

**POTVRDA O TIPNOM ODOBRENJU SUSTAVA ZA OBRADU
BALASTNIH VODA**
TYPE APPROVAL CERTIFICATE OF BALLAST WATER MANAGEMENT SYSTEM



REPUBLIKA HRVATSKA

REPUBLIC OF CROATIA

Izdana u ime Vlade REPUBLIKE HRVATSKE od HRVATSKOG REGISTRA BRODOVA

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Potvrđuje se da je ovaj sustav za obradu balastnih voda pregledan i ispitan u skladu sa zahtjevima specifikacija sadržanih u Kodeksu za odobrenje sustava za obradu balastnih voda (Rezolucija MEPC.300(72)). Ova Potvrda vrijedi samo za ovaj sustav za obradu balastnih voda.

This is to certify that the ballast water management system listed below has been examined and tested in accordance with the requirements of the specifications contained in the Code for Approval of Ballast Water Management Systems (Resolution MEPC.300(72)). This certificate is valid only for the ballast water management system referred to below.

Naziv sustava za obradu balastnih voda: **ERMA FIRST BWTS FIT**
Name of ballast water management system:

Sustav za obradu balastnih voda proizveden od: ERMA FIRST ESK Engineering Solutions S.A.
Ballast water management system manufactured by: Schisto Industrial Park (VIPAS), Block 13
Keratsiniou – Skaramagas Ave.
18863 Perama GREECE

Oznaka tipa i modela, uključujući:
Under type and model designation and incorporating:

ERMA FIRST BWTS FIT 50-3000 – sustav za obradu balastnih voda koji koristi filtraciju i elektrolitičku dezinfekciju, te sredstvo za neutralizaciju.

ERMA FIRST BWTS FIT 50-3000 – ballast water treatment system using filtration and electrolytic disinfection with a neutralizing medium.

Vidi Tablicu 1 - Popis odobrenih BWTS
See Table 1 - List of certified BWTS

Prema nacrtu opreme/sklopnom nacrtu br.: 2-110-CERT-100-3000 PFD Rev.03
To equipment / assembly drawing No.: 2-120-CERT-100-3000 PID Rev.03

datum 13.10.2015.
date

Ostala oprema proizvedena od-:
Other equipment manufactured by-:

Filter

Proizvođač/Manufacturer: Filtersafe Automatic Screen Filtration

Tip/Type: BS-serija/series

Kapacitet/Capacity: 25 do/to 3740 m³/h

Veličina mrežice/Mesh size: 40 µm

Proračunski tlak/Design pressure: 10 bar

Najveća radna temperatura/Maximum working temperature: 50°C

Filter

Proizvođač/Manufacturer: Filtrex S.r.l.

Tip/Type: ACB-serija/series

Kapacitet/Capacity: 25 do/to 1040 m³/h

Veličina mrežice/Mesh size: 40 µm

Proračunski tlak/Design pressure: 10 bar

Najveća radna temperatura/Maximum working temperature: 55°C

Elektro-klorinacijska jedinica/Electro-chlorination unit

Proizvođač/Manufacturer: ERMA FIRST ESK

Tip/Type: ECF100; ECF250; ECF500; ECF750; ECF1000

ECF100Ex; ECF250Ex; ECF500Ex; ECF750Ex; ECF1000Ex

Najmanja i najveća radna temperatura/Minimum and maximum operating temperature: -2°C i/and 55°C

Proračunski tlak/Design pressure: 6 bar

Najmanji radni salinitet/Minimum operating salinity: 0,9 PSU

Prema nacrtu opreme/sklopnom nacrtu br.: —

To equipment / assembly drawing No.:

datum

date

Nazivni kapacitet obrade: 50 - 3000 m³/h
Treatment rated capacity:

Ova Potvrda o tipnom odobrenju izdana je na osnovu odobrenja od Republike Grčke, Potvrda br.: 4245.9/01/15.

This Type Approval Certificate is issued based on approval by Hellenic Republic, Certificate No.: 4245.9/01/15.

Kopija ove Potvrde o tipnom odobrenju mora se nalaziti na brodu opremljenom ovim sustavom za obradu balastnih voda, za pregled na brodu. Ako je Potvrda o tipnom odobrenju izdana na osnovu odobrenja od druge Uprave, potrebno je navesti tu Potvrdu o tipnom odobrenju.

A copy of this Type Approval Certificate shall be carried onboard a ship fitted with this ballast water management system, for inspection onboard the ship. If the Type Approval Certificate is issued based on approval by another Administration, reference to that Type Approval Certificate shall be made.

Model	Nazivni kapacitet obrade <i>Treatment rated capacity (m³/h)</i>	Filter model FILTER SAFE FS	Filter model FILTREX FX	Elektro-klorinacijska jedinica <i>Electro-chlorination unit</i>
BWTS FIT 100	20 – 100	BS-031H/V BS-050H/V	ACB-910-150	1x ECF100
BWTS FIT 200	40 – 200	BS-061H/V-T BS-070H/V	ACB-935-200	1x ECF250
BWTS FIT 300	60 – 325	BS-101H-10/V BS-101H/V-T BS-100H/V BS-100H/V-T	ACB-945-200	1x ECF250
BWTS FIT 400	80 – 400	BS-151H/V BS-151H/V-T BS-150H/V BS-150H/V-T	ACB-955-250	1x ECF500
BWTS FIT 600	120 – 600	BS-201H/V BS-201H/V-T BS-200H/V BS-200H/V-T	ACB-985-300	1x ECF500
BWTS FIT 800	160 – 900	BS-300H/V	ACB-999-350	1x ECF750
BWTS FIT 1000	200 – 1000	BS-300H/V-T BS-400H/V	ACB-999-350	1x ECF1000
BWTS FIT 1200	200 – 1200	BS-400H/V BS-600H/V-T	2xACB-985-300 1xACB-9100-400	1x ECF1000
BWTS FIT 1500	160 – 1500	BS-400H/V-T BS-603H/V	2xACB-985-300 1xACB-9100-400	2x ECF750
BWTS FIT 2000	200 – 2000	BS-603H/V-T BS-804H/V	2xACB-999-350 1xACB-9120-500	2x ECF1000
BWTS FIT 2500	200 – 2500	BS-804H/V-T BS-1004H/V	3xACB-999-350 1xACB-9200-600	2x ECF1000
BWTS FIT 3000	200 – 3200	BS-1004H/V-T BS-1204H/V-T BS-1206H/V	3xACB-999-350 1xACB-9200-600	3x ECF1000

Granični radni uvjeti su opisani u ovom dokumentu (temperatura/salinitet):

Limiting operating conditions imposed are described in this document (temperature/salinity):

Temperatura elektrolita pri dobavi/*Electrolyte feed temperature:* > -2°C
Salinitet elektrolita pri dobavi/*Electrolyte feed salinity:* 0,9 PSU
Vrijeme zadržavanja/*Hold time:* nije primjenjivo/*not applicable*

Ostala ograničenja uključuju slijedeće:

Other restrictions imposed include the following:

Sredstvo za neutralizaciju/*Neutralizing medium:*
Vodena otopina natrijevog hidrogensulfita/*Aqueous solution of sodium bisulfite (38% w/w)*
Ukupni ostatni oksidans/*Total residual oxidant:* 6 mg/l

Ova oprema je projektirana za rad u slijedećim uvjetima:*

*This equipment has been designed for operation in the following conditions:**

Najveći radni tlak/*Maximum working pressure:* 6 bar
Temperatura okoline/*Ambient temperature:* 0°C do/to 55°C

Mjesto pečata
Official stamp

Potpis
Signed

.....
Marinko Popović, dipl.ing.

Uprava
Administration of

.....
Republika Hrvatska
.....
Republic of Croatia

Izdana
Issued this

.....
8. dana lipnja 2018.
.....
8th day of June 2018

Valjana do
Valid until this

.....
8. dana lipnja 2022.
.....
8th day of June 2022

* Unesi projektna ograničenja sustava
Insert system design limitations