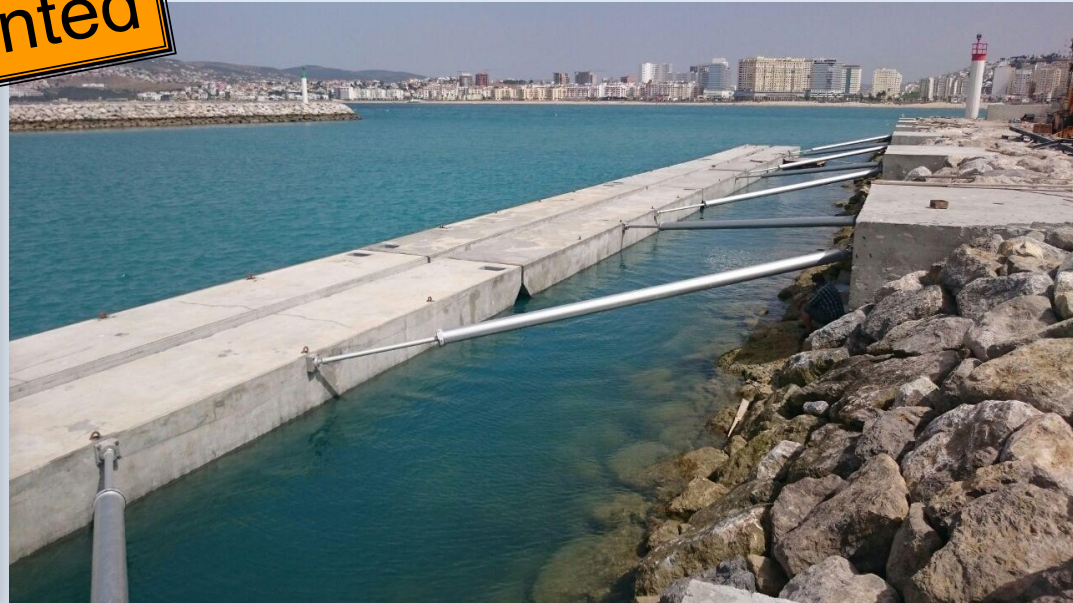


Mooring Solutions & Stabilisers for Floating Pontoon

Patented



Conventional Solutions

Stiff mooring booms

- Zero damping capacity

Chains

- Huge movement at low water level
- Jerking

Piles

- Limited damping capacity
- High retention forces
- Damages
- High maintenance costs
- Discomfort



Increasingly challenging requirements

Bigger, heavier yachts

Case study / An every day scenario :

A **30m yacht** with 100 tons of weight **collides with the floating pontoon during docking manoeuvre**:

Conventional

Pontoon moored with conventional systems (limited damping capacity):

Colliding speed 0.1 m/s (0.2 kn) results in **20 tons of braking force**

Innovation

Pontoon moored with DualDocker (highly damped):

Colliding speed 0.1 m/s (0.2 kn) results in **2 tons of braking force**

DUALDOCKER REDUCES THE FORCES BY 90%

Kinetic energy: $E_{kin} = m v^2 / 2$ Braking force: $F = 2(E_{kin} / \text{distance})$ <small> Ekin... Kinetic energy [Joule] m ... mass [N]; 1 kg = 9.81 N V ... speed [m/s] F ... braking force [N]; 1 kg=.,81 N Distance... braking distance [m] </small>	Weight: 10 t			Weight: 500 t		
	v [m/s]	Damp. Travel [m]	Retention force [kg]	v [m/s]	Damp. Travel [m]	Retention force [kg]
	0.1 m/s	0.5 m	0,2 t	0.1 m/s	0.5 m	10 t
		0.3 m	0,3 t		0.3 m	17 t
		0.1 m	1,0 t		0.1 m	50 t
0.3 m/s	0.3 m/s	0.5 m	1,8 t	0.3 m/s	0.5 m	90 t
		0.3 m	3,0 t		0.3 m	150 t
		0.1 m	9,0 t		0.1 m	450 t
0.5 m/s	0.5 m/s	0.5 m	5,0 t	0.5 m/s	0.5 m	250 t
		0.3 m	8,3 t		0.3 m	417 t
		0.1 m	25,0 t		0.1 m	1 250 t

Why DualDocker ?

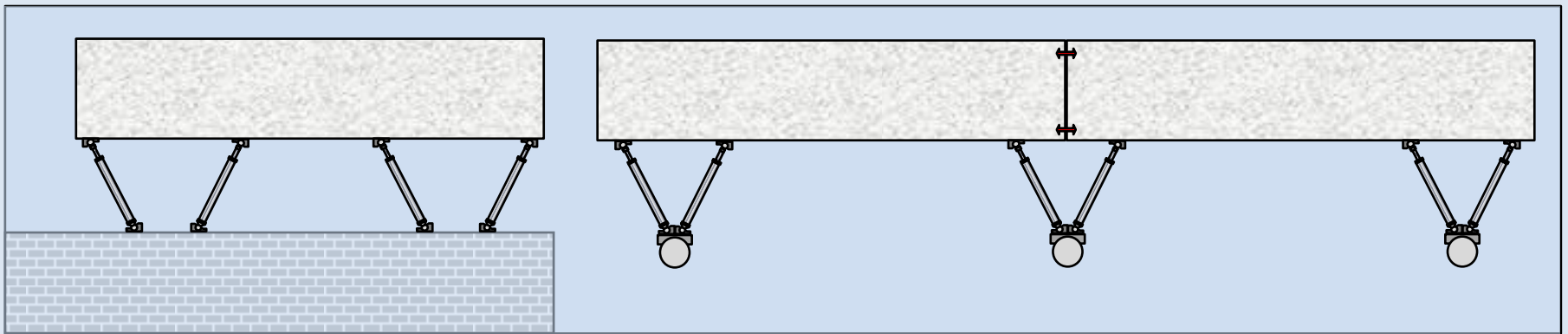
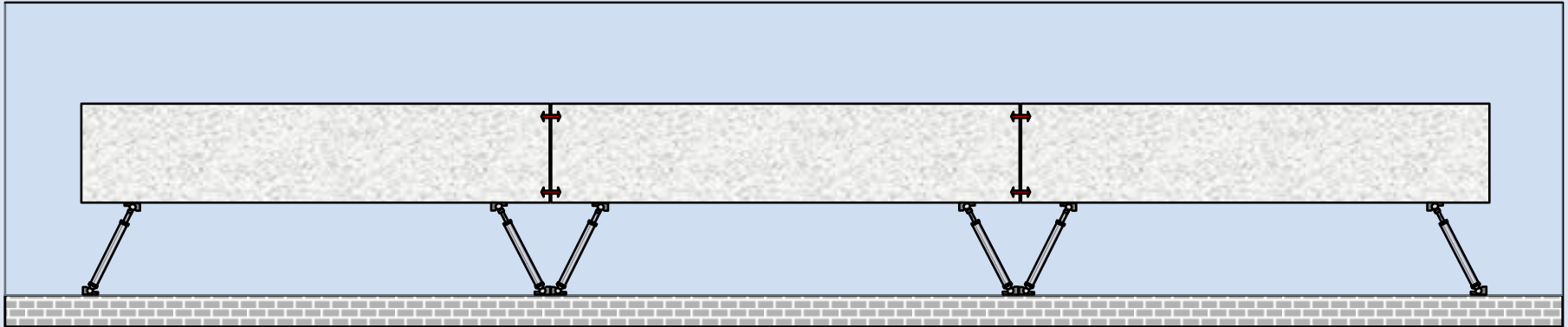
- **Zero play** regardless of water level
- **Ultra high damping capacity** to handle forces of collisions
- **Reduced** retention **forces by up to 90%**
- **Stable** and secure
- **Fixed distance** to quay

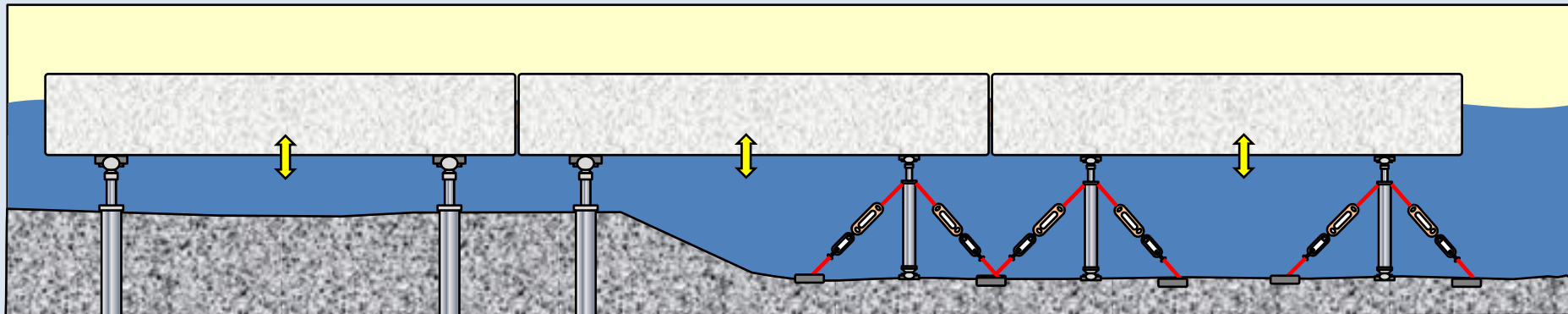
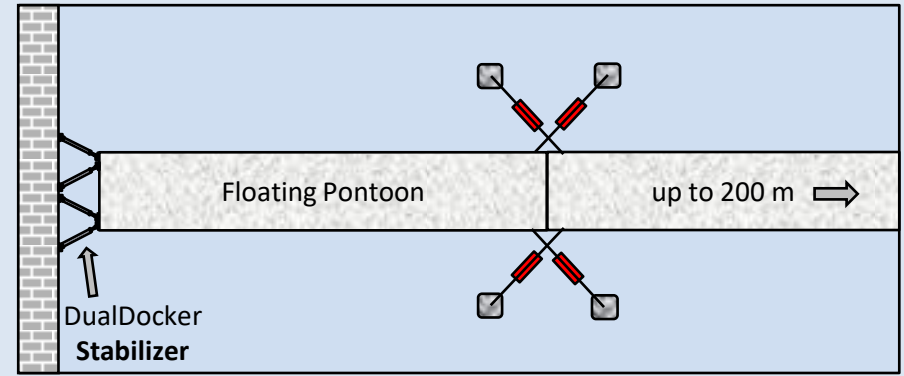
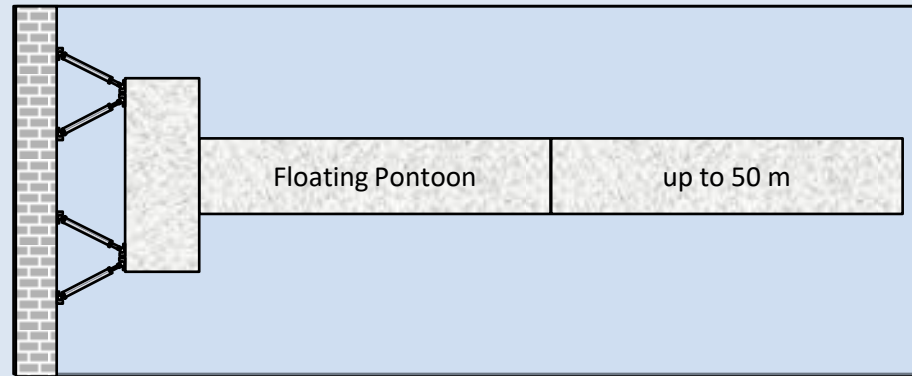
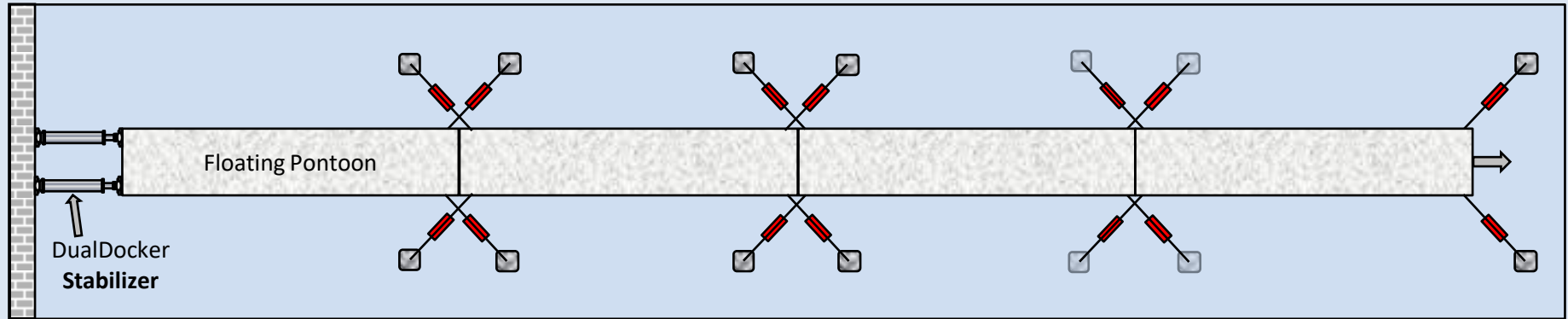
- **Worry-free** in times of rough weather conditions
- Quick and **easy installation**
- **No ropes** or cables
- Negligible maintenance paired with **long life-expectancy**
- **Zero impact** on underwater world

Best Mooring & Stabilising Solution for Challenging Conditions

- **Unprotected locations**
- **Long fetch**
- **Choppy waters**
- **Heavy-duty floating pontoons**
- **Big boats, high collision speed**







Protecting our precious environment
Respecting fauna & flora
Complying with strict regulations



Innovative Mooring Solutions & Berthing Stabilisers



Damped, Secure & Eco-Friendly

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