



Certificate Number 18-NY3568040
Effective Date 11 October 2018
Expiry Date 10 October 2023
ABS Port Office NY/NJ Port Office
Manufacturer's Website www.enecon.com

CERTIFICATE OF
Manufacturing Assessment

This is to certify that the Undersigned evaluated the manufacturing quality procedures of

Enecon Corporation

located at

6 Platinum Court, Medford, NY 11763-2251

The quality monitoring systems during production were verified to reflect the specific surveys, required by the ABS Rules, Guides, the associated specifications and Standards for the manufacture of

**Metal-Hard, Elastomer-Like & Ceramic-Like Composite, Concrete Repair
Compound & Corrosion Resistant Coating Compounds**

This manufacturer presented a sample or specimen of the product, representative of the "type" approved for the purpose of verifying that the "type" has been manufactured in conformance with the Manufacturer's Product Design Assessment(s).

This Certificate is manufacturer and location specific and is subject to annual audits. Consult the ABS Type Approval website to confirm the continued validity of this certificate and the status of products.

The ABS Office issuing the certificate is to be kept updated with changes to the production methods, quality control systems, products and models and any changes made.



Melissa L. Foto-Williams, Surveyor

NOTE: This Certificate evidences compliance with one or more of the Rules, guides, standards or other criteria of American Bureau of Shipping and is issued solely for the use of the Bureau, its committees, its clients or other authorized entities. This Certificate is a representation only that the structure, item of material, equipment, machinery or any other item covered by this Certificate has met one or more of the Rules, guides, standards or other criteria of American Bureau of Shipping as of the date of issue. Parties are advised to review the Rules for the scope and conditions of classification and to review the survey records for a fuller description of any restrictions or limitation on the vessel's service or surveys. The validity, applicability and interpretation of this Certificate is governed by the Rules and standards of American Bureau of Shipping who shall remain the sole judge thereof. Nothing contained in this Certificate or in any notation made in contemplation of this Certificate shall be deemed to relieve any designer, builder, owner, manufacturer, seller, supplier, repairer, operator or other entity of any warranty express or implied.



ABS Annual Endorsement

First

Second

Third

Fourth

Surveyor

Surveyor

Surveyor

Surveyor

WO and Date

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WO and Date

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Confirmation of Product Type Approval

Company Name: ENECON CORPORATION

Address: 6 PLATINUM COURT NY 11763 United States

Product: Coating, Corrosion Resistant Coating Compounds

Model(s): CHEMCLAD GP / CHEMCLAD XC / CHEMCLAD SC

Certificate Type	Certificate Number	Issue Date	Expiry Date
Product Design Assessment (PDA)	15-HS1450417-1-PDA	17-OCT-2019	05-MAY-2021
Manufacturing Assessment (MA)	18-NY3568040	11-OCT-2018	10-OCT-2023
Product Quality Assurance (PQA)	NA	NA	NA

Tier

3

Intended Service

Marine & Offshore Applications - Resurface and Protect both Metallic and Concrete Surfaces from Corrosion and Chemical Attack.

Description

CHEMCLAD GP / CHEMCLAD XC / CHEMCLAD SC are two-component, 100% solids, Chemical-Resistant Polymer Coatings that may be applied by brush or roller.

Ratings

CHEMCLAD GP

Tensile Sheer Adhesion:

Steel: 3,700 psi

Aluminum: 2,700 psi

Copper: 3,000 psi

Stainless Steel: 3,500 psi

CHEMCLAD XC

Tensile Sheer Adhesion:

Steel: 2,900 psi

Aluminum: 2,400 psi

Copper: 2,500 psi

Stainless Steel: 2,700 psi

CHEMCLAD SC

Tensile Sheer Adhesion:

Steel: 2,300 psi

Aluminum: 1,700 psi

Copper: 2,200 psi

Stainless Steel: 2,500 psi

See attached "pdf" for more Technical details

Service Restrictions

Unit Certification is not required for this product. If the manufacturer or purchaser request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.

Be advised that as this coating has not been tested and approved under the IMO PSPC the coating may not be applied to the dedicated seawater ballast tanks of any ABS classed vessel or to the double side skin spaces of any ABS classed bulk carrier.

Comments

- 1) The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.
- 2) All repairs are to be carried out in accordance with Manufacturer's Recommendations and procedures.
- 3) If the repair involves any pressure containing or force transmitting component, details of the proposed repair require ABS approval.
- 4) Marking of product: Product/package shall be marked with manufacturer's name; ENECON CORPORATION (641044), 6 PLATINUM COURT, MEDFORD, NY, United States and type designation.

Notes, Drawings and Documentation

Drawing No. Marine Applications of ENECON Products, Revision: -, Pages: 7

Drawing No. ENECON Corporation's Nuclear Power Plant Experiences, Revision: -, Pages: 10

Drawing No. ENECON Photo of application for Marine industries, Revision: -, Pages: 11

Drawing No. CH-083: Italian Chemical Company Repairs Protects Concrete Storage Tank, Revision: -, Pages: 1

Drawing No. CH-090: After 13 Years CHEMCLAD Holds Up On MSC Hospital Ship Laundry Deck , Revision: -, Pages: 1

Drawing No. CH-099: CHEMCLAD SC Eliminates Corrosion On Steel Mill Ammonia Storage Tank, Revision: -, Pages: 1

Term of Validity

This Product Design Assessment (PDA) Certificate remains valid until 05/May/2021 or until the Rules

and/or Standards used in the assessment are revised or until there is a design modification warranting design reassessment (whichever occurs first).

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or previous to the effective date of the ABS Rules and standards applied at the time of PDA issuance. Use of the Product for non-ABS units is subject to agreement between the manufacturer and intended client.

ABS Rules

Rules for Conditions of Classification, Part 1 - 2019 Steel Vessels Rules 1-1-4/7.7, 1-1-A3, 1-1-A4

Rules for Conditions of Classification, Part 1 - 2019 Offshore Units and Structures 1-1-4/9.7, 1-1-A2, 1-1-A3

International Standards

NA

EU-MED Standards

NA

National Standards

ASTM D1002 (Oct 2010)

Government Standards

NA

Other Standards

NA



Corporate ABS Programs
American Bureau of Shipping
Print Date and Time: 03-Apr-2020 4:24

ABS has used due diligence in the preparation of this certificate, and it represents the information on the product in the ABS Records as of the date and time the certificate is printed.

If the Rules and/or standards used in the PDA evaluation are revised or if there is a design modification (whichever occurs first), a PDA revalidation may be necessary.

The continued validity of the MA is dependent on completion of satisfactory audits as required by the ABS Rules. The validity of both PDA and MA entitles the product to receive a **Confirmation of Product Type Approval**.

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

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Type Approval requires Drawing Assessment, Prototype Testing and assessment of the manufacturer's quality assurance and quality control arrangements. The manufacturer is responsible to maintain compliance with all specifications applicable to the product design assessment. Unless specifically indicated in the description of the product, certification under type approval does not waive requirements for witnessed inspection or additional survey for product use on a vessel, MODU or facility intended to be ABS classed or that is presently in class with ABS.

Due to wide variety of specifications used in the products ABS has evaluated for Type Approval, it is part of our contract that; whether the standard is an ABS Rule or a non-ABS Rule, the Client has full responsibility for continued compliance with the standard.

Questions regarding the validity of ABS Rules or the need for supplemental testing or inspection of such products should, in all cases, be addressed to ABS.



Confirmation of Product Type Approval

Company Name: ENECON CORPORATION

Address: 6 PLATINUM COURT NY 11763 United States

Product: Metal-Hard Composites

Model(s): METALCLAD DurAlloy

Certificate Type	Certificate Number	Issue Date	Expiry Date
Product Design Assessment (PDA)	15-HS1450414-PDA	06-MAY-2016	05-MAY-2021
Manufacturing Assessment (MA)	18-NY3568040	11-OCT-2018	10-OCT-2023
Product Quality Assurance (PQA)	NA	NA	NA

Tier

3

Intended Service

Repair and rebuilding damaged mechanical components such as Shafts, Keyways, Bearing and Bushing Housings, Hydraulic Rams, cracked Housings and Castings.

Description

METALCLAD DurAlloy is a two-component, 100% Solids, Multi-Purpose Polymer Composite.

Ratings

Compressive Strength: 13,500 psi

Flexural Strength: 9,500 psi

Izod impact strength: 1.2 ft-lbs/in

Hardness - Shore D: 86

Tensile Shear Adhesion

Steel: 3,600 psi

Aluminum: 2,000 psi

Copper: 3,000 psi

Stainless Steel: 3,500 psi

Surface resistivity: 1×10^{15} ohms

Volume resistivity: 1×10^{15} ohm/cm

Dielectric constant: 7.5

See attached "pdf" for more Technical details

Service Restrictions

Unit Certification is not required for this product. If the manufacturer or purchaser request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.

Comments

The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.

- 1) All repairs are to be carried out in accordance with Manufacturer's Recommendations and procedures.
- 2) If the repair involves any pressure containing or force transmitting component, details of the proposed repair require ABS approval.
- 3) 3) Marking of product:

Product/package shall be marked with manufacturer's name; ENECON CORPORATION (641044), 6 PLATINUM COURT, MEDFORD, NY, United States and type designation.

Notes, Drawings and Documentation

Drawing No. Correspondence, Dec of Conf 15Oct22_Cert 00-HS124117E-1-PDA, Revision: -, Pages: 1

Drawing No. Correspondence, Application Revalidation 15Oct22 Cert_ 00-HS124117E-1-PDA, Revision: -, Pages: 1

Drawing No. Marine Applications of ENECON Products, Revision: -, Pages: 7

Drawing No. ENECON Corporation's Nuclear Power Plant Experiences, Revision: -, Pages: 10

Drawing No. ENECON Photo of application for Marine industries, Revision: -, Pages: 11

Term of Validity

This Product Design Assessment (PDA) Certificate 15-HS1450414-PDA, dated 06/May/2016 remains valid until 05/May/2021 or until the Rules or specifications used in the assessment are revised (whichever occurs first).

This PDA is intended for a product to be installed on an ABS classed vessel, MODU or facility which is in existence or under contract for construction on the date of the ABS Rules or specifications used to evaluate the Product.

Use of the Product on an ABS classed vessel, MODU or facility which is contracted after the validity date of the ABS Rules and specifications used to evaluate the Product, will require re-evaluation of the PDA.

Use of the Product for non ABS classed vessels, MODUs or facilities is to be to an agreement between the manufacturer and intended client.

ABS Rules

Rules for Conditions of Classification, Part 1 2016 Steel Vessels Rules 1-1-4/7.7, 1-1-A3, 1-1-A4;
2016 ABS Rules for Conditions of Classification, Part 1 – 2016 Offshore Units and Structures 1-1-4/9.7, 1-1-A2, 1-1-A3;

International Standards

NA

EU-MED Standards

NA

National Standards

ASTM D150 (Aug 2011)

ASTM D256 (May 2010)

ASTM D257 (Apr 2014)

ASTM D695 (Sep 2015)

ASTM D790 (Apr 2010)

ASTM D1002 (Oct 2010)

ASTM D2240 (Jan 2010)

Government Standards

NA

Other Standards

NA



A handwritten signature in black ink, appearing to read 'James J. Wick', is positioned above the printed name and title.

Corporate ABS Programs
American Bureau of Shipping
Print Date and Time: 03-Apr-2020 4:22

ABS has used due diligence in the preparation of this certificate, and it represents the information on the product in the ABS Records as of the date and time the certificate is printed.

If the Rules and/or standards used in the PDA evaluation are revised or if there is a design modification (whichever occurs first), a PDA revalidation may be necessary.

The continued validity of the MA is dependent on completion of satisfactory audits as required by the ABS Rules. The validity of both PDA and MA entitles the product to receive a **Confirmation of Product Type Approval**.

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or prior to the effective date of the ABS Rules and standards applied at the time of PDA issuance. ABS makes no representations regarding Type Approval of the Product for use on vessels, MODUs or facilities built after the date of the ABS Rules used for this evaluation.

Type Approval requires Drawing Assessment, Prototype Testing and assessment of the manufacturer's quality assurance and quality control arrangements. The manufacturer is responsible to maintain compliance with all specifications applicable to the product design assessment. Unless specifically indicated in the description of the product, certification under type approval does not waive requirements for witnessed inspection or additional survey for product use on a vessel, MODU or facility intended to be ABS classed or that is presently in class with ABS.

Due to wide variety of specifications used in the products ABS has evaluated for Type Approval, it is part of our contract that; whether the standard is an ABS Rule or a non-ABS Rule, the Client has full responsibility for continued compliance with the standard.

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Confirmation of Product Type Approval

Company Name: ENECON CORPORATION

Address: 6 PLATINUM COURT NY 11763 United States

Product: Elastomer-Like Composite

Model(s): FLEXICLAD DuraTough DP and FLEXICLAD DuraTough DL

Certificate Type	Certificate Number	Issue Date	Expiry Date
Product Design Assessment (PDA)	15-HS1450419-PDA	06-MAY-2016	05-MAY-2021
Manufacturing Assessment (MA)	18-NY3568040	11-OCT-2018	10-OCT-2023
Product Quality Assurance (PQA)	NA	NA	NA

Tier

3

Intended Service

Marine & Offshore Application - Repair and Coating of Equipment damaged by Erosion/Corrosion that is accelerated by Cavitation Attack.

Description

FLEXICLAD DuraTough DP (paste) and FLEXICLAD DuraTough DL (liquid) are two-component, 100% Solids, Elasto-Ceramic Polymer Composites formulated for Rebuilding and Surfacing, respectively, of Equipment prone to Cavitation Attack.

Ratings

DuraTough DL:

Hardness - Shore D: 55

Tensile Shear Adhesion

Steel: 1,200 psi

Aluminum: 1,050 psi

Copper: 1,200 psi

Stainless Steel: 1,100 psi

Peel Adhesion: > 30 pli

Comparative Cavitation Resistance (f = 20 KHZ, a = 0.001"): 50 microns

DuraTough DP:

Hardness - Shore D: 50

Tensile Sheer Adhesion

Steel: 1,000 psi

Aluminum: 950 psi

Copper: 900 psi

Stainless Steel: 850 psi

Peel Adhesion: > 40 pli

Comparative Cavitation Resistance (f = 20 KHZ, a = 0.001"): 100 microns

See attached "pdf" for more Technical details

Service Restrictions

Unit Certification is not required for this product. If the manufacturer or purchaser request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.

Comments

The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.

- 1) All repairs and coatings are to be carried out in accordance with Manufacturer's Recommendations and procedures.
- 2) If the repair involves any pressure containing or force transmitting component, details of the proposed repair require ABS approval.
- 3) Marking of product:

Product/package shall be marked with manufacturer's name; ENECON CORPORATION (641044), 6 PLATINUM COURT, MEDFORD, NY, United States and type designation.

Notes, Drawings and Documentation

Drawing No. Correspondence, Application Revalidation 15Oct22 Cert 00-HS124117D-1-PDA, Revision: -, Pages: 1

Drawing No. Correspondence, Dec of Conf 15Oct22_Cert 00-HS124117D-1-PDA, Revision: -, Pages: 1

Drawing No. Marine Applications of ENECON Products, Revision: -, Pages: 7

Drawing No. ENECON Corporation's Nuclear Power Plant Experiences, Revision: -, Pages: 10

Drawing No. ENECON Photo of application for Marine industries, Revision: -, Pages: 11

Term of Validity

This Product Design Assessment (PDA) Certificate 15-HS1450419-PDA, dated 06/May/2016 remains valid until 05/May/2021 or until the Rules or specifications used in the assessment are revised (whichever occurs first).

This PDA is intended for a product to be installed on an ABS classed vessel, MODU or facility which is in existence or under contract for construction on the date of the ABS Rules or specifications used to evaluate the Product.

Use of the Product on an ABS classed vessel, MODU or facility which is contracted after the validity date of the ABS Rules and specifications used to evaluate the Product, will require re-evaluation of the PDA.

Use of the Product for non ABS classed vessels, MODUs or facilities is to be to an agreement between the manufacturer and intended client.

ABS Rules

Rules for Conditions of Classification, Part 1 2016 Steel Vessels Rules 1-1-4/7.7, 1-1-A3, 1-1-A4;

2016 ABS Rules for Conditions of Classification, Part 1 – 2016 Offshore Units and Structures 1-1-4/9.7, 1-1-A2, 1-1-A3;

International Standards

NA

EU-MED Standards

NA

National Standards

ASTM D1002 (Oct 2010)

ASTM D1876 (Apr 2015)

ASTM D2240 (Jan 2010)

ASTM G32 (Dec 2010)

Government Standards

NA

Other Standards

NA



A handwritten signature in black ink, appearing to read "James J. Wick".

Corporate ABS Programs
American Bureau of Shipping
Print Date and Time: 03-Apr-2020 4:20

ABS has used due diligence in the preparation of this certificate, and it represents the information on the product in the ABS Records as of the date and time the certificate is printed.

If the Rules and/or standards used in the PDA evaluation are revised or if there is a design modification (whichever occurs first), a PDA revalidation may be necessary.

The continued validity of the MA is dependent on completion of satisfactory audits as required by the ABS Rules. The validity of both PDA and MA entitles the product to receive a **Confirmation of Product Type Approval**.

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or prior to the effective date of the ABS Rules and standards applied at the time of PDA issuance. ABS makes no representations regarding Type Approval of the Product for use on vessels, MODUs or facilities built after the date of the ABS Rules used for this evaluation.

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quality control arrangements. The manufacturer is responsible to maintain compliance with all specifications applicable to the product design assessment. Unless specifically indicated in the description of the product, certification under type approval does not waive requirements for witnessed inspection or additional survey for product use on a vessel, MODU or facility intended to be ABS classed or that is presently in class with ABS.

Due to wide variety of specifications used in the products ABS has evaluated for Type Approval, it is part of our contract that; whether the standard is an ABS Rule or a non-ABS Rule, the Client has full responsibility for continued compliance with the standard.

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Confirmation of Product Type Approval

Company Name: ENECON CORPORATION

Address: 6 PLATINUM COURT NY 11763 United States

Product: Repair, Concrete Repair Compound

Model(s): ENECRETE DuraFill

Certificate Type	Certificate Number	Issue Date	Expiry Date
Product Design Assessment (PDA)	19-HS1835139-PDA	19-SEP-2019	18-SEP-2024
Manufacturing Assessment (MA)	18-NY3568040	11-OCT-2018	10-OCT-2023
Product Quality Assurance (PQA)	NA	NA	NA

Tier

3

Intended Service

Broadcast flooring applications as well as for filling deeper holes and cavities on both metal and concrete floors and decks.

Description

A two-component, 100% Solids polymer system to be combined with locally sourced aggregates.

Ratings

ENECRETE DuraFill is considered suitable for most applications, including immersion, with:

Gasoline

Kerosene

50% Antifreeze

Transmission Fluid

Power Steering Fluid

Motor Oil

Detergent Solution

Trisodium Phosphate

20% Salt Solution

20% Calcium Chloride

10% Hydrochloric Acid

10% Sulfuric Acid

10 % Sodium Hydroxide

Service Restrictions

Unit Certification is not required for this product. If the manufacturer or purchaser request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.

Comments

The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.

Notes, Drawings and Documentation

Drawing No. ENECRETE DuraFill, ENECRETE DuraFill, Revision: -, Pages: 1

Drawing No. EC-025: DuraFill Gives Motel Pool Face Lift (2005), Revision: -, Pages: 1

Drawing No. EC-029: DuraFill & DuraQuarts Solve Concrete Problems for Utility (2006), Revision: -, Pages: 1

Drawing No. EC-039: Dura-Grip Safety System Eliminates 'Slippery' Hazard on Major Orange Juice Distributor's Loading Docks & Ramps (2009), Revision: -, Pages: 1

Drawing No. EC-053: Damaged Elevator Floors are an Easy Fix with DuraFill (2014), Revision: -, Pages: 1

Drawing No. EC-055: University Repairs & Protects Interior Staircase with Enecrete DuraQuarts & DuraFill (2014), Revision: -, Pages: 1

Drawing No. 150 Year Old Cemetery Patio Repaired & Protected with Enecrete (2017), Revision: -, Pages: 1

Drawing No. School District Solves Safety and Unsightly Wall Issues (2018), Revision: -, Pages: 1

Term of Validity

This Product Design Assessment (PDA) Certificate remains valid until 18/Sep/2024 or until the Rules and/or Standards used in the assessment are revised or until there is a design modification warranting design reassessment (whichever occurs first).

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or previous to the effective date of the ABS Rules and standards applied at the time of PDA issuance. Use of the Product for non-ABS units is subject to agreement between the manufacturer and intended client.

ABS Rules

2019 ABS Rules for Conditions of Classification, Part 1, Marine Vessels Rules 1-1-4/7.7, 1-1-A3, 1-1-A4;

2019 ABS Rules for Conditions of Classification, Part 1, Offshore Units and Structures 1-1-4/9.7, 1-1-A2, 1-1-A3;

International Standards

ASTM D695, 2015

ASTM D790, 2017

ASTM D1002, 2019

ASTM D2240, 2015

EU-MED Standards

NA

National Standards

NA

Government Standards

NA

Other Standards

NA



A handwritten signature in black ink, appearing to read "James J. Wick".

Corporate ABS Programs
American Bureau of Shipping
Print Date and Time: 03-Apr-2020 4:23

ABS has used due diligence in the preparation of this certificate, and it represents the information on the product in the ABS Records as of the date and time the certificate is printed.

If the Rules and/or standards used in the PDA evaluation are revised or if there is a design modification (whichever occurs first), a PDA revalidation may be necessary.

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Confirmation of Product Type Approval

Company Name: ENECON CORPORATION

Address: 6 PLATINUM COURT NY 11763 United States

Product: Repair, Concrete Repair Compound

Model(s): ENECRETE DuraQuartz

Certificate Type	Certificate Number	Issue Date	Expiry Date
Product Design Assessment (PDA)	15-HS1446840-PDA	06-MAY-2016	05-MAY-2021
Manufacturing Assessment (MA)	18-NY3568040	11-OCT-2018	10-OCT-2023
Product Quality Assurance (PQA)	NA	NA	NA

Tier

3

Intended Service

Marine & Offshore Application - Repair of Concrete, Tile, and Stone Surfaces, etc.

Description

Enecrete DuraQuartz is a three-component, 100% Solids, Concrete Repair Compound that can be mixed to consistencies varying from a viscous Liquid to a thick Mortar.

Ratings

Compressive Strength: 15,500 psi

Compressive Modulus: 640,000 psi

Compressive Stress: 13,000 psi

Flexural Modulus: 310,000 psi

Coefficient of Expansion: 3.5×10^{-6} in/ $^{\circ}$ C

Izod impact strength: 0.5 ft-lbs/in

Hardness - Shore D: 88

Surface resistivity: 1×10^{15} ohms

Volume resistivity: 1×10^{15} ohm/cm

Dielectric Strength: 210 volts/mil

Dielectric constant: 7.5

See attached "pdf" for more Technical details

Service Restrictions

Unit Certification is not required for this product. If the manufacturer or purchaser request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.

Comments

The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.

1) All repairs are to be carried out in accordance with Manufacturer's Recommendations and procedures.

2) If the repair involves any pressure containing or force transmitting component, details of the proposed repair require ABS approval.

3) Marking of product:

Product/package shall be marked with manufacturer's name; ENECON CORPORATION (641044), 6 PLATINUM COURT, MEDFORD, NY, United States and type designation.

Notes, Drawings and Documentation

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Drawing No. Correspondence, Application Revalidation 15Oct22 Cert_ 00-HS124117A-1-PDA, Revision: -, Pages: 1

Drawing No. Marine Applications of ENECON Products, Revision: -, Pages: 7

Drawing No. ENECON Corporation's Nuclear Power Plant Experiences, Revision: -, Pages: 10

Drawing No. ENECON Photo of application for Marine industries, Revision: -, Pages: 11

Term of Validity

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Use of the Product on an ABS classed vessel, MODU or facility which is contracted after the validity date of the ABS Rules and specifications used to evaluate the Product, will require re-evaluation of the PDA.

Use of the Product for non ABS classed vessels, MODUs or facilities is to be to an agreement between the manufacturer and intended client.

ABS Rules

Rules for Conditions of Classification, Part 1 2016 Steel Vessels Rules 1-1-4/7.7, 1-1-A3, 1-1-A4;

2016 ABS Rules for Conditions of Classification, Part 1 – 2016 Offshore Units and Structures 1-1-4/9.7, 1-1-A2, 1-1-A3;

International Standards

NA

EU-MED Standards

NA

National Standards

- ASTM C-109 (Mar 2016)
- ASTM D-149 (Apr 2013)
- ASTM D-150 (Aug 2011)
- ASTM D-256 (May 2010)
- ASTM D-257 (Apr 2014)
- ASTM D-696 (Apr 2016)
- ASTM D-790 (Apr 2010)
- ASTM D-1002 (Oct 2010)
- ASTM D- 2240 (Jan 2010)

Government Standards

NA

Other Standards

NA



A handwritten signature in blue ink, appearing to read 'James J. Wick'.

Corporate ABS Programs
American Bureau of Shipping
Print Date and Time: 03-Apr-2020 4:23

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The continued validity of the MA is dependent on completion of satisfactory audits as required by the ABS Rules. The validity of both PDA and MA entitles the product to receive a **Confirmation of Product Type Approval**.

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or prior to the effective date of the ABS Rules and standards applied at the time of PDA issuance. ABS makes no representations regarding Type Approval of the Product for use on vessels, MODUs or facilities built after the date of the ABS Rules used for this evaluation.

Type Approval requires Drawing Assessment, Prototype Testing and assessment of the manufacturer's quality assurance and quality control arrangements. The manufacturer is responsible to maintain compliance with all specifications applicable to the product design assessment. Unless specifically indicated in the description of the product, certification under type approval does not waive requirements for witnessed inspection or additional survey for product use on a vessel, MODU or facility intended to be ABS classed or that is presently in class with ABS.

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Confirmation of Product Type Approval

Company Name: ENECON CORPORATION

Address: 6 PLATINUM COURT NY 11763 United States

Product: Ceramic-Like Composites

Model(s): METALCLAD CeramAlloy CP+ and METALCLAD CeramAlloy CL+

Certificate Type	Certificate Number	Issue Date	Expiry Date
Product Design Assessment (PDA)	15-HS1450416-PDA	06-MAY-2016	05-MAY-2021
Manufacturing Assessment (MA)	18-NY3568040	11-OCT-2018	10-OCT-2023
Product Quality Assurance (PQA)	NA	NA	NA

Tier

3

Intended Service

Marine & Offshore Application - Rebuilding surfaces damaged by Fluid Flow Erosion/Corrosion and protection of new Equipment from such damage.

Description

METALCLAD CeramAlloy CP+ (paste) and METALCLAD CeramAlloy CL+ (liquid) are two-component, 100% Solids, Polymer Composites formulated for Repair and Rebuilding of Fluid Flow Equipment.

Ratings

CeramAlloy CL+

Compressive Strength: 16,000 psi

Flexural Strength: 15,500 psi

Izod impact strength: 1.3 ft-lbs/in

Hardness – Rockwell: R107

Hardness - Shore D: 82

Tensile Shear Adhesion

Steel: 2,400 psi

Aluminum: 2,500 psi

Copper: 1,950 psi

Stainless Steel: 2,700 psi

Surface resistivity: 1×10^{15} ohms
Volume resistivity: 1×10^{15} ohm/cm
Dielectric constant: 7.5
Dielectric strength: 652 volts/mil
Breakdown voltage: 6.1 Kv

CeramAlloy CP+

Compressive Strength: 14,000 psi
Flexural Strength: 15,500 psi
Izod impact strength: 1.3 ft-lbs/in
Hardness – Rockwell: R107

Hardness - Shore D: 82

Tensile Shear Adhesion

Steel: 2,900 psi

Aluminum: 2,750 psi

Copper: 2,400 psi

Stainless Steel: 3,300 psi

Surface resistivity: 1×10^{15} ohms
Volume resistivity: 1×10^{15} ohm/cm
Dielectric constant: 7.5
Dielectric strength: 500 volts/mil
Breakdown voltage: 18.6 Kv

See attached "pdf" for more Technical details

Service Restrictions

Unit Certification is not required for this product. If the manufacturer or purchaser request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.

Comments

The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.

- 1) All repairs are to be carried out in accordance with Manufacturer's Recommendations and procedures.
- 2) If the repair involves any pressure containing or force transmitting component, details of the proposed repair require ABS approval.
- 3) Marking of product:

Product/package shall be marked with manufacturer's name; ENECON CORPORATION (641044), 6 PLATINUM COURT, MEDFORD, NY, United States, and type designation.

Notes, Drawings and Documentation

Drawing No. Correspondence, Application Revalidation 15Oct22 Cert 00-HS124117B-1-PDA, Revision: -, Pages: 1

Drawing No. Correspondence, Dec of Conf 15Oct22_Cert 00-HS124117B-1-PDA, Revision: -, Pages: 1

Drawing No. Marine Applications of ENECON Products, Revision: -, Pages: 7

Drawing No. ENECON Corporation's Nuclear Power Plant Experiences, Revision: -, Pages: 10

Drawing No. ENECON Photo of application for Marine industries, Revision: -, Pages: 11

Term of Validity

This Product Design Assessment (PDA) Certificate 15-HS1450416-PDA, dated 06/May/2016 remains valid until 05/May/2021 or until the Rules or specifications used in the assessment are revised (whichever occurs first).

This PDA is intended for a product to be installed on an ABS classed vessel, MODU or facility which is in existence or under contract for construction on the date of the ABS Rules or specifications used to evaluate the Product.

Use of the Product on an ABS classed vessel, MODU or facility which is contracted after the validity date of the ABS Rules and specifications used to evaluate the Product, will require re-evaluation of the PDA.

Use of the Product for non ABS classed vessels, MODUs or facilities is to be to an agreement between the manufacturer and intended client.

ABS Rules

Rules for Conditions of Classification, Part 1 2016 Steel Vessels Rules 1-1-4/7.7, 1-1-A3, 1-1-A4;
2016 ABS Rules for Conditions of Classification, Part 1 – 2016 Offshore Units and Structures 1-1-4/9.7, 1-1-A2, 1-1-A3;

International Standards

NA

EU-MED Standards

NA

National Standards

ASTM D115 (Nov 2014)
ASTM D150 (Aug 2011)
ASTM D256 (May 2010)
ASTM D257 (Apr 2014)
ASTM D695 (Sep 2015)
ASTM D785 (Oct 2015)
ASTM D790 (Apr 2010)
ASTM D1002 (Oct 2010)
ASTM D2240 (Jan 2010)

Government Standards

NA

Other Standards
NA

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Confirmation of Product Type Approval

Company Name: ENECON CORPORATION

Address: 6 PLATINUM COURT NY 11763 United States

Product: Metal-Hard Composites

Model(s): METALCLAD SpeedAlloy

Certificate Type	Certificate Number	Issue Date	Expiry Date
Product Design Assessment (PDA)	15-HS1450413-PDA	06-MAY-2016	05-MAY-2021
Manufacturing Assessment (MA)	18-NY3568040	11-OCT-2018	10-OCT-2023
Product Quality Assurance (PQA)	NA	NA	NA

Tier

3

Intended Service

Marine & Offshore Application - Rapid curing Material for Repairs to leaking Pipes, Tanks, Sumps and Casings.

Description

METALCLAD SpeedAlloy is a quick-curing, 100% Solids, Polymeric "Leak Stopper".

Ratings

Compressive Strength: 22,500 psi

Flexural Strength: 16,100 psi

Izod impact strength: 1.3 ft-lbs/in

Hardness – Rockwell: R90

Hardness - Shore D: 84

Tensile Shear Adhesion

Steel: 2,300 psi

Aluminum: 2,100 psi

Copper: 2,250 psi

Stainless Steel: 1,800 psi

Surface resistivity: 1×10^{15} ohms

Volume resistivity: 1×10^{15} ohm/cm

Dielectric constant: 7.5

See attached "pdf" for more Technical details

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2016 ABS Rules for Conditions of Classification, Part 1 – 2016 Offshore Units and Structures 1-1-4/9.7, 1-1-A2, 1-1-A3;

International Standards

NA

EU-MED Standards

NA

National Standards

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Other Standards

NA



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