumables
- Tube. Pipe and Pipe Fittings
- Heat Exchanger and Tube Bundles

The welding company has been the leading manufacturer of high quality welding consumables in Japan for over 50 years. Today with 10 manufacturing and sales bases in Asia, Europe, and the United States, Kobelco are meeting the welding needs of industries throughout the world. Kobelco manufacture welding robots, power sources and equipment which are marked individually or packaged with welding consumables as complete systems. Kobelco's cornerstone of operations is the QTQ promise "Quality products, Technical support, Quick delivery".







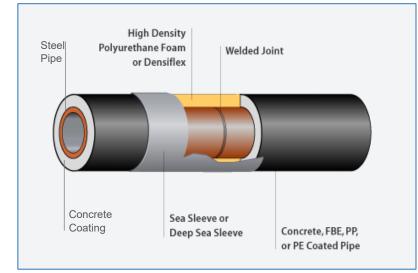
Field Joint Coatings



In the area of Field Joint Coating, *JURUNATURE* continues to provide best in class service to the industry and through its partnership with RAE Energy, we strive to offer innovative solutions that ensure the Field Joint Coating application remains off the critical path of pipe laying.

Concrete Weight Coating (CWC) Infill Applications

Mechanical Protection Anti-Corrosion Applications Fusion Bonded Epoxy Liquid Epoxy Three Layer Polypropylene (3LPP) Application Serviwrap Anti Corrosion Cold Applied Tape System



















Enerthem Sprayable Insulating Coating





Large Industrial oven. Project time line 3 days. 14% energy savings





Large Incinerator, Heat Exchanger and fryer system (180m³). Project timeline in 3 days. **7% energy savings**





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C-Saddle Pipe Supports



A LOW-FRICTION NON-CORROSIVE WEAR PAD SYSTEM



C-SADDLES are the next generation protection between the pipe and pipe support that stops dangerous crevice corrosion

C-Saddle uses a flat sliding surface between the saddle and pipe support - the next generation of pipe/support protection. Numerous advantages of product, including ease of installation, no hot work requirements and providing a long-term maintenance free solution.

C-Saddle utilize a non-corroding Fiberglass Reinforced Pipe (FRP) support base that holds the specially designed non-corroding Nylatron NSM Bearing Pad in place. Major Advantages of the C-Saddle System are;

- C-Saddle, with its peel and stick feature, takes less than a minute to install and requires no mixing, special tools or training. Minimum pipe preparation is required.
- C-Saddle utilize a very high bond strength adhesive along with Nylatron NSM Bearing Pad that will keep the C-Saddle firmly secured to the pipe, when overcoming the friction between the pipe and pipe support associated with pipe movement.
- Most traditional "insulators" because of their design create excessively high point loads between the pipe and the pipe support. In most cases the point loads created have PSI's that exceed the yield strength of the insulating materials. The flat surface of the C-Saddle's Nylatron NSM Bearing Pad increases the loading area on the pipe support. PSI loadings can be reduced over 90% extending the life of the C-Saddle.
- The flat surfaces of the Nylatron NSM Bearing Pad on the C-Saddle will keep the C-Saddle firmly in place in the high vibration areas. C-Saddle will not walk out from under your pipe.



Topside Robotic Inspection





CAPABILITIES

- Independent Robotically Inspections
- ISO 9001:2008 and VCA approved
- Certified inspectors and high-tech equipment
- Real-time followed from ground level
- Minimize downtime during shutdowns
- Safe, time efficient and cost effective

Robots

- Small, remote-controlled, lightweight
- Climb tank walls, ceilings, and pipe
- Excellent for cylindrical objects and uneven or
- flat surfaces
- Interchangeable equipment









RISQ robotics performs independent inspections for e.g. the following industries:

- Oil, gas and chemical industries
- Power plants
- Wind farms on and offshore
- Maritime
- Defense facilities, navy



Emission Monitoring and Reporting

Perfect Point Measuring

- First operations in 1996
- Experts in emission monitoring

Services

- Leak detection (LDAR), SLDAR and flare emission monitoring
- Loss analyses and improvement service
- Asset and Drawings Management Solution
- Energy projects

LDAR

- Leak Detection And Repair (Reporting)
- To control and to reduce fugitive emissions
- Measurements with TVA and Gasfindcamera
- Point by point measuring

SLDAR

- Smart Leak Detection And Repair (Reporting)
- Detect emissions with FLIR (GF320) to find leaks and then measure with TVA Tool.
- SLDAR is more quicker than regular LDAR measurement so it's more cost efficient.



Converting to TPD

Convert drawings to TPD Software and capture leak data for reporting and repair order.

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Fabrication Works



- Structural Fabrication
- Piping & Mechanical
- Electrical & Instrumentation
- Blasting & Painting

JURUNATURE's goal is to provide clients in the fabrication industry the highest quality fabrication in the most timely and efficient manner possible. The number one priority is responsive, personalized service regardless of job size. The company has built an enviable reputation through close client cooperation and the consistent delivery of quality products on time and on budget.

Responsive, personalized service on the fast track

JURUNATURE has extensive experience in fast track fabrication contracts. The company responds quickly with personalized service. The net result is a company that works closely with its clients to meet the critical requirements of contemporary construction methods.









Dredging & Land Reclamation, Offshore, Environmental, Infra Marine



JURUNATURE is committed to conducting its business in a way that minimizes adverse impact on the environment thus we are proud to introduce our partner DEME which is a world leader in the highly specialized fields of dredging, marine engineering and environmental remediation. The Group can build on more than 140 years of know-how and experience and has fostered a pioneering approach throughout its history, being a front runner in innovation and new technologies.

Although DEME's activities originated with its core dredging business, the portfolio diversified substantially over the decades. Today's activities encompass dredging, land reclamation, hydraulic engineering, services for the offshore oil & gas and renewable energy industries and environmental works.

Dredging & Land Reclamation

Dredging and land reclamation are more than just DEME's core activities. They are at the very foundation of the company. DEME is involved in huge, complex dredging and land reclamation projects worldwide, offering customers cutting-edge solutions. Over the past decades, DEME has executed major marine engineering infrastructure works such as the development of new ports, waterways, airports, artificial islands, residential and recreational areas, industrial areas, roads, bridges etc. on all continents.

i. Maintenance Dredging

Maintenance dredging requires a lot of knowledge about the dynamics of an estuary, and even more experience on how to deal with tides, currents, flood channels, bars, bends, and the various nature of suspended material. It is carried out with respect for the environment, reducing overflow and limiting turbidity.



ii. Coastal Protection

Coastal protection provides defense against flooding and erosion, caused by waves and tides, winds, currents and littoral drift. Sea level rising, global climate change and melting of the ice caps will increase the need for coastal defense.



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iii. Port Construction

DEME has a vast experience in port construction. It involves often a multidisciplinary approach. Preliminary soil investigation, surveys, nautical studies, and environmental assessments are necessary. Dikes, breakwaters, and underwater bunds provide protected berthing.

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iv. Capital Dredging

Capital dredging is carried out in a perspective of sustainable development, aiming for the long term and with respect for nature. Often, it is executed in sensitive estuaries with proper dynamics and valuable marine life. Often, it is executed in sensitive estuaries with proper dynamics and valuable marine life.



v. Beach Nourishment

Beach nourishment is a soft alternative to hard coastal defenses and protects against flooding and erosion by dissipating the wave energy. Moreover, it creates an environment for developing tourism and related services. It is



executed with natural elements and allows for a dynamic approach by working with the nature. Beach nourishment restores the natural order and strengthens age-old natural processes.

vi. Land Reclamation

Reclamation creates land for the future: industrial sites; residential areas; ports, airports and artificial islands. It is at the cradle of economic development. Volumes of sand are



transported to the reclamation from a borrow zone at sea or material from capital dredging projects is beneficially used in major land reclamations.





Offshore



DEME Offshore is a leading provider of services and solutions for the offshore energy industry and has a strong track record spanning decades. The new company encompasses our renowned subsidiaries GeoSea, Tideway, A2Sea and EverSea. Integrating these wellrespected, pioneering companies into DEME Offshore provides our customers with a comprehensive offering of solutions, services and equipment.

DEME Offshore is an agile organisation able to offer customers flexible, innovative solutions in both the oil & gas sector and in renewables. We offer a broad portfolio of services including foundation, turbine and substation Transport & Installation, cable laying, Operations & Maintenance activities, as well as full Engineering, Procurement, Construction and Installation (EPCI) and Balance of Plant contracts. For oil & gas and other offshore customers, services include landfalls and offshore civil works, rock placement, heavy lift, subsea construction, umbilical laying and the installation and decommissioning of offshore platforms. We also provide the offshore energy industry with geoscience expertise to help our customers successfully realise their projects from start to finish.

Environmental

DEME Environmental Contractors (DEC), de Vries & van de Wiel, Ecoterres and Extract-Ecoterres are all part of Ecoterres Holding, DEME's group of specialist environmental companies. Their activities include soil decontamination, treatment of polluted soil and dredged sediments, as well as the high-tech cleaning of water, with a focus on design, build and operation using innovative techniques.

i. Environmental Dredging

Environmental dredging is distinctly different from large-scale dredging because of the approach selected. With our advanced environmental dredging techniques DEME and its environmental companies, achieve the necessary high concentration of sediment with low turbidity during dredging.



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ii. Soil Remediation and Treatment

DEME's environmental companies are specialized in remediating contaminated soil



and groundwater. To achieve this, the soil is both completely excavated and processed off-site or the soil and groundwater are processed using in-situ techniques

iii. Landfill Techniques

The environmental companies of DEME have a long tradition in constructing and capping landfills, enabling our organization to assist the client throughout the whole process, from drafting the design, to the management and aftercare of the landfill.



iv. Sediment & Sludge Treatment

DEME's environmental companies are specialized in the treatment of sediment and sludge and recycling techniques, which have been developed by our Research & Development over decades. Some of these technologies, such as Soft Soil Improvement®, have been specifically developed for in-situ treatment, while others are used on



a daily basis in our fully certified sludge processing centers.



v. Water Treatment

As part of the globally active DEC (DEME Environmental Contractors), Purazur focuses on the high-tech treatment of industrial and domestic wastewater, landfill leachate and contaminated groundwater. Only 2.5% of all the water on our blue planet is fresh water, of which around 90% isn't even available. About 70% of the



available fresh water is currently being used around the world. Due to the further growth of the world population and the industrial development, both the need for fresh water and our global footprint will only increase.

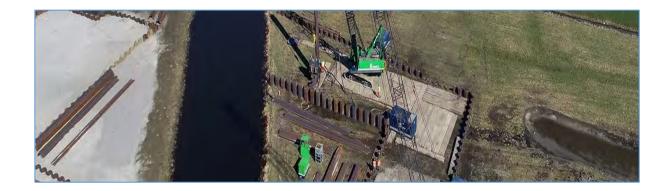
vi. Erosion Protection Works

For more than 20 years, DEME's daughter company DEC has been active in preliminary studies, the execution and aftercare of a wide range of hydraulic works, especially where special asphalt materials are used.





Infra Marine



DEME's subsidiary DIMCO (DEME Infra Marine Contractors) is involved in marine infrastructure and civil works that complement and reinforce DEME's activities. These include design and construction of hydraulic and maritime works for jetties and port terminals, locks, weirs, bored/immersed/cut and cover tunnels, large and complex earth moving works, foundations and marine works for bridges and offshore constructions, civil works for harbour construction, dams and sea defenses, canal construction, revetment work, quay wall construction and shore protection amongst others. The company also has a specialized engineering and design department, which can assist DEME clients.



Vegase - Safety Engineering in Gas Detection, Liquid Hydrocarbon

The combination of its expertise in safety engineering, safety instrumentation and industrial IT enables VEGASE CONTROLE to design innovative industrial solutions for the monitoring of installations as different as STORAGE, that a VAPOCRACKER, or a BAG (Glove box) NUCLEAR. VEGASE CONTROLE offers a wide range of solutions ranging from simple point detection to integrated systems of several hundred sensors with multi-station and multi-profile supervision. Our field of intervention includes: the prescription, the studies, the supply, the realization, the commissioning and the maintenance on site.

Design and distribution of security detection products

explosimeter

Catalytic oxidation. Infrared, surface sorption, catharometer

Optical Semiconductor

toximeter

Electrochemical Laser

Electrochemical liquid or gel, laser optics

oxygen meter

Engineering and Realization of Security Systems

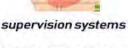


measuring system

Instrumented vein, sampling box

Field Acquisition, Security Data Processing

acquisition systems



Multi-Risk Contract System, Decision Support System



securing storage

Danger study, secure storage







Sensor exploiting the noise emitted in the ultrasounds by a leak.





Gas detection

Transmitter sensors for gas leak detection allow atmospheric monitoring:

- The explosimeter for monitoring the risk of explosion. •
- The toximeter for the monitoring of the toxic risk. •
- The oxygen meter for monitoring the risk of anoxia. •
- The wide-spectrum ultrasound sensor for global monitoring of noises emitted by leaks. •

The sensors can be operated alone with their internal relays, in a safety PLC or through the proposed acquisition systems.

Acquisition systems



Mural or Rack 19 "

19 " rackmount multi-channel or wall-mounted



Standalone radio beacon





By secure bus

Specific multi-transmitter Digital Loop Acquisition System. Autonomous management acquisition system for 100 channels system -> no wired infrastructure concentrator for the realization of zoning.

Trace detection

Families of analyzers



Hygrometer

Hygrometry by Infrared Absorption



oximeter

by infrared absorption



Selective toximeter

laser CH4, HF

VOC Toximeter

Organic Compounds by

PID Photo-ionization.

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Selective measurement of H2O Oxygen O2 selective measurement Selective measurement of gas VOC Measurement Volatile traces by absorption Infrared



Specialized Fire / Flame Detection

Range of fire solutions



Multiple Infrared Flame

Optical detection of flame multi spectre Infrarouge IR3



Combined Flame Detection

Optical Flame Detection Ultraviolet Combined Multi-Infrared UV2IR



Reacton ™ detection system

Fire Detection and, or Extinction. Tube Destructive Thermo, Reacton ™

Liquid Detection

Linear Liquid Leakage Sensor



Liquid Hydrocarbon Detector Cables. Geo-location of Leak TT5000 Liquid Hydrocarbon Leak Detector (HL)



Detector cables for Solvents, Ethanol. Geo-location of Leak of acids. Geo-location of Leak Detector cables for Solvents, Ethanol. Geo-location of Leak



Sensor cables for leakage Linear Voltage Leak

Detector TT3000



Water Leak Detection Cables Linear Leak Detector TT3000

Specific Detectors Sensor



Fixed Hydrocarbon Liquid Detector Point sensor for detection. Fast Fuel Sensor TT FFS



Hydrocarbon Pollution Detector Liquids supernatant TT FFS Fast Fuel Sensor and Flotation Instrumentation



Hydrocarbon Piezometer Permanent Permanent liquid hydrocarbon detection system



Piezometer Ethanol Permanent Permanent detection system Ethanol detector



ProTXcoat - High Temperature Insulation and Repair Coating





ProTXcoat Coatings and Repair Materials Technology

ProTXcoat is manufacturing of engineered epoxy (novolacs) and polyurethane repair compounds and coatings. ProTXcoat was founded by the leading R&D experts and Application Engineers in the field of Composite Coating with decades of application experience! Our products and know-how are supplied to countries worldwide and are used by some of the largest companies globally.

ProTXcoat Corrosion Protection products are used in many industries and through our extensive worldwide network of contractors we are able to offer onsite technical support, training, presentations & seminars backed by project method statements & specifications.

We specialize in offering solutions against abrasion, wear, impact, chemical attack, leak repair and corrosion on process systems and equipment.

ProTXcoat combines two decades of know-how with service to: Petro Chemical Plants, Chemical Plants, Pulp and Papermills, Cement plants, Power Generation, Marine and Offshore, Food and Pharma, and general manufacturing.





Metal

• Corrosion (Corrosion Protection System)

ProTXcoat Corrosion Protection products are ideal for protecting metallic and concrete surfaces from strong chemicals, weathering and UV degradation.



• Abrasion - Abrasion, Erosion, Wear and Impact Protection

The type of wear where particles move freely across a surface. Unless the metal is hard enough to resist, the particles cut grooves into the surface and cause costly shutdowns and replacements.



Chemical Attack

Our Chemical Protection Coatings have been independently tested in full chemical immersion in industrial chemicals such as 98% Sulphuric Acid, Sodium Hypochlorite, 37% Hydrochloric Acid and Sodium Hydroxide.



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Pump Repair

Our pump repair and lining materials are proven to protect metallic surfaces from sea, river, drinking and waste water, as well as giving excellent resistance to a wide range of industrial chemicals.

Heat Exchangers

ProTXcoat offers an extensive range of epoxy-based metal repair materials and ceramic coatings designed to repair and protect heat exchangers from erosion and corrosion.



• Flange Repair and Reforming

ProTXcoat two component solvent free epoxy Novolac coating designed for high temperature immersion conditions. Once cured it can withstand continuous immersion conditions up to 150°C and can upgrade the performance of conventional materials of construction.



• Pipeline Coatings

Sustainable eco-efficient Pipeline-coatings and asset conservation. ProTXcoat offers Epoxy and Polyurethane systems for optimal protection in harsh environments.





• Tank and Vessels

ProTXcoat offer rigid protection to steel and concrete tanks and storage basins.



Concrete

• Concrete Repair

A fast curing 3-part concrete mortar which is ideal for repairs to damaged concrete surfaces.



Concrete Protection

ProTXcoat has a diverse range of concrete repair materials that can repair badly damaged cementitious surfaces and protect them from wear, abrasion and chemicals







Containment Areas

ProTXcoat Chemical Containment coatings offer outstanding chemical resistance to a wide range of industrial chemicals.

• Safety Flooring

ProTXcoat floor coatings and screeds providing highly durable and wear resistant surfaces.



• Self-Levelling Floor Systems

ProTXcoat floor coatings are a range of solvent free epoxy resin based systems ideal for resurfacing and rebuilding concrete surfaces.

Maintenance

• Leak Repair

ProTXcoat pipe repair and pipe wrapping materials can be used to isolate and seal small pinholes or cracks in process pipework, or used to encapsulate long lengths of large diameter pipe.

• Plate Bonding

ProTXcoat metal repair systems are recognized throughout industry as a credible alternative to welding. Seal leaking tanks & pipes, cold bond irregular shaped surfaces by using our epoxy metal repair systems







• Maintenance Repair and Overhaul Supplies

ProTXcoat has a wide range of products ideally suited to the Maintenance, Repair and Overhaul market. From metal repair to underwater repair and concrete repair materials, our product range is used across the world to repair, protect and upgrade components, equipment and process systems.

Roof and Waterproofing Systems

• Waterproofing and Sealing

Range of single component waterproofing materials is able to seal virtually any surface with a strong, flexible membrane to give long term protection from UV degradation and weathering. The ProTXcoat range of waterproofing materials includes water-based acrylic, solvent based acrylic & solvent based polyurethane coatings.



Gutter Repair

ProTXcoat offers a range of solvent based and water-based roof and gutter repair membranes that are designed to seal and protect bitumen, concrete, metal and GRP surfaces.

Roof Repair

ProTXcoat roof and gutter membranes give year-round coating capability, and can even seal leaking roof surfaces through ponded water.







Marine and Offshore

• Onboard Repair Kits and Marine Coatings

ProTXcoat's comprehensive range of rapid and cold-curing marine coatings and metal repair composites has been used by the marine industry for many years. Our products are specifically designed to withstand harsh offshore conditions and have exceptional resistance against erosion and corrosion.





• Rudder and Propeller Repair

ProTXcoat ceramic enhanced coatings and engineering repair materials can be used to rebuild, resurface and protect metallic surfaces subject to cavitation, bi-metallic corrosion and abrasion.



Hull Coatings

ProTXcoat offers a wide range of coating systems for both Dry-Dock repairs, new builds and onboard maintenance.



Leak Repair

Range of pipe repair materials are based on the latest epoxy and polyurethane resin technology. ProTXcoat pipe repair and pipe wrapping materials can be used to isolate and seal small pinholes or cracks in process pipework, or used to encapsulate long lengths of large diameter pipe.

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Sacrificial Anodes with Induction Melting Technology



HOUSTON ANODES GROUP

- Protecting Offshore, Subsea and Onshore Assets and Infrastructure since 1977.
- Designing, Manufacturing and Delivering High-Quality Aluminum and Zinc Sacrificial Anodes.
- Equipped with a state-of-the-art laboratory and superior induction melting technology.
- Headquartered in the Energy Corridor of Houston, TX.
- Management System Certificate ISO 9001-2008 by DNV.



CORROSION

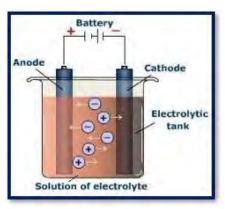
- Metals extracted from its primary ore (metal oxides) have a natural tendency to revert to that state under the action of oxygen and water.
- **Corrosion** is an **electro-chemical process** that involves the passage of electrical currents on a micro or macro scale by an "**anodic**" **reaction**.
- This reaction **produces free electrons**, which pass within the metal to another site on the metal surface (**the cathode**), where it is consumed by the "**cathodic**" **reaction**.
- Corrosion process is initially caused by:
 - **Difference** in **natural potential** in galvanic (bimetallic) couples. **Metallurgical variations** in the state of the metal at different points on the **surface**.
- Oxygen rich areas become the cathode and oxygen depleted areas become the anode



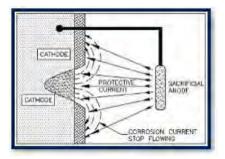




CATHODIC PROTECTION



- The principle of **Cathodic Protection** is in connecting an external anode to the **metal to be protected** and the passing of an **electrical dc current** so that all areas of the metal surface become **cathodic** and therefore do not corrode.
- The current is a result of the **potential difference** between the two metals.
- Causes a **positive current** to flow in the electrolyte, from **the anode to the steel**.
- Surface of the steel becomes more negatively charged and becomes the cathode.



- A Galvanic System requires:
 - i. Sacrificial anodes
 - ii. **Direct welding** to the **structure** or a **conductor connecting** the **anode** to the **structure** operations.

HOUSTON ANODES GUARANTEE

Homogeneous alloys always conforming to exact international quality standards and specifications.

NACE SP-0387 & SP-0492, DNV RP B401, ISO 155589-2, NORSOK M-503

Houston anodes are fabricated using only **raw materials** of the **highest purity**, assuring **superior electrochemical** and **chemical properties**.

Our team of professional engineers, manufacturing and sales personnel are committed to provide the best products with **unparalleled customer service**.





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NOT A SINGLE CLAIM IN 40 YEARS



QUALITY CONTROL

- In-house state-of-the-art Laboratory equipped with a Bruker-Quantron Magellan Q8 spectrometer.
- All raw materials inspected and tested upon arrival prior to release for production.
- Chemical results verified against MTR's.
- Chemical analysis performed on every heat.
- Electrochemical properties performed on every batch according to NACE TM-0190.
- Rigorous Inspection and Testing Points.
- Scheduled equipment calibration per OEM.



RAW MATERIALS

- Primary High-Grade Raw Materials
- Premium US and global suppliers
- **Primary Aluminum 99.9%** purity
- Special High-Grade Zinc 99.99% purity
- Indium 100% purity
- ASTM Steel anode cores & mounting structures





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TECHNOLOGY



Anode Melted By Electromagnetic Induction Technology Complete Lifetime Anode 100% Worn-Out Material 0% Non-Useful Material

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ADVANTAGES

- Guarantees an 100% homogeneous alloy of exceptional purity of the • electrochemical composition.
- Controlled temperature melting process. •
- The process assures identical results. •
- Consistent batches and final product every time. •
- Heat is produced **instantly** and within the metal being melted. •
- Without flames and without touching the material to be heated. •
- Fast Cycle Times •
- Free of Hydrogen & Carbon Bubbles Porosity •
- **Favourable working conditions** •
- Doesn't heat up surrounding area or environment. •
- **Environmentally Friendly** •
- Clean and odourless heating process. •
- No harmful emissions or noise •
- No polluting fuel or burners •
- **Energy Efficient** •
- Power is on only when being utilized. •
- Reduced metal loss. •
- Better product yield. •



SAFER, EMISSIONS FREE, REDUCE METAL LOSS









VSAT Systems and ICT Solutions



VSAT Systems

JURUNATURE continues to provide best in class service to the industry and through its partnership with ITC Global which is the world's leading satellite network for highly connected remote operations.

We specialize in satellite-based communications for industrial operations in extreme environments, including deep-water energy exploration, remote mining and transoceanic shipping. Today our partner, ITC Global is the number one provider of satellite communications networks to the mining industry and among the top three providers to the oil and gas industry.



ICT Solutions

JURUNATURE is proudly to present our ICT technology products and services that offer comprehensive solutions including the provision of research, design, development, marketing and maintenance services or supply chain solutions, turnkey software development for other business application, professional IT services, hardware and software products implementation.

Furthermore, we provide consultancy service to clients regarding technical, operational and project management for their holistic systems. These include, but not limited to, issues on backend integration, security issues and online strategy. The Company services large multinational companies on their worldwide integration compliance.







HEALTH, SAFETY & ENVIRONMENT



At **JURUNATURE**, we believe that Health & Safety forms an essential priority in conducting our business.

The health, safety and well-being of our employees is of utmost importance and as a company, we continually work to ensure all employees place the same emphasis towards health and safety during the course of conducting our business. We also firmly believe that the co-operation and commitment of all employees is essential in achieving the highest standard in Health, Safety and Environment management.

In ensuring a sustainable safety culture, we empower our staff to continually improve and spread the safety message by ensuring they themselves work safely and in accordance with the company's safety procedure requirements and legislative requirements.

In pursuing our goal of "Zero Harm to People, Damage to Assets and Environment".





JURUNATURE is committed to the following:

- Clear identification of work and carrying out a detailed risk assessment and making sure relevant information about work place hazards and their control measure are available to our employees and business partners at all times
- Making sure that Safety, Health and Environment obligations are precisely determined and communicated
- Ensuring that all our employees and business partners are provided with information applicable to legislative standards and requirements
- Carrying out exhaustive audit and reviews of our sites to ensure full compliance
- Carrying out routine senior management and board reviews of safety performance and to initiate counteractive actions as necessary
- Ensuring our employees and business partners are involved and consulted on all safety matters
- Ensuring sufficient resources are made available to achieve the objectives of the company's policies and procedures

JURUNATURE strives to uphold the health safety & environmental aspects in its manufacturing and business operations by:

- Complying to ISO 14001 & OHSAS 18001 standard requirements, applicable legal requirements, as well as client requirements with regards to HSE and shall make available all documents, services and facilities related to HSE issues so as to enable proper performance of HSE related activities
- Preventing pollution, injury and ill-health protect its employees, the environment and all third parties including their equipment's from any hazard that may arise as a result of the WORK
- Continuously improving the HSEMS and ensuring its effective implementation for continual improvement
- Conserving natural resources from extinction.





Major HSE Appreciation





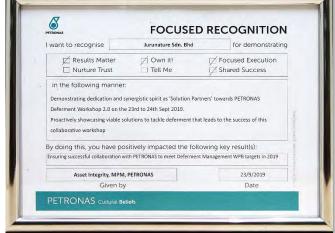


Petronas - BOKOR CPP Phase 3 Redevelopment Project Awards



Awarded BEST SUBCONTRACTOR





HSE Award - 1 million Safe Man-Hours

Focused Recognition





Project Awards



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QUALITY ASSURANCE & CONTROL

Quality

Our prime objective is customer satisfaction and confidence. This is centered on the products we market and the product support services we are able to provide our customers.

We are fully committed to the concept of Total Quality Management and seek continuous improvement in all of our businesses and operations. In our quest for excellence, we recognize that the co-operation of our employees and our business partners is vital.

We have developed our Quality Culture based upon open and honest communication. We believe in establishing long term partnerships with customers, employees, suppliers and we manage our business in an open manner. We have programmes in place whereby our employees are encouraged to review, develop and contribute fully, towards improving all our processes. We bring our experience, best practices and tools to be applied to our business partner's specific business requirements.

Some highlights of our quality system are:

- A quality culture that stands for delighted business partners, committed employees and continuous improvement
- Proven practices
- Striving to meet our goal of Zero Defects
- ISO 9001:2015 since June 2008





Quality Policy

JURUNATURE strives to become a vast and dynamic business organization by:

- Complying to or surpassing the ISO 9001 standard requirement, applicable legal requirement, as well as client requirements
- Continuously improve the effectiveness of the JURUNATURE Quality
- Management System
- Ensuring quality of production services that meets the quality standard at a competitive price
- Providing a conducive & proper work environment in order to achieve
- JURUNATURE's Quality Policy
- Enhance the knowledge, know-how and motivation of our employees depending on the development of knowledge and technology applicable to JURUNATURE's operation, to make sure continuous client satisfaction.







ISO CERTIFICATIONS

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Quality Management System

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Environmental Management System



Occupational Health & Safety





CLIENTELES & KEY ACCOUNTS





KEY INTERNATIONAL PARTNERS











RAPP BOMEK

OTEC







KOBELCO



















LICENSES AND CERTIFICATIONS

PETRONAS LICENSES

MOF CERTIFICATION

CIDB MALAYSIA

DEWAN PERNIAGAAN MELAYU MALAYSIA

SURUHANJAYA TENAGA

SIJIL PEROLEHAN KERJA KERAJAAN (SPKK)

TENAGA NASIONAL BERHAD

