Marine & Offshore

Certificate number: 74462/A0 BV
File number: .
Product code: 1315I

This certificate is not valid when presented without the full attached schedule composed of 7 sections

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TYPE APPROVAL CERTIFICATE

This certificate is issued to

EKIN ENDUSTRIYEL ISITMA SOGUTMA SAN. Ve TIC. AS.

ISTANBUL - Türkiye

for the type of product

PLATE HEAT EXCHANGERS

Gasketed Plate Heat Exchangers (10 Bar & 16 Bar)
MIT-505 / MIT-514 / MIT-522 / MIT-535 / MIT-562 / MIT-742 / MIT-743

Requirements:
Bureau Veritas Rules for the Classification of Steel Ships

This certificate is issued to attest that Bureau Veritas Marine & Offshore did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate will expire on: 26 Jun 2028

For Bureau Veritas Marine & Offshore,
At BV ISTANBUL, on 26 Jun 2023,
Gurcan Yilmaz

This certificate was created electronically and is valid without signature

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION

Gasketed Plate Heat Exchangers

The sealing between the plates is provided by rubber gaskets.

1.1. Ratings (Design Code EN 13445)

Type of PHE	Size	End connections	Maximum Design Pressure (Bar)	Maximum Working Temperature (°C)
MIT 505.10 MIT 505.16	1 1/4"	Galvanized Steel Stainless Steel (AISI304-AISI316) Polyethylene (PE)	10 Bar 16 Bar	-20/ +180
MIT 514.10 MIT 514.16	DN50	Flanged Connection - EN 1092-1 Galvanized Steel - P355GH - / Stainless Steel (AISI304 - AISI316)		
MIT 522.10 MIT 522.16	DN100			
MIT 535.10 MIT 535.16	DN80			
MIT 562.10 MIT 562.16	DN150			
MIT 742.10 MIT 742.16	DN150			
MIT 743.10 MIT 743.16	DN200			

1.2. Temperature range

Material	Temperature range (°C)
EPDM	-50 / +130
EPDM-HT	-50 / +150
NBR	-40 / +100
HNBR/NBR-HT	-40 / +150
VITON-A	-20 / +200
VITON-G	-20 / +250

1.3. Materials

Part	Material
Head plate	P355GH
Follower plate	P355GH
Flow plate	AISI 316L/Titanium/Hastelloy
Flow plate Gaskets	EPDM/EPDM-HT NBR/HNBR/NBR-HT VITON-A/VITON-G

Material datasheet for non-metallic materials included in catalog N°MKK.PE.ENG06 Rev. 06 dated 04/04/2023

When other choices of materials are used per manufacturer's recommendations, the BV agreement is to be obtained.

2. DOCUMENTS AND DRAWINGS

- Drawing N°505.OO.10.16 Rev. 02 dated 20/02/2023: MIT 505.10 & MIT 505.16
- Drawing N°514.OO.10.16 Rev. 01 dated 25/10/2021: MIT 514.10 & MIT 514.16
- Drawing N°522.OO.10.16 Rev. 02 dated 13/06/2022: MIT 522.10 & MIT 522.16
- Drawing N°535.OO.10.16 Rev. 01 dated 01/11/2021: MIT 535.10 & MIT 535.16

- Drawing N°562.OO.10.16 Rev. 01 dated 18/11/2021: MIT 562.10 & MIT 562.16
- Drawing N°741.OO.10.16 Rev. 01 dated 20/11/2021: MIT 741.10 & MIT 741.16
- Drawing N°743.OO.10.16 Rev. 01 dated 22/11/2021: MIT 743.10 & MIT 743.16
- Calculation Sheets N°MIT-505.10 Rev. 00 dated 11/03/2023.
- Calculation Sheets N°MIT-505.16 Rev. 00 dated 11/03/2023.
- Calculation Sheets N°MIT-514.10 Rev. 00 dated 11/03/2023.
- Calculation Sheets N°MIT-514.16 Rev. 00 dated 11/03/2023.
- Calculation Sheets N°MIT-522.10 Rev. 00 dated 11/03/2023.
- Calculation Sheets N°MIT-522.16 Rev. 00 dated 11/03/2023.
- Calculation Sheets N°MIT-535.10 Rev. 00 dated 11/03/2023.
- Calculation Sheets N°MIT-535.16 Rev. 00 dated 11/03/2023.
- Calculation Sheets N°MIT-562.10 Rev. 00 dated 11/03/2023.
- Calculation Sheets N°MIT-562.16 Rev. 00 dated 11/03/2023.
- Calculation Sheets N°MIT-741.10 Rev. 00 dated 11/03/2023.
- Calculation Sheets N°MIT-741.16 Rev. 00 dated 11/03/2023.
- Calculation Sheets N°MIT-743.10 Rev. 00 dated 11/03/2023.
- Calculation Sheets N°MIT-743.16 Rev. 00 dated 11/03/2023.
- User manual N°MKK.PE.ENG06 Rev. 06 dated 04/04/2023
- Plate heat exchanger gasket catalog N°MKK.PE.ENG06 Rev. 06 dated 04/04/2023

No departure from the above documents shall be made without the prior consent of the Society. The manufacturer must inform the Society of any modification or changes to these documents and drawings.

3. TEST REPORTS

Not applicable.

4. APPLICATION / LIMITATION

4.1 - May be used for the following services: Sea Water / Fresh Water / Oil.

4.2 - The use of toxic or flammable refrigerants to be subject to a special consideration by the Society in accordance with the relevant requirements stated in Pt C, Ch 1, Sec 16 and Pt F, Ch 7 of the BUREAU VERITAS Rules.

4.3 - The heat exchangers belong to class 1, class 2 or class 3 depending on media according to the table 2 - Pressure Vessel

4.4 - Flange connections or other approved pipe connections are to comply with Part C, Chapter 1, Sec 10 [2.4] of the BUREAU VERITAS Rules.

4.5 - The nature of materials, joints included, should be suitable for the intended service.

4.6 - The conditions of use of stainless steel are given in Pt C, Ch 1, Sec 10 Table 5 of the Society Rules.

5. PRODUCTION SURVEY REQUIREMENTS

5.1 - The products are to be supplied by **EKIN ENDUSTRIYEL ISITMA SOGUTMA SAN. Ve TIC. AS.** in compliance with the type and the requirements described in this certificate.

5.2 - This type of product is within the category IBV of BV Rule Note NR320.

5.3 - BV product certificate is required.

5.4 - BUREAU VERITAS material certificates are required for raw materials of pressure parts (frame plates and pressure plates) of class 1. Material for others parts of class 1 and all parts of class 2 and class 3 are to be with work's certificates.

5.5 - Each plate heat exchanger is to be hydraulic pressure tested to 1.5 times the design pressure under witnessing of a Society's Surveyor.

5.6 - For information, **EKIN ENDUSTRIYEL ISITMA SOGUTMA SAN. Ve TIC. AS.** has declared to Bureau Veritas the following production site:

EKIN ENDUSTRIYEL ISITMA SOGUTMA SAN. Ve TIC. AS.
Dudullu Organize Sanayi Bölgesi
DES Sanayi Sitesi 107 sk. No:2-4-6
Ümraniye, Istanbul
Türkiye

6. MARKING OF PRODUCT

Each heat exchanger shall be permanently marked with at least:

- Name of manufacturer, year and serial number
- Design pressure
- Design temperature
- Test pressure and date of the test
- Society’s brand as relevant

7. OTHERS

It is **EKIN ENDUSTRIYEL ISITMA SOGUTMA SAN. Ve TIC. AS.** responsibility to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.

***** END OF CERTIFICATE *****