ADJUSTABLE TOP-OF-SLAB BRACKET FOR CURTAIN WALL
Halfen’s HTOS brackets are designed to efficiently anchor stick or unitized curtain walls to the top of concrete slabs. When used along with a suitable Halfen anchor channel, the all-steel brackets have 3-dimensional adjustability, and have a safe working dead load and wind load capacity to match most curtain wall applications. The HTOS line may be used surface-mounted on the concrete slab, or within a pocket, if used along with an optional block-out (customized sheet metal block-outs can be furnished by Halfen).

The steel body features deep serrations and two slots for in-out adjustability. Four standard lengths (8", 10", 12", 14") are available, to cover virtually any anchoring geometry. Two adjustable clips are furnished with each bracket. Each clip includes a vertical dead load bolt, and a horizontal bolt, which may be flat-tipped, or pointed. Pointed bolts provide a fixed point to anchor unitized panels, and also serve as an anti-lift device for seismic conditions.

1. Adjustability:
   a. Up-Down: ± 1" (± 25 mm)
   b. In-Out: ± 1-1/4" (±30 mm)
   c. Left-Right* ± 2-5/8" (± 67 mm)

2. Working load capacity:
   a. Wind Load: 3750 lbs (16.7 kN)
   b. Dead Load: 950 lbs ( 4.2 kN)
   c. Uplift Load** 1930 lbs ( 8.8 kN)

* Indicated left-right adjustment considering use of 14" Halfen embed.
** Uplift load test with minimum torque of 33 ft-lb (45 N-M). Collapse occurs (bolt bend/slide) at 1930 lbs (8.6 KN).
Results shown reflect average of tests performed.
Halfen top-of-slab brackets are designed to be used in conjunction with Halfen anchor channels. The load capacities indicated assume the use of an HT6112 or larger anchor channel. However, the location of the embed and anchoring geometry may require the use of a different anchor channel. Contact Halfen engineering for application assistance.

**BLOCKOUTS:**

Halfen can provide sheet metal blockouts with or without foam filling for projects that specify flush floor slabs. All Halfen blockouts are custom-made to match the project requirements. Material is typically either 14 or 16 gauge pre-galvanized sheet.

**SHEATHS/BOOTS:**

Optional, low-friction Nylon® or Nylatron® sheaths or “boots” are available from Halfen. Low friction sheaths are designed to fit on HTOS jack bolts. Sheaths may be specified and installed to allow for smooth expansion and contraction displacement of unitized curtainwall panels.

**HTOS BRACKET SELECTION CHART**

**Distance “a”: cavity from edge of slab to backside of mullion (inches)**

<table>
<thead>
<tr>
<th>Distance “b”: distance from centerline of embed to edge of slab (inches)</th>
<th>1-2”</th>
<th>2.5”</th>
<th>3”</th>
<th>3.5”</th>
<th>4”</th>
<th>4.5”</th>
<th>5”</th>
<th>5.5”</th>
<th>6”</th>
<th>6.5”</th>
<th>7”</th>
</tr>
</thead>
<tbody>
<tr>
<td>5/8”-1”</td>
<td>HTOS08</td>
<td>HTOS08</td>
<td>HTOS10°</td>
<td>HTOS10</td>
<td>HTOS12</td>
<td>HTOS12</td>
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</tr>
<tr>
<td>1-2”</td>
<td>HTOS08</td>
<td>HTOS08</td>
<td>HTOS10</td>
<td>HTOS10</td>
<td>HTOS12</td>
<td>HTOS12</td>
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</tr>
<tr>
<td>2-3”</td>
<td>HTOS08</td>
<td>HTOS10</td>
<td>HTOS10</td>
<td>HTOS12</td>
<td>HTOS12</td>
<td>HTOS12</td>
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</tr>
<tr>
<td>3-4”</td>
<td>HTOS10</td>
<td>HTOS10</td>
<td>HTOS12</td>
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<td>HTOS12</td>
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</tr>
<tr>
<td>4-5”</td>
<td>HTOS10</td>
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<tr>
<td>5-6”</td>
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</tbody>
</table>

Conditions marked with (*) may require smaller bracket than indicated above. Verify that a-b distance falls within bracket range. Conditions in shaded area have reduced allowable load capacities. Check application with Halfen engineering.

HTOS08: 8” body, nominal a+b=4”, range [2-5/8” - 5”]
HTOS10: 10” body, nominal a+b=6”, range [4-5/8” - 7”]
HTOS12: 12” body, nominal a+b=8”, range [6-5/8” - 9”]
HTOS14: 14” body, nominal a+b=10”, range [8-5/8” - 11”]
For illustration purposes, left side clip (shown above-left) is shown with piercing bolt, and right side clip is shown above with flat-tipped bolt. For any specific project, either clip may be ordered with either type of bolt. Please specify bolt type for left and for right clip. HTOS brackets and clips may be used on unitized or on stick curtain wall applications designed for top of slab anchoring.

For application assistance, please contact Halfen engineering:
Tel: 210-658-4671, Fax: 210-658-7908, or at: halfen@meadowburke.com

HALFEN

Literature Available from Halfen

- **GLAZING**
  - Multi-Adjustable Curtain Wall Clips
  - Anchors for Glazing
  - Top-of-Slab Bracket for Curtain Wall

- **MASONRY**
  - Adjustable Concealed Lintel Systems
  - Anchors for Masonry
  - Fleming Masonry Veneer Restraint System

- **STONE**
  - Anchors for Stonework
  - HRM Stone Fixing Clips

- **PRECAST**
  - Anchors for Precast Panels
  - Application Details Anchors for Precast
  - Double Tee Stem Anchors

- **TECHNICAL**
  - Dynagrip Toothed Anchor Channels
  - Halfen Technical Manual (Anchor Channels, T-bolts & Profiles)

- **STAINLESS**
  - Halfen Products for Corrosive Environments

- **SOFTWARE**
  - AnkerCalc 1.1
  - Anker CAD

- **SPECS**
  - CSI 3-Part Specifications
  - Product Data Sheets

**Available Formats**
- Hard Copy Catalogs
- CD-ROM
- Website

**Disclaimer:** This brochure outlines the Halfen products intended for use in the North American marketplace, or on projects where North American design parameters have been used. All application illustrations shown in this publication are for guidance only and should not be taken as working drawings. Halfen reserves the right to amend, withdraw or make changes to products and specifications at any time with or without notice to customers, designers and users. It is the policy of Halfen Anchoring Systems to work with designers, specifiers, engineers and contractors in providing application assistance, suggestions and advice for the satisfactory solution of anchoring problems. However, all advice and drawings provided are subject to the approval of the design team, contractor or structural engineer, who take ultimate responsibility for proper product usage.