

DockSafe®

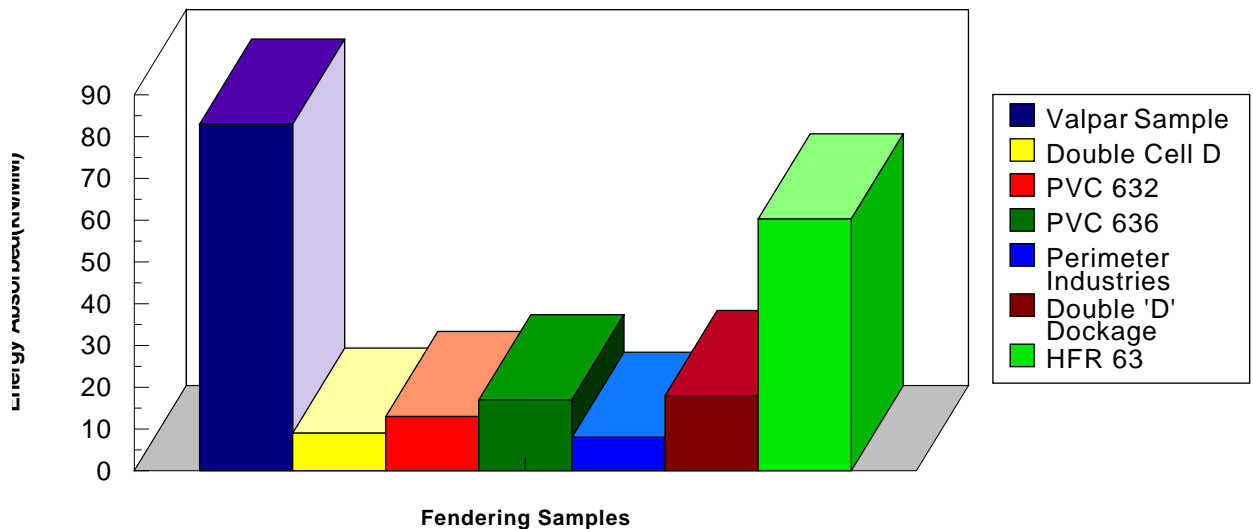


Graph 'Comparison of Fendering Samples – Energy Absorbed During Loading'

The chart shows that in terms of energy absorption, the DockSafe® sample is by far superior. This is why DockSafe® can be used instead of conventional fendering methods, and why the other products need the addition of pneumatic buoys traditionally suspended from boats. If the fendering is unable to absorb a substantial amount of the energy imposed upon it, then it will offer negligible protection after initial impact.

During unloading it was found that 53% of the energy absorbed by the DockSafe® sample was dissipated. This indicates a lower tendency for the impacting object to bounce off the fender.

Comparison of Fendering Samples Energy Absorbed During Loading



DockSafe® data obtained by Queens University of Belfast
and presented by **VALPAR®**

DockSafe®



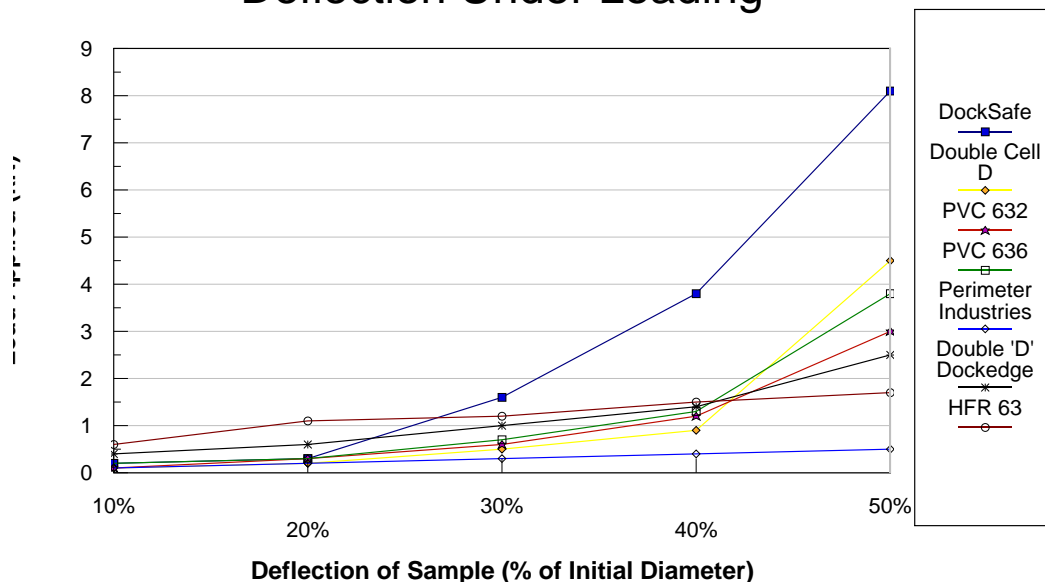
Comparison of Fendering Samples – Deflection Under Loading

The line graph represents the load applied to each sample against the deflection of that sample as a percentage of its initial diameter, in short, how much force the product is practicably able to withstand.

As we can see, Valpar DockSafe® can withstand almost two times more force than the next nearest alternative.

Note how the Valpar graph curves exponentially, compared to the straight-line graphs of the Perimeter Industries and HFR 63 samples. This also indicates a desirable property: it means the fender will collapse quite substantially (about 30% deflection) with the initial impact of the boat, removing much of its momentum. The next 20% deflection then takes the true impact of the boat hull.

Comparison of Fendering Samples Deflection Under Loading



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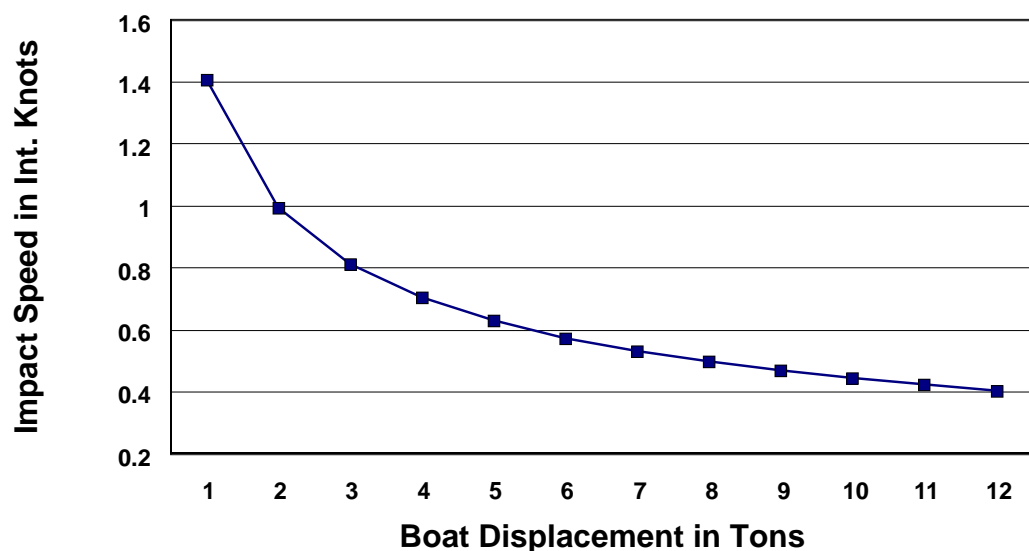


Maximum Safe Impact Velocity Mk 2 Fixing Rail (Normal to Fender) in Int. Knots

This graph displays the maximum impact velocity in International Knots for boats weighing between 1-12 tons. The results are representative of impact occurring head on to the fender which is attached to a fixed surface. These conditions therefore simulate the worst possible conditions within a marina environment.

The data shows that a boat of a certain weight can impact the fender at the correlating speed and the fender will operate effectively and recover completely.

Maximum Safe Impact Velocity Mk 2 Fixing Rail (90° to Fender) in Int. Knots



DockSafe® data obtained by Queens University of Belfast
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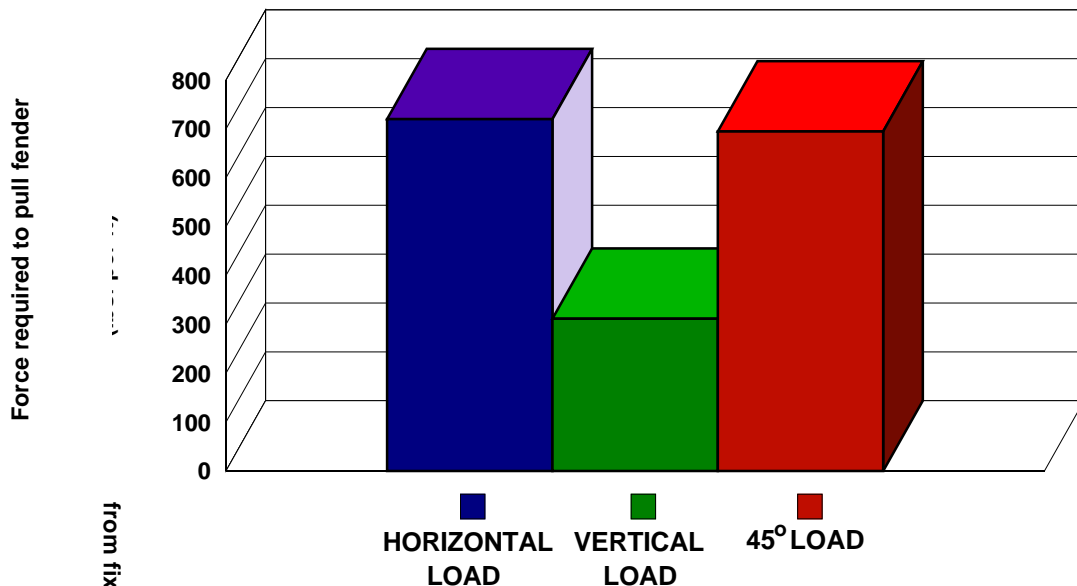
'Pull Out' Testing on DockSafe®

The graph displays the force required to pull the DockSafe® fender from its fixing rail, per metre of fender installed.

Three separate forces are displayed. The horizontal force was applied by pulling the fender horizontally from the fixing rail. The vertical force was applied by pulling vertically downwards and the 45° load was applied by pulling the fender in a downward direction at a 45° angle.

The 45° downward force is most likely to replicate the action of a boat weighing down on the fender.

Pull Out Testing on DockSafe®



DockSafe® data obtained and presented by
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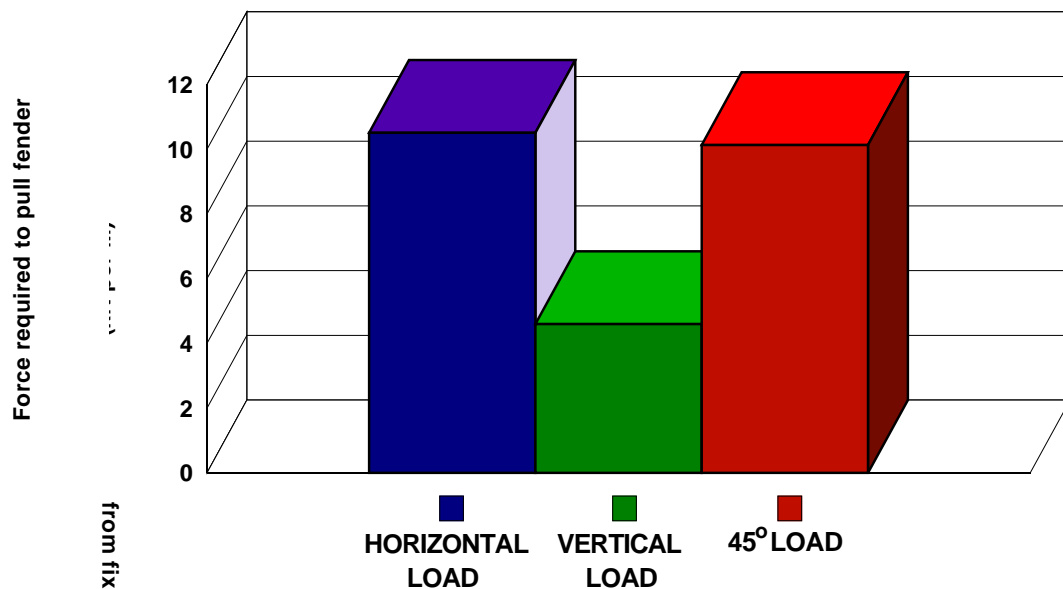
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Pull Out Testing on DockSafe®

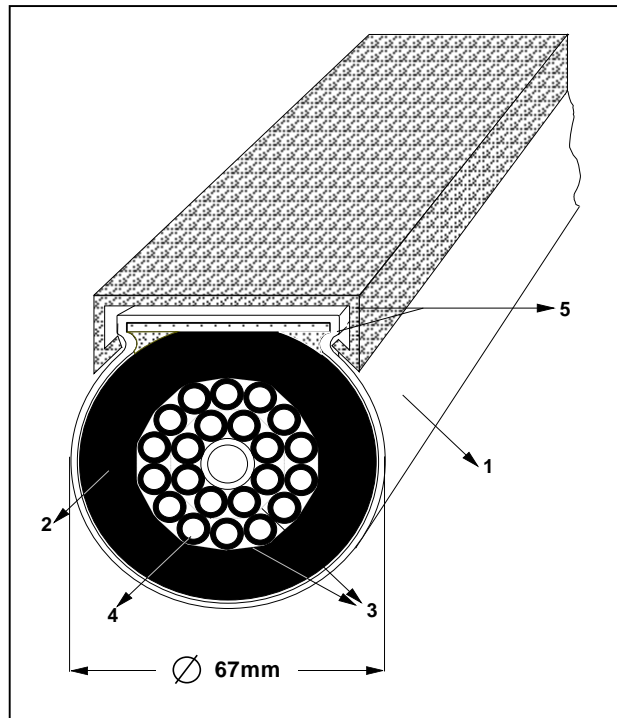


DockSafe® data obtained and presented by
VALPAR®

DockSafe®



Product Profile



(1) Protective outer layer

High quality compound is used, best suited to hard wear in a marine environment.

- Resistant to: Deterioration, Abrasion/Tearing, Sea Water, Growth of Algae
Heat/Cold, Solvents, Ozone/UV Light
- Also offers: Low Friction, Low Soiling Properties

(2) Flexible closed cell foam insulation

Provides soft stable cushioning to absorb the initial momentum of the hull's impact.

- **Double high-tenacity film wrapping**

DockSafe®



(1) Valpar Docksafe' s optimum tube configuration

Tests have been carried out on many different configurations on loading/deflection, and energy absorption/dissipation before deciding on the optimum energy absorption system.

(5) Docksafe fixing system

Offers a unique easy-fit system.
Straight line "no sag" fixing, enhances dock appearance.
Highlights where dock ends and water begins at times of poor visibility.