

# Hesco Barrier Bastion Systems

## 1. Overview: What is a Hesco Barrier Bastion?

A **Hesco Barrier** (also known as a *Hesco Bastion* or *Concertainer*) is a pre-fabricated, modular containment system designed for rapid security wall deployment and erosion control. It consists of a collapsible welded wire mesh basket lined with heavy-duty, UV-resistant non-woven geotextile fabric.

By filling the unit with locally sourced granular material—such as soil, sand, or crushed rock—engineers can rapidly construct scalable perimeter barriers.

- **Primary Applications:** Military force protection (shielding against small-arms fire and blast fragmentation) and civil engineering projects (flood defense, levees, and cofferdams).
- **Key Advantage:** Deploys up to 10x faster than traditional hand-filled sandbags with minimal manual labor.

## 2. Technical Specifications

| Parameter           | Value / Range              | Performance & Structural Impact                                          |
|---------------------|----------------------------|--------------------------------------------------------------------------|
| Carbon Content      | ≤ 0.1%                     | Enhances wire ductility and bendability without cracking.                |
| Wire Diameter       | 3.5 mm – 5.0 mm            | Ensures high tensile strength and structural rigidity.                   |
| Tensile Strength    | 500 – 800 MPa              | Absorbs heavy kinetic impacts and blast shockwaves.                      |
| Weld Shear Strength | 50% – 100% of base wire    | Prevents mesh joint detachment under heavy load filling.                 |
| Galvanized Coating  | 40 – 600 g/m <sup>2</sup>  | Delivers superior corrosion resistance in marine/harsh environments.     |
| Geotextile Weight   | 250 – 350 g/m <sup>2</sup> | Retains fine soil particles while allowing water drainage without tears. |

### Standard Hesco Unit Sizes (MIL Series)

| Model  | Height        | Width        | Length            | Cell Configuration |
|--------|---------------|--------------|-------------------|--------------------|
| MIL 1  | 54" (1.37 m)  | 42" (1.06 m) | 32' 9" (10.00 m)  | 9 Cells (4+5)      |
| MIL 2  | 24" (0.61 m)  | 24" (0.61 m) | 4' 0" (1.22 m)    | 2 Cells            |
| MIL 3  | 39" (1.00 m)  | 39" (1.00 m) | 32' 9" (10.00 m)  | 10 Cells (5+5)     |
| MIL 4  | 39" (1.00 m)  | 60" (1.52 m) | 32' 9" (10.00 m)  | 10 Cells (5+5)     |
| MIL 5  | 24" (0.61 m)  | 24" (0.61 m) | 10' 0" (3.05 m)   | 5 Cells            |
| MIL 6  | 66" (1.68 m)  | 24" (0.61 m) | 10' 0" (3.05 m)   | 5 Cells            |
| MIL 7  | 87" (2.21 m)  | 84" (2.13 m) | 91' 0" (27.74 m)  | 13 Cells (4+4+5)   |
| MIL 8  | 54" (1.37 m)  | 48" (1.22 m) | 30' 0" (9.14 m)   | 9 Cells (4+5)      |
| MIL 9  | 39" (1.00 m)  | 30" (0.76 m) | 30' 0" (9.14 m)   | 12 Cells (6+6)     |
| MIL 10 | 87" (2.21 m)  | 60" (1.52 m) | 100' 0" (30.50 m) | 20 Cells (5+5+5+5) |
| MIL 11 | 48" (1.22 m)  | 12" (0.30 m) | 4' 0" (1.22 m)    | 4 Cells            |
| MIL 12 | 84" (2.13 m)  | 42" (1.06 m) | 108' 0" (33.00 m) | 30 Cells           |
| MIL 19 | 108" (2.74 m) | 42" (1.06 m) | 10' 5" (3.18 m)   | 3 Cells            |

### 3. Frequently Asked Questions (FAQs)

#### What are the main advantages of Hesco Barriers over traditional sandbags?

Hesco barriers provide unmatched installation speed, structural integrity, and labor savings:

- **Deployment Efficiency:** A small crew using a front-end loader can fill a single Hesco unit in minutes, replacing thousands of hand-filled sandbags.
- **Structural Stability:** Interlocking wire-mesh cells prevent slumping, sagging, and displacement under hydraulic or blast pressure.
- **Scalability:** Units stack easily to build multi-tiered defensive walls or flood barriers.

#### What materials can be used to fill Hesco Barriers?

Hesco barriers accommodate almost any locally available granular fill material, including:

- **Sand & Gravel:** Ideal for kinetic energy absorption in military blast walls.
- **Clay & Compacted Soil:** Recommended for civil flood control to eliminate water seepage.
- **Crushed Rock & Small Rubble:** Highly effective for temporary perimeter barriers when soil is unavailable.

#### How long do Hesco Barriers last after deployment?

- **Standard Life Expectancy:** 2 to 5 years under outdoor UV exposure. UV-stabilized geotextile fabric delays degradation.
- **Long-Term Protection:** By applying shotcrete (sprayed concrete) or external cladding, service life can extend to 20+ years. Even if the fabric degrades over decades, the hot-dipped galvanized mesh cage maintains outer structural support.

#### Are Hesco Barriers reusable and easy to remove?

Yes. Modern recoverable Hesco bastions feature a pin-locking mechanism. Removing the vertical locking pin opens the mesh panel, dumping the fill material instantly. Once emptied, the mesh collapses flat for efficient transport, re-bundling, and storage.

### 4. Hesco Barriers vs. Concrete T-Walls: Defensive Physics Compared

When securing Forward Operating Bases (FOBs) or high-risk infrastructure, engineers choose between two distinct defensive mechanics: **Flexible Soft Armor (Hesco)** vs. **Rigid Hard Armor (Concrete T-Walls)**.

#### 1. Hesco Bastion (Flexible Kinetic Absorber)

**Energy Mechanics:** Functions as a massive kinetic sponge. Upon rocket, artillery, or shrapnel impact, the blast wave displaces internal sand grains. Friction between millions of particles converts and dissipates kinetic energy safely inside the unit.

**B2B Procurement Value:** Extremely low shipping cost (flat-packed from factory), ultra-fast installation using local fill material, and self-healing properties as soil naturally settles after non-catastrophic impacts.

#### 2. Concrete T-Wall / Bremer Wall (Rigid Shield)

**Energy Mechanics:** Relies on high mass and density to reflect blast shockwaves. The internal steel rebar matrix withstands extreme force, deflecting kinetic energy upward away from base assets.

**B2B Procurement Value:** Best suited for permanent bases where fill material (sand/earth) is completely unavailable. Requires heavy cranes for handling and higher freight budgets.

## Looking for Factory-Direct Hesco Barriers?

As a professional wire mesh manufacturer, **ABX Metal** supplies custom and standard MIL-spec Hesco bastions with hot-dipped galvanization and heavy-duty geotextiles.