G-Force
Segmental Retaining Wall

Light-weight, easy to install and structurally sound

TECHO—BLOC
G-Force

Features & Benefits

- Optimized weight to achieve low shipping cost and maintain structural integrity
- 3.9° battered wall system to reduce active earth pressure
- Tapered units allow for straight or curved walls
- Easy installation
- Modern appearance
- Variety of colors
- Cap and corner units available (sold separately)

Applications

- Suitable for commercial, industrial, institutional and residential applications
- Construction of gravity retaining walls (without geogrid reinforcement) up to 2'-8" (0.8 m)\(^1\) (including embedment)
- Construction of intermediate to high MSE (Mechanically Stabilized Earth) wall systems
- Stairs, planters and terraced patios

Notes:
1. Maximum height under optimal conditions (no surcharge, no slope, good drainage and a gravel retaining soil)
Technical specifications

**PHYSICAL CHARACTERISTICS**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compressive Strength</td>
<td>5050 psi (35 MPa)</td>
</tr>
<tr>
<td>Water Absorption (max.)</td>
<td>9 lb/ft³ (144 kg/m³)</td>
</tr>
<tr>
<td>Freeze-Thaw</td>
<td>1.0% max. loss of mass after 100 cycles, or 1.5% loss of mass after 150 cycles</td>
</tr>
<tr>
<td>Dimensional Tolerances</td>
<td>Height: ± 1/16 in. [1.5 mm] Length &amp; Width: ± 1/8 in. [3 mm]</td>
</tr>
</tbody>
</table>

Note: Meets and exceeds the requirements of the ASTM C 1372 Standard Specification for Dry-Cast Segmental Retaining Wall Units.

**DESIGN DATA**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Horizontal Setback</td>
<td>3/16 in. (14 mm)</td>
</tr>
<tr>
<td>Infilled Unit Weight</td>
<td>122 pcf (19.2 kN/m³)</td>
</tr>
<tr>
<td>Infilled center of gravity (measured from the face of the unit)</td>
<td>5 7/16 in. (138 mm)</td>
</tr>
<tr>
<td>Block Shear Strength (ASTM D 6916)</td>
<td>Vub[lb/ft] = 545 + N<em>tan(38) ≤ 3826 Vub[kN/m] = 7.95 + N</em>tan(38) ≤ 55.8</td>
</tr>
<tr>
<td>Block Geogrid Shear Strength (Miragrid 3XT) (ASTM D 6916)</td>
<td>Vug[lb/ft] = 445 + N<em>tan(36) ≤ 3496 Vug[kN/m] = 6.49 + N</em>tan(36) ≤ 51.0</td>
</tr>
<tr>
<td>Block Geogrid Connection Strength (Miragrid 3XT) (ASTM D 6638)</td>
<td>Tc[lb/ft] = 1640 + N<em>tan(18) ≤ 3005 Tc[kN/m] = 23.93 + N</em>tan(18) ≤ 43.8</td>
</tr>
</tbody>
</table>

Note: The infilled unit weight shown here is based on an assumed aggregate unit weight of 96.8 lb/ft³ (1550 kg/m³) used to fill the core cavity of the block and the space between adjacent blocks.

**Typical G-Force Wall Cross-Sections**

A. CAP FROM TECHO-BLOC
B. G-FORCE BLOCK FROM TECHO-BLOC
C. WALL INCLINATION (3.9°)
D. EXPOSED HEIGHT
E. HDPE VERTICAL KEY
F. EMBEDMENT DEPTH
G. TOP SOIL
H. LOW PERMEABILITY SOIL
I. 3/8” (20 mm) CLEAN STONE
J. RETAINED SOIL
K. GEOTEXTILE
L. PERFORATED DRAIN
M. LEVELING PAD
N. FOUNDATION SOIL
O. GEOGRID
P. REINFORCED SOIL
Q. GEOGRID LENGTH

**MAXIMUM GRAVITY TOTAL WALL HEIGHT (WITHOUT GEOGRID)**

<table>
<thead>
<tr>
<th>Retained soil type</th>
<th>No surcharge</th>
<th>Slope 1V:3H</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sand/Gravel [φ=34° γ=120 pcf (18.85 kN/m³)]</td>
<td>2’-8” (0.81 m)</td>
<td>2’-8” (0.8 m)</td>
</tr>
<tr>
<td>Sand [φ=30° γ=120 pcf (18.85 kN/m³)]</td>
<td>2’-0” (0.6 m)</td>
<td>2’-0’ (0.6 m)</td>
</tr>
<tr>
<td>Silt/lean clay [φ=26° γ=120 pcf (18.85 kN/m³)]</td>
<td>1’-4” (0.4 m)</td>
<td>1’-4” (0.4 m)</td>
</tr>
</tbody>
</table>

Notes: Total wall height is the vertical distance measured from the top of the footing (aggregate base) to the top of the uppermost course. Heights do not include cap thickness.