

TEHCROSS BREAKING NEWS

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BWMS Total Solution Provider Techcross

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ECS USCG Type Approval Achieved



Marine Safety Center BWMS Type Approval Status



<i>Approved</i>						
Initial Application Received	Manufacturer (Country)	Model	Independent Lab	System Type	Capacity	Certificate Issued* (Amended)
20 Sep 2016	Optimarin (Norway)	OBS/OBS Ex	DNV GL	Filtration + UV	167 – 3,000 m ³ /h	02 Dec 2016 (03 Nov 2017)
21 Sep 2016	Alfa Laval (Sweden)	Pure Ballast 3	DNV GL	Filtration + UV	150 – 3,000 m ³ /h	23 Dec 2016 (21 Dec 2017)
23 Sep 2016	TeamTec OceanSaver AS (Norway)	OceanSaver MK II	DNV GL	Filtration + Electrodialysis	200 – 7,200 m ³ /h	23 Dec 2016 (18 Oct 2017)
24 Jan 2017	Sunrui (China)	BalClor	DNV GL	Filtration + Electrolysis	50 – 8,500 m ³ /h	06 Jun 2017 (05 Jan 2018)
31 Mar 2017	Ecochlor, Inc. (USA)	Ecochlor BWTS	DNV GL	Filtration + Chemical Injection	500 – 16,200 m ³ /h	10 Aug 2017 (26 Apr 2018)
02 May 2017	Erma First (Greece)	Erma First FIT	Lloyds Register	Filtration + Electrolysis	100 – 3,740 m ³ /h	18 Oct 2017
31 Oct 2017	Techcross, Inc. (Republic of Korea)	Electro-Cleen System	Korean Register	Electrolysis	150 – 12,000 m ³ /h	05 Jun 2018

*Some manufacturers have requested multiple amendments to their Type Approval Certificates. The first date is the date when the original certificate was issued, and the date in parentheses is the date of the current amendment. Copies of Type Approval Certificates can be found at <http://www.dco.uscg.mil/mssc/Ballast-Water/TACs/>, or by visiting the USCG Approved Equipment List at: <http://cgmix.uscg.mil/Equipment/Default.aspx>

- ✓ Manufacturer (Country) : **Techcross (Korea)**
- ✓ Model : **Electro-Cleen™ System**
- ✓ System Type : **Electrolysis**
- ✓ Initial Application Received : **31 Oct 2017**
- ✓ Independent Lab : **Korean Register**
- ✓ Certificate Issued : **05 June 2018**

ECS (Electro-Cleen™ System), developed by Techcross, has become the first Korean BWM System that received the USCG type approval on 5 June 2018. As of June, total 7 manufacturers are granted USCG type approval in the world.

All vessels discharging ballast water in the US waters are required to be equipped with USCG type approved BWMS apart from IMO type approved one. Test protocol applied for USCG type approval is considered far more difficult than that for IMO G8 type approval in spite of same discharging standard. However, Techcross had finished all the required USCG type approval tests in June, 2017 and submitted application documents in October. After reviewing from IL (Independent Laboratory) and USCG, ECS was confirmed to be the world's 7th USCG type approved BWMS as of 5 June, 2018.

ECS using full-flow electrolysis technology is the system to minimize necessary component with no filter, which helps to make it unnecessary to install additional equipment in BWMS and to keep its long-term maintenance. Techcross expects that ECS will provide a valuable solution to clients who need to install USCG type approved BWMS.

Advantages of ECS



Compact & Simple

Combination of component not involving filtration



Easy Maintenance

No major moving parts leading to minimized maintenance cost



Abundant Reference List

As global no. 1 references as one of the pioneers in BWMS



Service Network

Well-known repair shipyards and global partners in the front line for prompt service

Global Network & Total Services

Overseas Offices

Techcross China Office

- Since 2010
- Qingdao, China
- A/S service, C/S, retrofitting, training center

Techcross Singapore Office

- Since 2011
- Alexandra Point, Singapore
- A/S service, retrofitting, spare parts sales
- Technical seminar, training program

Techcross America Office

- Since 2016
- Houston, USA
- A/S service, spare parts sales
- Providing USCG solutions

Techcross Europe Office

- Since 2017
- Rotterdam, Netherlands
- Sales, spare parts sales

Total Services

Worldwide Logistic System

- Direct delivery by Techcross and contracted logistic companies
- Covered all of areas 365 days

Crew Training

- Professional training lab both domestic and overseas
- Various education curriculum for trainee

Technical Seminar

- Technical training program with actual system in the overseas offices
- Operates several training centers in overseas

Integrated Management System

- Systemic work process with clients' database and analyzed service report
- Remote troubleshooting support system



▲Worldwide logistic system



▲BWMS training program