



Smarter Sealing for Dry Docks



A Smarter Approach to dry dock operations

Dry docks are used when vessels need to undergo repairs or general maintenance work. When a vessel enters the dry dock, the gates are closed, and the seawater is drained out so that hard to reach areas of the ship which have been exposed to seawater for a prolonged period can be accessed.

Although a straightforward process in theory, the reality is not so simple. Currently, non-engineered extruded seals are used on dry dock doors, though these do not provide a completely watertight solution. As a result, auxiliary pumps are used to displace water from the dry dock area, but these create considerable environmental side effects.

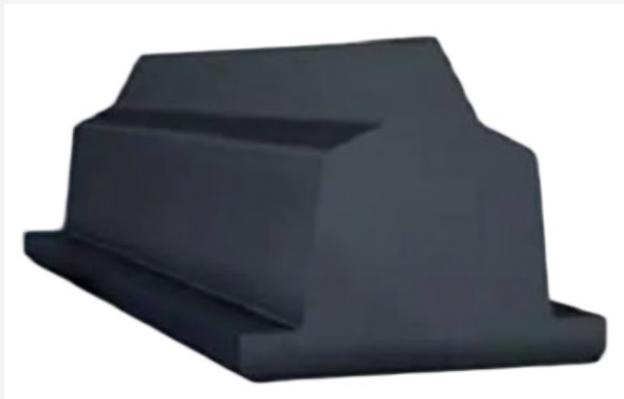
Trelleborg Marine & Infrastructure's watertight method is more efficient and more effective than the conventional pump installation approach. In this document you will discover why it pays to take the Smarter Approach to dry docks.

GINA GASKET

- Engineered with multiple hardnesses to ensure watertight solution
- Durable
- Flexible with low relaxation and compression set
- Highly deformable
- Provides greater tolerance bandwidth
- Eliminates the need for multiple auxiliary compressors
- Low jacking force

BENEFITS OF THE GINA GASKETS:

- No auxiliary pumps required – this reduces CO₂ emissions and noise
- Less fixation material on the door compared to traditional approach – reduces the amount of steel required, hence more economical for installation time
- Easier installation with choice of multiple sizes
- Work with an experienced partner with proven credentials in dry docking
- No maintenance required and seals last for decades, with replacements usually not necessary within the first 50 years
- Various hardness allows for more tolerance bandwidth on the concrete or steel



TRADITIONAL METHOD

- Multiple D-fenders needed for optimal water tightness
- The D-fenders can only be manufactured in one hardness (65 - 70°ShA) as this is an extruded product hence extra powerful jacks will be needed to close the dry dock door in the last phase which is more costly
- Multiple clamping systems needed for fixation on the floating door, hence extra cost
- Increased amount of time needed for installation
- Not leak free (always a leakage path present due to the shape of the D-fender and limited compression in conjunction with the surface tolerances)
- Non-dry dry dock means moisture is present which can have a negative effect on the expensive coating system to be applied
- The D-fender is not capable of absorbing high tolerances/differences in the concrete so extra work has to be implemented to the substrate for improved smoothness
- High fuel costs and large investment in powerful compressors
- Seals have a shorter lifetime which results in replacement of the D-fenders after a few years and more downtime of the dry dock

NEW METHOD

- One small Gina/one seal will suffice for watertight closure
- Only one clamping construction needed for fixation
- Less cost (man hours) for installation
- Less downtime as the Gina has a prolonged lifetime expectancy, no maintenance as required
- Greater tolerance bandwidth for the Gina gasket
- No auxiliary compressors needed, no investment in material and fuel
- Proven functionality as this concept derives from the immersed tunnel market and numerous references in "Floating dry dock doors" are available
- Watertight closure with low jacking force due to variety in hardness in the Gina gasket





Trelleborg is a world leader in engineered polymer solutions that seal, damp and protect critical applications in demanding environments. Its innovative solutions accelerate performance for customers in a sustainable way.

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