



February 2018

## FAQ: Alfa Laval PureBallast 3 and the IMO revised G8 guidelines

**The following questions and answers explain the implications of Alfa Laval PureBallast 3 type approval according to the revised G8 guidelines.**

### **1. What tests were needed for Alfa Laval to secure an IMO type approval certificate according to the revised MEPC.279(70) 2016 G8 guidelines?**

Two additional land-based tests of biological efficacy, performed without holding time, had to be conducted in each water salinity. The component environmental tests are more in line with the requirements of U.S. Coast Guard (USCG). This means that the requirements are more stringent compared to the MEPC.174(58) 2008 G8 requirements. IMO accepts the use of the reproductive MPN method for evaluating biological efficacy tests, whereas the USCG requires the use of the CMFDA/FDA method.

### **2. Are there any hardware changes to the Alfa Laval PureBallast 3 system as a result of the revised G8 requirements?**

A conductivity sensor is installed to determine which salinity the system is being operated in. Otherwise, the hardware, flow and power consumption are generally the same.

### **3. Can an installed Alfa Laval PureBallast 3 system that is compliant with the 2008 G8 guidelines be upgraded for compliance with the revised 2016 G8 guidelines?**

It is not necessary to upgrade. IMO has issued a resolution stating that vessels which have installed legacy systems should not be penalized.

### **4. Should ship owners order a system with type approval according to the revised 2016 G8 guidelines already now?**

Ship owners should consider when the system will be installed. If the system will be installed prior to 28<sup>th</sup> October 2020, an Alfa Laval PureBallast 3 system with type approval according to the 2008 G8 guidelines will be proposed. This system will be fully compliant with IMO regulations, now and in the future.

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**Editor's notes**

About Alfa Laval PureBallast

PureBallast, which was the first commercially available ballast water treatment solution, is a chemical-free technology sold and serviced by Alfa Laval. A vital component of PureBallast is the enhanced UV reactor, which was developed jointly by Alfa Laval and Wallenius Water based on Wallenius Water technology. All PureBallast systems are available with both IMO and U.S. Coast Guard type approvals.

About Alfa Laval

Alfa Laval is a leading global provider of specialized products and engineering solutions based on its key technologies of heat transfer, separation and fluid handling.

The company's equipment, systems and services are dedicated to assisting customers in optimizing the performance of their processes. The solutions help them to heat, cool, separate and transport products in industries that produce food and beverages, chemicals and petrochemicals, pharmaceuticals, starch, sugar and ethanol.

Alfa Laval's products are also used in power plants, aboard ships, oil and gas exploration, in the mechanical engineering industry, in the mining industry and for wastewater treatment, as well as for comfort climate and refrigeration applications.

Alfa Laval's worldwide organization works closely with customers in nearly 100 countries to help them stay ahead in the global arena. Alfa Laval's worldwide organization works closely with customers in nearly 100 countries to help them stay ahead in the global arena. Alfa Laval is listed on Nasdaq OMX, and, in 2016, posted annual sales of about SEK 35.6 billion (approx. 3.77 billion Euros). The company has about 17 000 employees.

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