

# Letter regarding: FOWE ECO Solutions



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FOWE ECO Solution test at Alfa Laval Aalborg Test Centre Denmark		1 / 2
Issued by	Department	Date
Lars Bo Andersen	Alfa Laval Aalborg, Test Centre	18-12-2023

## Recipients

Fowe Eco Solutions Ltd.  
Trust Company Complex  
Ajeltake Road, Ajeltake Island, Majuro  
MH96960 Marshall Islands  
Registration Number: 111685  
Att.: Sven Thy Christensen

To whom it may concern

This Letter is valid until 31/12-2025. Alfa Laval Aalborg A/S reserves the right to revise or withdraw this Letter if the applicability of the emulsified fuel oil and water mixture used on Alfa Laval boilers is considered to change during this time.

## Test Certificate

Alfa Laval Aalborg Test & Training Centre conducted tests on emulsified fuel oil and water mixture on a boiler in the Test & Training Centre in Aalborg, Denmark from October to December 2023.

- A fuel oil, 180 cSt VLSFO 0,5%, was emulsified by FOWE with water using the FOWE CAVITECH product.
- The emulsified fuel oil and water mixture was combusted on a OS-TCi, 2 t/h boiler with Multi Fuel Burner type MF PA 1.7 test center version (pressure atomizing burner).
- The fuel supply system for the 2t boiler needed modification for handling the emulsified fuel oil and water mixture and a non-standard pressurized return line was established.

Several emulsified fuel oil and water mixture tests was performed on the test boiler and compared against a fuel oil without water mixture.

After establishing a pressurized return line, the boiler with the pressure atomizing burner, was capable, under constant operation by skilled boiler operators, to combust the emulsified fuel oil and water mixture up to and including 15% water content. Above 15% water content, we don't recommend using this type of burner.

Inspection and evaluation after test revealed no significant wear of components in contact with the emulsified fuel oil and water mixture but at this point, it is unclear what the longtime operation will cause of wear and/or problems on the boiler/fuel/exhaust gas system.

Since no significant problems were found regarding the inspected components. Alfa Laval does therefore not object to the usage of the emulsified fuel oil and water mixture prepared by FOWE technology under the conditions that were used during the test meaning same boiler and burner type and a modified return line.

Other boiler/burner types may require other arrangements to combust the emulsified fuel oil and water mixture. Consequently, the result of the test cannot be regarded as a generalized statement.

As the "fuel oil water mixture solution" is neither produced nor sold by Alfa Laval Aalborg, Alfa Laval Aalborg cannot be held responsible for any damage to the boiler or other components that may be caused by using the "fuel oil and water mixture".

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Best regards,



Lars Bo Andersen  
Head of Test & Training Centre  
Alfa Laval Aalborg, Denmark.