Floating Barriers - **PSB 5500™ Port Security Barrier System**

The PSB 5500™ anti-terrorism system employs a continuous net capture system supported on a floating pontoon structure. It was developed by the US Navy to be used when maximum security is required.

This marine barrier system has the highest ultimate stopping energy (9.09M ft lbf/12.32 MJ) and working stopping energy (5.49M ft lbf/7.44 MJ) of the Harbor Offshore Barriers’ anti-terrorism systems.

**The PSB 5500™ maritime security system is designed to stop:**
- Fast Inshore Attack Crafts (FIAC)
- Boat-Borne Improvised Explosive Devices (BBIED)
- Multiple boat and swarm attacks
- Intruders at full power before, during and after impact
- Slow speed, heavy tonnage vessels
- High speed, lower tonnage vessels

**PSB 5500™ barrier system – Energy Absorption and Stopping Power**
- Ultimate stopping energy 9.09M ft lbf/12.32 MJ
- Working stopping energy 5.49M ft lbf/7.44 MJ

**Constructed System**
- PSB 5500™ unit length is generally 50 ft (15.24 m) and 40 ft (12.2 m) units are available.
- Pontoons are High Density Polyethylene (HDPE) that is corrosion free and resistant to UV exposure for 50+ years.
- Pontoons are usually 1.75 in (4.45 cm) thick and 30 in (76.2 cm) in diameter subject to conditions, customer requirements or other factors.
- Pontoons can be supplied in either parallel or perpendicular design.
- Netting attached to a galvanized steel beam that runs from pontoon to pontoon.
- Netting is constructed of either nylon or metal mesh (steel or stainless steel) and generally rises 9 ft (2.74 m) above the water line.
- Anchors vary by type and size depending on engineering requirements.
- Shore terminations are designed and installed to resist loads induced by high current flow rates.
- Shore connections and subsurface anchors are designed to accommodate large fluctuations of water levels at dams and ocean tide cycles, high currents, and up to 30 ft (9.14 m) tidal ranges.
- Connection units and latches are of proprietary design by Harbor Offshore Barriers to handle continuous motion and heavy loads.

**PSB 5500™ – Harbor Offshore Barriers’ highest ultimate and working stopping barrier product.**

- Under an 85-knot wind and 4-knot current broadside conditions, the system can withstand 911.2 lbf (4 053.22 N).
- Parts and connections are interchangeable.
- Gate systems built to client needs.

**Performance**
- Durability – the HDPE pontoon’s thickness and diameter produce structural strength sufficient to withstand the weight of the heavy steel beam and netting so that the entire system can stop high-energy vessels.
- Low-maintenance – uses composite materials, a simple system structure and as few parts as possible to support easy and low-cost inspection and maintenance.
- Low operational cost – making the system light and keeping the wind, current and wave loading on the system as low as practical gives operators the ability to easily open/close gates.

**Expertise and Service**
- Expert installation – teams include divers and marine constructors with over 30 years experience working with each other.
- Anchor placement and mooring arrangements – placing anchors on the seabed requires skills that few teams can offer.
- Fosters local partnerships – local sub-contractors join the team when qualified, gaining work skills and technology training.
- Life-cycle value – team experts provide life-cycle cost estimates to be used in formulating investment and insurance calculations and in selecting the system that meets the customer’s need.
## Harbor Offshore Barriers at a Glance

**MISSION STATEMENT:**
Our mission is to meet every customer’s unique needs, from project conception to completion. We offer you a full services package to assess, design, engineer, fabricate, install, and maintain your waterside perimeter barrier system with an experience foundation not offered by others.

**COMPANY:** Harbor Offshore Barriers, Inc., founded 2004

**AFFILIATION:** Marine security specialty company of Harbor Offshore, Inc. founded 1997

**HEADQUARTERS:** 4411 Dupont Court, Suite 130, Ventura, California 93003 USA

**MANAGEMENT:**
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- Dave Hutchinson, Chief Operating Officer
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- Cliff Center, Director of Marine Operations ccenter@harboroffshorebarriers.com

### PRODUCTS:

<table>
<thead>
<tr>
<th>Characteristic Benefit</th>
<th>Fixed Security Barrier FSB™ (Patent #7,744,313 B2)</th>
<th>Floating Barrier PSB 600™</th>
<th>Floating Barrier PSB 5500™</th>
<th>Floating PSB-T US Navy Model</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Structure</strong></td>
<td>Underwater Fixed Barrier</td>
<td>Global Standard</td>
<td>Heavy-Duty</td>
<td>Military Installations</td>
</tr>
<tr>
<td><strong>Ultimate Stopping Energy</strong></td>
<td>3.70M ft lbf/5.01 MJ</td>
<td>5.90M ft lbf/7.99 MJ</td>
<td>9.09M ft lbf/12.32 MJ</td>
<td>5.90M ft lbf/7.99 MJ</td>
</tr>
<tr>
<td><strong>Working Stopping Energy</strong></td>
<td>1.25M ft lbf/1.69 MJ</td>
<td>2.49M ft lbf/3.37 MJ</td>
<td>5.49M ft lbf/7.44 MJ</td>
<td>3.70M ft lbf/5.01 MJ</td>
</tr>
<tr>
<td><strong>Unit Length</strong></td>
<td>Pilings spaced up to 100 ft (30.48 m) apart</td>
<td>50 ft (15.24 m) / 40 ft (12.2 m) available</td>
<td>50 ft (15.24 m) / 40 ft (12.2 m) available</td>
<td>40 ft (12.2 m) / 50 ft (15.24 m)</td>
</tr>
<tr>
<td><strong>Netting Material</strong></td>
<td>Galvanized or stainless steel</td>
<td>Nylon or metal mesh</td>
<td>Nylon or metal mesh</td>
<td>Nylon</td>
</tr>
<tr>
<td><strong>Netting Attachment</strong></td>
<td>Steel pilings</td>
<td>Galvanized steel beam running from pontoon-to-pontoon</td>
<td>Galvanized steel beam running from pontoon-to-pontoon</td>
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</tr>
<tr>
<td><strong>Usual Netting Height</strong></td>
<td>Height 8 ft (2.44 m) / Depth to 80 ft (24.38 m)</td>
<td>8 ft (2.44 m)</td>
<td>9 ft (2.74 m)</td>
<td>7 ft (2.13 m)</td>
</tr>
<tr>
<td><strong>HDPE Pontoon Dimensions</strong></td>
<td>Not Applicable</td>
<td>1.25 in (3.17 cm) thick 30 in (76.2 cm) diameter Length engineered for site conditions</td>
<td>1.75 in (4.45 cm) thick 42 in (106.8 cm) diameter Length engineered for site conditions</td>
<td>1.25 in (3.17 cm) thick 30 in (76.2 cm) diameter Length engineered for site conditions</td>
</tr>
</tbody>
</table>

*Exact dimensions may vary; all specifications depend upon conditions, customer requirements and other factors.*

### EXPERIENCE:
- Since 2004, over 50,000 linear ft (15 240 m) fabricated, assembled, installed worldwide from Japan to Iraq to guard naval and infrastructure facilities.
- Multiple US Department of the Interior Bureau of Reclamation dam projects – PSB 600™ model certified for Bureau of Reclamation work.
- On-going US Navy inspection and maintenance services.
- Extensive testing of the FSB™, PSB 600™ and PSB 5500™ with independent US Navy and academic observers.