

EM&I GROUP TECHNICAL CERTIFICATIONS



A large version of the EM&I logo, featuring the letters 'EM&I' in a bold, italicized, yellow font, set against a teal rounded rectangular background.

EM&I (UK) LTD



Reference: ZF
File Ref: 24

EM&I Group
Forthside House
3, Abriochan Road
Wilmington, Cleethorpe
SK15 2ND, UK

2 October 2014

Attention: Mr. Danny Constantin, Chief Executive Officer
Subject: "ODIN" system for Underwater Inspection in Lieu of Drydocking (UWILD)

Dear Mr. Constantin,

I am writing in regard to the EM&I "ODIN" system for Underwater Inspection in Lieu of Drydocking. ABS has witnessed this system as it was used in two ABS Classed, Bahamas Flag, Floating Production Units, the FPSO *Flammarion*, IMO No. 7389405 and the FPSO *Experte*, Same IMO No. 7372094.

The UWILD surveys on both units were carried out to the satisfaction of the attending ABS Surveyors and found acceptable for Class.

If you would like further information please do not hesitate to contact me.

Regards,

John D. Forreth
American Bureau of Shipping
Chief Surveyor/Offshore

ABS PLAZA, 1405 NORTHCHASE DRIVE, HOUSTON, TX 77060-0001
TEL: (281) 477-9600 FAX: (281) 477-9600



Certificate Number: 23-4152111-B
Effective Date: 11-December-2023
Expiry Date: 10-December-2026
ABS Post Office: Aberdeen, UK
Company's Website: www.emandiltd.com

CERTIFICATE OF Recognized Service Supplier

This is to certify that

EM&I (UK) LTD.

located at

18 Farburn Terrace, Dyce, AB21 7DT, Aberdeen, United Kingdom.

having been audited by ABS and having given a satisfactory practical demonstration of the service listed below, is recognized by ABS as a Service Supplier to provide services which ABS Surveyors may rely on to make decisions affecting classification or statutory surveys.

Remote Inspection Techniques as An Alternative Means for Close-up Survey of Ships and Mobile Offshore Units

Attached Certificate Appendix provides specific scope of approval, authorized personnel, manufacturer authorizations, and subcontractors.

It is the responsibility of the Service Supplier to employ, train and qualify persons in the service provided. If the service requires approval from manufacturers, the Service Supplier is responsible to maintain contact with the manufacturer and maintain any service manuals up to date. Where required by the category of service, the Service Supplier shall provide valid evidence that it is authorized or licensed by the equipment manufacturer to service the make and models of equipment for which approval is sought. If approval from the manufacturer is not obtained, a surveyor must be present at time of survey to continue work. Alternatively, current written instructions from the flag state are to be obtained to continue work without the surveyor present. Service Suppliers must present photo identification, evidence of qualification and authorizations from manufacturers, as applicable, at the time of service.

The ABS office issuing this certificate is to be kept updated with changes to the management of the company, employees, equipment and models on the authorization list and any changes made.



John D. Forreth, Surveyor

CLS-SFM-00040 Rev 20

Page 1 of 3



Certificate Number: 23-4152111-A
Effective Date: 11-December-2023
Expiry Date: 10-December-2026
ABS Post Office: Aberdeen, UK
Company's Website: www.emandiltd.com

CERTIFICATE OF Recognized Service Supplier

This is to certify that

EM&I (UK) LTD.

located at

18 Farburn Terrace, Dyce, AB21 7DT, Aberdeen, United Kingdom.

having been audited by ABS and having given a satisfactory practical demonstration of the service listed below, is recognized by ABS as a Service Supplier to provide services which ABS Surveyors may rely on to make decisions affecting classification or statutory surveys.

In-Water Survey

Attached Certificate Appendix provides specific scope of approval, authorized personnel, manufacturer authorizations, and subcontractors.

It is the responsibility of the Service Supplier to employ, train and qualify persons in the service provided. If the service requires approval from manufacturers, the Service Supplier is responsible to maintain contact with the manufacturer and maintain any service manuals up to date. Where required by the category of service, the Service Supplier shall provide valid evidence that it is authorized or licensed by the equipment manufacturer to service the make and models of equipment for which approval is sought. If approval from the manufacturer is not obtained, a surveyor must be present at time of survey to continue work. Alternatively, current written instructions from the flag state are to be obtained to continue work without the surveyor present. Service Suppliers must present photo identification, evidence of qualification and authorizations from manufacturers, as applicable, at the time of service.

The ABS office issuing this certificate is to be kept updated with changes to the management of the company, employees, equipment and models on the authorization list and any changes made.



John D. Forreth, Surveyor

CLS-SFM-00040 Rev 20

Page 1 of 3

Type of Services Represented:

- "LoNo" ODIN Valve installation/inspction
- In-Water Survey (IWS) using ROVs Approval to carry out underwater inspections as a substitute for dry docking.
- Remote Inspection Techniques (RIT) Approval for drone, camera and ROV based inspections for internal and external structures.

These certificates demonstrate EM&I UK's capability to deliver safe, efficient, and non-intrusive inspections under ABS compliance.



DNV-GL

COPY OF EMAIL LETTER FROM DNV-GL TO JAVY RUIJDTT

31 January 2025

Dear Javy,

Thank you for the additional information.

For the sake of good order please note that DNV-GL is open to new techniques presented to the industry and in this case for inspection.

It is as an stakeholder's interest to find means that push the development techniques forward and DNV-GL may accept the use of them providing they demonstrate an equivalence to the intended requirement.

We are positive to the capabilities as presented by the ODIN system. As agreed we will attend general demonstrations to support your request to have a formal letter of acceptance for the ODIN system issued.

We have no objections for the ODIN system to be used prior to this letter being issued providing that it meets the requirements as set forth in our rules for bottom inspection (Ship and/or Offshore rules as applicable) and follows the guidance note on UWSI/ODIN-GL. In a case to case inspection plan it is to be presented prior to inspection for review and performed to the satisfaction of the attending surveyor.

You may use this statement in support towards your customers.

The attending contact in Canada is Mr. Richard Kennedy.

Best regards,
for DNV-GL: Ole Lindset, Aberdeen

Jarven van der Veer
Station Manager, Aberdeen (Acting)
Ship & Offshore Class
DNV-GL - Maritime

E-mail: jarven.vanderveer@dnv.com
Desk-mail: jarven.vanderveer@dnv.com
Mobile: +46 7053 602761 | Direct: +46 7324 33615

DNV-GL
Approved by: **N141758N**

VERIFICATION STATEMENT
FOR INSPECTION OF ROVINS VIA ROV

Valid for products not subject to DNV-GL classification requirements.

Particulars of Product

Product Name: Inspection of mooring via ROV
Type designation: Underwater mooring inspection
Application/context: NA
SIC/MAT/IEC: _____
The product is intended for: STOCK

Requirements are based on: Client Specification "Eemnessa-hub_gms_inspection" - rev. 9

DESIGN AND DRAWINGS, IF ANY, ARE MARKED AS SHOWN.

The product / material has been marked: **N141758N** on:

Particulars of Vendor and Purchaser

Vendor: EM&I
Vendor reference: TBC
Purchaser: _____
Purchaser reference: _____

Issued at Newcastle-upon-Tyne on: **2017-09-11** for **DNV-GL**

This document has been digitally signed and will therefore not have handwritten signatures.

Generators, Jarven van der Veer

DNV

APPROVAL OF SERVICE SUPPLIERS

Certificate No. **A08589WQ**
Revision No. **2**

This is to certify that

EM&I (UK) Ltd
ABERDEEN United Kingdom

is granted acceptance for **Thickness measurements, in accordance with Class Programme DNV-CP-0620.**
Category 1 Authorized in its measurements on all types and sizes of steel.
This service supplier certificate will be accepted for use with all rule sets published by DNV. See the following page(s) for details regarding application.

This Certificate is valid from **2023-06-11** to (inclusive) **2026-06-10**.
This Certificate is based on **2024-11-16** for **DNV**

Mores, José Guilherme

This document has been digitally signed and will therefore not have handwritten signatures.

DNV

APPROVAL OF SERVICE SUPPLIERS

Certificate No. **A08589WQ**
Revision No. **1**

This is to certify that

EM&I (UK) Ltd
ABERDEEN United Kingdom

is granted acceptance for **Survey using remote inspection techniques for close-up survey of structure, in accordance with Class Programme DNV-CP-0623.**

This service supplier certificate will be accepted for use with all rule sets published by DNV. See the following page(s) for details regarding application.

This Certificate is valid from **2023-06-11** to (inclusive) **2026-06-10**.
This Certificate is based on **2024-06-17** for **DNV**

Mores, José Guilherme

This document has been digitally signed and will therefore not have handwritten signatures.

DNV

APPROVAL OF SERVICE SUPPLIERS

Certificate No. **A08589WQ**
Revision No. **1**

This is to certify that

EM&I (UK) Ltd
ABERDEEN United Kingdom

is granted acceptance for **In-water survey by remotely operated vehicle, in accordance with Class Programme DNV-CP-0626.**

This service supplier certificate will be accepted for use with all rule sets published by DNV. See the following page(s) for details regarding application.

This Certificate is valid from **2023-06-11** to (inclusive) **2026-06-10**.
This Certificate is based on **2024-06-17** for **DNV**

Mores, José Guilherme

This document has been digitally signed and will therefore not have handwritten signatures.

Type of Services Represented:

- “LoNo” ODIN Valve installation/inspection
- In-Water Survey (IWS) using advanced ROV technology
- Remote Inspection Techniques (RIT) for internal and external examinations
- Specialised robotic inspection services (ODIN-type / confined space robotic entry)

This slide highlights DNV's approval of EM&I UK's robotic and remote inspection solutions.



Reference : RN0204015040LW

TO WHOM IT MAY CONCERN

All the members of the Client, the undersigned representatives to Bureau Veritas Marine & Offshore that there is no objection from Bureau Veritas to the proposed use of the alternative underwater survey techniques in line with the current state of the art.

At each survey, EM&I will commission a qualified survey team & a survey vessel, staffed by the Surveyors/Qualifying Officers, to perform the survey in accordance with the Rules, Part A, Ch. 2.

The survey team to meet the requirements of related Bureau Veritas applied Rules Ships & Offshore or other Rules to which it refers.

Reference is also drawn to the Bureau Veritas application case for alternative means of bottom inspection along with related ISO 19011 Requirements (8.2.2).

This letter is issued within the scope of the Bureau Veritas Marine & Offshore General Conditions of the program of the Survey/Inspection/Testing.

Made at Paris, on 16 November 2024.

In Bureau Veritas, 



Certificate of Approval
Approving a Service Supplier engaged in Thickness Measurements of Hull Structures.
 No. F806LX.20250618164822

Issued within the scope of the Bureau Veritas Marine & Offshore General Conditions
 Délivré dans le cadre des Conditions Générales de Bureau Veritas Marine & Offshore

Company: EM&I (UK) LTD
 Company address: 18 Farham Terrace, A&E, 1011 Drive, UNITED KINGDOM

Scope of approval:
 Thickness measurements of structural material of ships or mobile offshore units classed with the Society, within the scope of the Rules, Part A, Ch. 2.

This is to certify that:
 The undersigned Supervisor of the Society, acting within the Bureau Veritas Marine & Offshore General Conditions, has performed, within the Company's program, an assessment of the facilities, organizational structure and procedures of the said Company, in compliance with the relevant requirements of the Society Rules (see Note 1).

The facilities, organizational structure and procedures were found satisfactory for the servicing of the equipment described in the attached Schedule of Approval.

The Certificate is valid until: 18 May 2028
 Completion date of the assessment on which this certificate is based: 19 May 2025
 At Paris, on 18 June 2025



By Order of the Society, 

ATTESTATION
 No. F806REC.202402120646

Issued within the scope of the Bureau Veritas Marine & Offshore General Conditions
 Délivré dans le cadre des Conditions Générales de Bureau Veritas Marine & Offshore

Agreement of Diving Team for In-Water Surveys

This is to certify that:
 Company: EM&I (UK) LTD
 Company address: 18 Farham Terrace, A&E, 1011 Drive, UNITED KINGDOM

we agreed by the Society to perform in-water surveys, in line of particular (docking services on ships and mobile offshore units by diver and ROV, in presence of supervisors of the Society, within the scope of the Rules, Part A, Chapter 1 and Chapter 3 section 4.

we agreed by the Society to perform internal hull survey of components fitted with water on ships and mobile offshore units by ROV, in presence of supervisors of the Society, within the scope of the Rules, Part A, Chapter 2 and Chapter 3 section 4.

we agreed by the Society to perform in-water surveys, in line of particular (docking services on non-ferrous hulls and offshore units by ROV, in presence of supervisors of the Society, within the scope of the Rules, Part A, Chapter 2 and Chapter 3 section 4 of NR and Part A, Chapter 3, Section 6 of NR and applicable.

This attestation remains valid until: 19 March 2027* and may be renewed for a further period of 3 years, subject to satisfactory renewal audit. This certification is given subject to maintenance of original standards and ability of the firm, together with keeping informed the Society of any change in the information originally supplied.

At Paris, France on 24 April 2024

NOTE 1: Certificate valid for inspection carried out by ROV (underwater divers) only. Routine and initial thickness may be taken by a third party such as present from the ship's crew, although not an independent contractor possessing the knowledge and experience.

NOTE 2: The external resources undertaking subcontracted works (in whole or in part) are to be re-evaluated / certified by Bureau Veritas.

NOTE 3: The external resources undertaking subcontracted works (in whole or in part) are to be re-evaluated / certified by Bureau Veritas.



By Thierry LECHE, Secretary 

ATTESTATION
 No. F806REC.202402120646

Issued within the scope of the Bureau Veritas Marine & Offshore General Conditions
 Délivré dans le cadre des Conditions Générales de Bureau Veritas Marine & Offshore

Certification of a Firm engaged in Survey using Remote Inspection Techniques (RIT) as an alternative means to close-up survey

This is to certify that:
 Company: EM&I (UK) LTD
 Company address: 18 Farham Terrace, A&E, 1011 Drive, UNITED KINGDOM

It is certified by the Society to perform and report surveys using Remote Inspection Techniques (RIT) as an alternative means to close-up surveys, in presence of supervisors of the Society, of the structure of ships and mobile offshore units classed with the Society, within the scope of the Rules, Ch. A.

Type of RIT used: ROV (Underwater diver)

This certification remains valid until: 19 March 2027* and may be renewed for a further period of 3 years, subject to satisfactory renewal audit. This certification is given subject to maintenance of original standards and ability of this firm, together with keeping informed the Society of any change in the information originally supplied.

At Paris, France on 24 April 2024

NOTE: The external resources undertaking subcontracted works (in whole or in part) are to be re-evaluated / certified by Bureau Veritas.

Sat-Hang LOO 

By Thierry LECHE, Secretary 



Type of Services Represented:

- “LoNo” ODIN Valve installation/inspection
- UTM (Hull Gauging) for structural integrity compliance
- IWS using ROV systems
- RIT for non-intrusive assessments using drones and robotics

These approvals validate EM&I UK's competence in delivering core class-required inspections.



EM&I (BRAZIL) INTEGRITY SERVICOS TECNICOS LTDA



Delivering Integrity



Ref: JEP
File Ref: S-1

1 October 2014

EM&I Group
Preston House
3, Aldrich Road
Widnes, Cheshire
SK9 5ND, UK

Attention: Mr. Danny Constantin, Chief Executive Officer

Subject: "ODIN" system for Underwater Inspection in Lieu of Dredging (UWILD)

Dear Mr. Constantin,

I am writing in regard to the EM&I "ODIN" system for Underwater Inspection in Lieu of Dredging. ABS has reviewed this system as it was used on two ABS Classed, Bahamas Flag, Floating Production Units, the FPSO Fluviare, IMO No. 7389405 and the FPSO Espirito Santo, IMO No. 727074.

The UWILD surveys on both units were carried out to the satisfaction of the attending ABS Surveyors and found acceptable for Class.

If you would like further information please do not hesitate to contact me.

Regards,

John D Forsyth
American Bureau of Shipping
Chief Surveyor/Officer

ABS P.O. Box 1880, Northbrook, Illinois, USA 60062
Tel: (847) 471-4242 Fax: (847) 471-8942



Certificate Number: 491918-7152200-019
Effective Date: 10 November 2025
Expiry Date: 09 November 2026
ABS Part Office: Recife Station
Company's Website: www.emandance.com

CERTIFICATE OF Recognized Service Supplier

This is to certify that

EM&I BRASIL INTEGRITY SERVICOS TECNICOS LTDA

located at

AV PREFEITO ARISTEU FERREIRA DA SILVA, 1888 QUADRAT LOTE 5 GRANJA DOS CAVALEROS, Macae, Rio de Janeiro, Brazil

having been audited by ABS and is issued a one-year provisional approval pending a satisfactory practical demonstration and reporting of the service listed below.

In-Water Survey

Attached Certificate Appendix provides specific scope of approval, authorized personnel, manufacturer authorizations, and subcontractors.

It is the responsibility of the Service Supplier to employ, train and qualify persons in the service provided. If the service requires approval from manufacturers, the Service Supplier is responsible to maintain contact with the manufacturer and maintain any service manuals up to date. Where required by the category of service, the Service Supplier shall provide valid evidence that it is authorized or licensed by the equipment manufacturer to service the makes and models of equipment for which approval is sought. If approval from the manufacturer is not attained, a surveyor must be present at time of survey to continue work. Alternatively, current written instructions from the flag state are to be obtained to continue work without the surveyor present. Service Suppliers must present photo identification, evidence of qualification and authorizations from manufacturers, as applicable, at the time of service.

The ABS office issuing this certificate is to be kept updated with changes to the management of the company, employees, equipment and models on the authorization list and any changes made.

Electronically Signed By
De Oliveira, Eduardo, Recife Station, Surveyor



Certificate Number: 491918-7152200-020
Effective Date: 10 November 2025
Expiry Date: 09 November 2026
ABS Part Office: Recife Station
Company's Website: www.emandance.com

CERTIFICATE OF Recognized Service Supplier

This is to certify that

EM&I BRASIL INTEGRITY SERVICOS TECNICOS LTDA

located at

AV PREFEITO ARISTEU FERREIRA DA SILVA, 1888 QUADRAT LOTE 5 GRANJA DOS CAVALEROS, Macae, Rio de Janeiro, Brazil

having been audited by ABS and is issued a one-year provisional approval pending a satisfactory practical demonstration and reporting of the service listed below.

Remote Inspection Techniques (RIT) as an Alternative Means for Close-up Survey of Ships and Mobile Offshore Units

Attached Certificate Appendix provides specific scope of approval, authorized personnel, manufacturer authorizations, and subcontractors.

It is the responsibility of the Service Supplier to employ, train and qualify persons in the service provided. If the service requires approval from manufacturers, the Service Supplier is responsible to maintain contact with the manufacturer and maintain any service manuals up to date. Where required by the category of service, the Service Supplier shall provide valid evidence that it is authorized or licensed by the equipment manufacturer to service the makes and models of equipment for which approval is sought. If approval from the manufacturer is not attained, a surveyor must be present at time of survey to continue work. Alternatively, current written instructions from the flag state are to be obtained to continue work without the surveyor present. Service Suppliers must present photo identification, evidence of qualification and authorizations from manufacturers, as applicable, at the time of service.

The ABS office issuing this certificate is to be kept updated with changes to the management of the company, employees, equipment and models on the authorization list and any changes made.

Electronically Signed By
De Oliveira, Eduardo, Recife Station, Surveyor



Certificate Number: 491918-7152200-018
Effective Date: 10 November 2025
Expiry Date: 09 November 2026
ABS Part Office: Recife Station
Company's Website: www.emandance.com

CERTIFICATE OF Recognized Service Supplier

This is to certify that

EM&I BRASIL INTEGRITY SERVICOS TECNICOS LTDA

located at

AV PREFEITO ARISTEU FERREIRA DA SILVA, 1888 QUADRAT LOTE 5 GRANJA DOS CAVALEROS, Macae, Rio de Janeiro, Brazil

having been audited by ABS and is issued a one-year provisional approval pending a satisfactory practical demonstration and reporting of the service listed below.

Hull Gauging

Attached Certificate Appendix provides specific scope of approval, authorized personnel, manufacturer authorizations, and subcontractors.

It is the responsibility of the Service Supplier to employ, train and qualify persons in the service provided. If the service requires approval from manufacturers, the Service Supplier is responsible to maintain contact with the manufacturer and maintain any service manuals up to date. Where required by the category of service, the Service Supplier shall provide valid evidence that it is authorized or licensed by the equipment manufacturer to service the makes and models of equipment for which approval is sought. If approval from the manufacturer is not attained, a surveyor must be present at time of survey to continue work. Alternatively, current written instructions from the flag state are to be obtained to continue work without the surveyor present. Service Suppliers must present photo identification, evidence of qualification and authorizations from manufacturers, as applicable, at the time of service.

The ABS office issuing this certificate is to be kept updated with changes to the management of the company, employees, equipment and models on the authorization list and any changes made.

Electronically Signed By
De Oliveira, Eduardo, Recife Station, Surveyor

Type of Services Represented:

- “LoNo” ODIN Valve installation/inspection
- ABS-approved IWS using ROVs for offshore and FPSO environments
- UTM (Hull Gauging) certification for Brazilian technicians
- RIT inspections (drones, ROVs, remote tooling)

These certifications enable EM&I Brazil to perform ABS-compliant inspections across MODUs, MOUs, and FPSOs.



DNV

Rio de Janeiro, 10.000 and 8th floors
20090-010 Rio de Janeiro –
Rio de Janeiro, Brazil

DNV Maritime
60-04-0000
Offshore Units in Operation
Rio de Janeiro, Brazil

Date: 2025-01-31
Vital: 0204-014
Nivel: 7 (High Risk)

Response to Request for Updated Letter of No Objection – ODIN Valve Installation & Inspection Methodology to which it concerns.

We refer to the email dated 7 May 2025 regarding the Request for Updated Letter of No Objection – ODIN Valve Installation & Inspection Methodology.

DNV confirms that we have no objections in principle to new techniques being introduced to the industry, including those related to inspection methodologies. It is a key interest of all stakeholders to support the development of innovative solutions, provided that such techniques demonstrate compliance to the regulatory requirements.

Based on the information presented, we acknowledge the potential capabilities of the ODIN system. As agreed, DNV will provide demonstrations and technical support to assist your organization in the implementation of a formal plan of acceptance for the ODIN system.

In this regard, DNV has no objections to the use of the ODIN system prior to the issuance of each formal acceptance, provided that:

- All applicable requirements in DNV Rules for further inspection (ship and/or offshore, as relevant) are met, and the guidance outlined in DNV-QD-003 (Ballast Survey Guidance for Mobile Offshore Units (MOU)) is followed.

Specifically, a case-by-case inspection plan shall be submitted for review prior to execution, and the inspection shall be signed off by the satisfaction of the attending DNV surveyor.

This statement may be used to support of your communications with clients.

Irrevocably,
for DNV Classification, Certificação e Consultoria Brasil Ltda
— DNV —
Lúcia Helena
Senior Manager – Physical Surveys/
Customer – 021 24837532
Lucia.helena@dnv.com

DNV Headquarters, Vestrevesen 1, P.O. Box 303, 1202 Høvik, Norway. Tel: +47 67 97 99 00. www.dnv.com

DNV-GL

COPY OF FINAL LETTER FROM DNV-GL TO FLYBU FLYKIT

31st January 2025

Dear Jule,

Thank you for the additional information.

For the sake of good order please note that DNV-GL is open to new techniques presented to the industry and in this case for inspection.

It is in all stakeholders' interest to find means that push the development techniques forward and DNV-GL may accept the use of them providing they demonstrate an equivalence to the intended requirement.

We are positive to the capabilities as presented by the ODIN system. As agreed we will attend several demonstrations to support your request to have a formal letter of acceptance for the ODIN system issued.

We have no objections for the ODIN system to be used prior to this letter being issued providing that it meets the requirements as set forth in our rules for further inspection (Ship and/or Offshore units as applicable) and follows the guidance note on UMLSD (QD-06), in a case to case inspection plan to be presented prior to inspection for review and performed to the satisfaction of the attending surveyor.

You may use this statement in support towards your customers.

The attending contact in Canada is Mr. Richard Kennedy.

Best regards,
for DNV-GL UK Limited, Aberdeen

Jacques van der Vliet
Senior Manager, Aberdeen (Arding)
Ship & Offshore Class
DNV-GL – Aberdeen

E-mail: Jacques.vandervliet@dnv.com
Fax: +44 (0)1224 491200
Mobile: +44 (0)1224 491200 | Twitter: @DNV-GL | LinkedIn: @DNV-GL

DNV-GL

VERIFICATION STATEMENT
THE INSPECTION OF INSPECTION TOOLS

Valid for products not subject to DNV-GL classification requirements.

Particulars of Product

Product Name:	Inspection of assets via IWS
Type description:	
Application/standard:	Submarine mooring inspection
ISO/EN/Type no.:	N/A

The product is intended for: STOCK

Requirements are based on: Client Specification "Submarine Mooring Inspection" rev. 9

Inspected and inspected, if any, are stated on page 2 (attached).

The product / material has been examined: **RELEASED** on:

Particulars of Vendor and Purchaser

Vendor:	EM&I
Vendor reference:	TBC
Purchaser:	
Purchaser reference:	

Issued in Newcastle upon Tyne on 2025-01-31



for DNV-GL
This document has been digitally signed and will therefore not show the correct signature
Georgina Sherman
Surveyor

DNV

TO WHOM IT MAY CONCERN
A QUEM INTERESSAR POSSA

DNV is the ATTENDING AUTHORITY ON BEHALF OF DNV-GL

The undersigned surveyor of the Class Society confirms that EM&I BRAZIL, INTEGRITY SERVICES TECNICOS LTDA company has been in approved process for Service Supplier with DNV according to the Class Programmes – DNV-CP-008 – In-water survey by diver or remotely operated vehicle, DNV-CP-003 – Thickness measurements, DNV-CP-002 – Survey using remote inspection techniques for diverless survey of structures and AICES (EN 219 Annex 1, Annex 1.3 and 1.6). The company was already audited and is authorized to carry out tender and thickness measurements surveys with RIT until it is seen at DNV surveyor presence for practical demonstration of the remote solutions.

The technical assessment report of the latest strength Program system, its derived to the DNV surveyor in charge of the job until two weeks of the job completion and it is also subject to approval.

The list of approved personnel for thickness measurements and RIT is available on page 2.

O subscritivo abaixo assinado, desde Sociedade Classificadora confirma que a empresa EM&I BRAZIL, INTEGRITY SERVICES TECNICOS LTDA encontra-se em processo de aprovação como Prestador de Serviços junto à DNV, de acordo com os Programas de Classificação – DNV-CP-008 – Inspeção subaquática por mergulhador ou veículo operado remotamente, DNV-CP-003 – Medição de espessura, DNV-CP-002 – Inspeção utilizando técnicas de inspeção remota para estruturas submarinas por técnicas de AICES (EN 219 Anexo 1, Anexo 1.3 e 1.6). A empresa foi auditada e está autorizada a realizar inspeções subaquáticas e de medição de espessura por ROV, desde que sob supervisão na presença do inspetor da DNV para fins de demonstração prática das soluções.

O relatório de avaliação de estruturas através do sistema Program, decorrente do sistema DNV, encontra-se disponível para o supervisor da obra até dois dias úteis após a conclusão do serviço e também está sujeito à aprovação. A lista de pessoal aprovado para medição de espessura e RIT está disponível no anexo 2.

This declaration will automatically expire on 2026-01-31.
Esta declaração de estar autorizada automaticamente em 2026-01-31.

Type of Services Represented:

- “LoNo” ODIN Valve installation/inspection
- In-Water Surveys (IWS)
- Remote Inspection Technologies (RIT)
- Robotic solutions (ODIN-type tools) for sea chests, tanks, and confined spaces

This slide confirms DNV recognition of EM&I Brazil’s advanced robotic and remote inspection capabilities.



BUREAU VERITAS

Reference : RJN02024011041GLM



BUREAU VERITAS

TO WHOM IT MAY CONCERN

All the request of the Client, the undersigned representative to Bureau Veritas declares that there is no objection from Bureau Veritas in principle to the alternative underwater survey techniques in lieu of bottom survey in drydock condition of EM&I.

All such surveys shall be considered on a case-by-case basis and a survey proposal shall be submitted by the Shipowner/Operator/Manager to Bureau Veritas in advance of the survey, so that satisfactory arrangements can be agreed by the Society.

The survey has to meet the requirements of updated Bureau Veritas applied Rules Ships or Offshore or Intact related to bottom in water survey.

Reference is also drawn to the Bureau Veritas applicable rules for alternative means of bottom inspection along with updated IACS Unified Requirements UR Z3.

This letter is issued within the scope of the Bureau Veritas Marine & Offshore General Conditions at the request of the Owner/Manager/Master.

Made at Rio de Janeiro-RJ, Brazil

On November 04th, 2024.

Marcos Vinícius da Glória
Bureau Veritas
Offshore & Marine
Offshore Manager



The latest published Rules of Bureau Veritas Marine & Offshore (A&S) and the General Conditions therein are applicable. This letter is issued within the scope of the Bureau Veritas Marine & Offshore General Conditions at the request of the Owner/Manager/Master. It is intended to be used in conjunction with the Rules of the Society and the General Conditions. It is not intended to be used as a substitute for the Rules of the Society and the General Conditions. It is not intended to be used as a substitute for the Rules of the Society and the General Conditions. It is not intended to be used as a substitute for the Rules of the Society and the General Conditions.

Type of Services Represented:

- “LoNo” ODIN Valve installation/inspections
- Supporting documentation for class-required surveys

These certificates highlight EM&I Brazil’s accredited competence to perform structural integrity inspections in accordance with BV rules.

A large version of the EM&I logo, featuring the letters 'EM&I' in a bold, italicized, yellow font, set against a teal rounded rectangular background.

EM&I (TRADING) LTD



COPY OF EMAIL LETTER FROM DNV-GL TO JUDY BURDITT

11th January 2015

Dear Judy,

Thank you for the additional information.

For the sake of good order please note that DNV GL is open to new techniques presented to the industry and in this case for inspection.

It is in an stakeholders' interest to find means that push the development techniques forward and DNV GL may accept the use of them providing they demonstrate an equivalence to the intended requirement.

We are positive to the capabilities as presented by the ODIN system. As agreed we will attend several demonstrations to support your request to have a formal letter of acceptance for the ODIN system issued.

We have no objections for the ODIN system to be used prior to this letter being issued providing that it meets the requirements as set forth in our rules for bottom inspection (Ship and/or Offshore rules as applicable) and follows the guidance note on UWLID (DYG-8). In a case to case inspection plan is to be presented prior to inspection for review and performed to the satisfaction of the attending surveyor.

You may use this statement in support towards your customers.

The attending correct contact in Canada is Mr. Richard Kennedy.

Best regards,
for DNV GL UK Limited, Aberdeen

Jeroen van der Veer
Station Manager, Aberdeen (Acting)
Ship & Offshore Class
DNV GL – Maritime

E-mail: veerj@dnv-gl.com
Direct mail: Aberdeen_ahm@dnv-gl.com
Mobile: +44 7814 457251 | Direct: +44 1224 338115



VERIFICATION STATEMENT
FOR INSPECTION OF ROGERS VIA ROV

Statement No: **N141FSBN**

Valid for products not subject to DNV GL classification requirements.

Particulars of Product

Product Name: **Inspection of moorings via ROV**

Type description: _____

Application/context: **Underwater mooring inspection**

ID/Serial/Tag No: **N.A.**

The product is intended for: **STOCK**

Requirements are based on: **Client Specification " Estimation of mooring inspection " rev. 0**

Deviations and limitations, if any, are stated on pages 3 and 6 only.

The product / material has been marked: N141FSBN on:

Particulars of Vendor and Purchaser

Vendor: **EM&I**

Vendor reference: **TBC**

Purchaser: _____

Purchaser reference: _____

Issued at **Newcastle-upon-Tyne** on **2017-09-11**



For use by you (a third party) under the terms of your purchase agreement with DNV GL, a maximum contractual liability amounting to 10% of the value of the purchase price is limited to the amount stated on the invoice. DNV GL is not liable for consequential damages. Page 1 of 2
DNV GL - Maritime
© DNV GL 2014. DNV GL and the DNV GL logo are trademarks of DNV GL AS.

Type of Services Represented:

- **“LoNo” ODIN Valve Installation/inspection**
- **Remote Inspection Techniques (RIT) approval**
- **Drone and robotic survey methods**
- **IWS support functions (documented under EM&I operational umbrella)**

These certifications confirm EM&I Trading’s supporting role in DNV-approved remote technology operations.



Type of Services Represented:

- “LoNo” ODIN Valve installation/inspection

This slide reflects Trading's administrative, coordination, and technical compliance capabilities linked to class operations.

“EM&I Group holds a comprehensive portfolio of technical certifications across the UK, Malta, and Brazil, issued by the world’s leading classification societies—ABS, DNV, Lloyd’s Register, and RINA. These approvals cover essential services including in-water surveys, hull gauging, and advanced remote inspection techniques using drones, ROVs, and robotic technologies. Together, these certifications validate the quality, reliability, and innovation of EM&I’s solutions throughout the global energy sector..”

