

Fortress Carbon-Kevlar Strap 8-inch Wall Spacing Tables



Description: These tables provide the recommended center-to-center spacing of Fortress Carbon-Kevlar Straps bonded to ungrouted, 8-inch nominal hollow or solid masonry and 8-inch concrete basement walls.

Carbon-Kevlar Strap Spacing in Inches					
Wall Height	7 feet				
Unbalanced Fill Height (ft)	Soil Equivalent Fluid Pressure (psf/ft)				
	30	45	60	75	90
5 or less	48	48	48	48	48
6	48	48	48	48	48
7	48	48	48	48	40

Carbon-Kevlar Strap Spacing in Inches					
Wall Height	8 feet				
Unbalanced Fill Height (ft)	Soil Equivalent Fluid Pressure (psf/ft)				
	30	45	60	75	90
5 or less	48	48	48	48	48
6	48	48	48	48	48
7	48	48	48	40	32
8	48	48	40	32	

Carbon-Kevlar Strap Spacing in Inches					
Wall Height	9 feet				
Unbalanced Fill Height (ft)	Soil Equivalent Fluid Pressure (psf/ft)				
	30	45	60	75	90
5 or less	48	48	48	48	48
6	48	48	48	48	48
7	48	48	48	40	32
8	48	48	32	32	
9	48	40			

Carbon-Kevlar Strap Spacing in Inches					
Wall Height	10 feet				
Unbalanced Fill Height (ft)	Soil Equivalent Fluid Pressure (psf/ft)				
	30	45	60	75	90
5 or less	48	48	48	48	48
6	48	48	48	48	40
7	48	48	48	40	32
8	48	48	32		
9	48	40			
10	48	32			

Carbon-Kevlar Strap Spacing in Inches					
Wall Height	11 feet				
Unbalanced Fill Height (ft)	Soil Equivalent Fluid Pressure (psf/ft)				
	30	45	60	75	90
5 or less	48	48	48	48	48
6	48	48	48	48	40
7	48	48	40	32	
8	48	40	32		
9	48	32			
10	40				
11	32				

Carbon-Kevlar Strap Spacing in Inches					
Wall Height	12 feet				
Unbalanced Fill Height (ft)	Soil Equivalent Fluid Pressure (psf/ft)				
	30	45	60	75	90
5 or less	48	48	48	48	48
6	48	48	48	40	40
7	48	48	40	32	
8	48	40	32		
9	48	32			
10	40				
11	32				

Table Qualifications:

1. Spacing dimensions are Strap center-to-center.
2. Walls shall be adequately restrained from out-of-plane movement at both the top and bottom of the wall.
3. For basement applications, the exterior grade shall be flat or sloping down and away from the wall a distance equal or greater to the Unbalanced Fill Height.
4. Variations between Unbalanced Fill Heights and Equivalent Fluid Pressures shown may be interpolated linearly.
5. Walls constructed with concrete masonry units (CMU) shall have a minimum compressive strength of 1,250 psi with Type N mortar or better in good condition.
6. Cast-in-place concrete walls shall have a minimum compressive strength of 2,500 psi.
7. Masonry shall be laid in running bond.
8. Refer to the latest Fortress Installation Guide for other restrictions and use.

For wall heights greater than 12 feet, or soil equivalent fluid pressures greater than 90 psf/ft, contact Fortress Stabilization Systems.

Always install Fortress approved top and bottom wall anchors with each Carbon-Kevlar Strap.

HOW TO USE THE SPACING TABLES

- 1. Wall Height:** Determine the clear height of the wall which is the distance between the top and bottom horizontal restraints. For basement applications, this is usually the distance between the bottom of the main floor joist and the top of the concrete slab. With this dimension select the table with the corresponding wall height. For wall height dimensions other than whole feet, Carbon-Kevlar Strap spacing may be interpolated linearly.
- 2. Unbalanced Backfill Height:** The height of the soil between the bottom of the wall on the interior and the finished grade on the exterior.
- 3. Soil Equivalent Fluid Pressure:** Check the local building code or construction code office for the appropriate Soil Equivalent Fluid Pressure to be used. Where local codes are not available to determine the Equivalent Fluid Pressure of soil, Fortress recommends that a qualified geotechnical or civil engineer familiar with the local area be contacted.
- 4. Carbon-Kevlar Strap Spacing:** Find the recommended Fortress Carbon-Kevlar Strap horizontal center-to-center spacing in inches at the intersection of the Unbalanced Fill Height and Soil Equivalent Fluid Pressure in the appropriate table

Example:

8-inch thick, cast-in-place concrete basement wall has a clear height of 8 feet, 6 inches and an unbalanced backfill height of 8 feet. Find the recommended Fortress Carbon Kevlar Strap spacing.

Solution:

Using the tables for an 8-foot and 9-foot tall walls, find the recommended Carbon-Kevlar Strap spacing for an unbalanced backfill height of 8 feet. The 8-foot table results in a 40-inch spacing and the 9-foot table results in a 32-inch spacing. Linearly interpolate the results as follows:

$$(40'' + 32'')/2 = 36''$$

The Carbon-Kevlar Straps should be installed at 36-inches on center in this example.

If the wall in this example were made of 8-inch nominal concrete masonry units (CMU), decrease the calculated spacing to the nearest number divisible by 8 so that the Carbon-Kevlar Strap is installed between vertical mortar joints. The recommended Carbon-Kevlar Strap spacing in this example for an 8-inch nominal CMU wall would be decreased from 36-inches to the nearest number divisible by 8 to 32-inches.

The information contained herein is included for illustrative purposes only and is, to the best of our knowledge, accurate and reliable. Fortress cannot however under any circumstances make any guarantee of results or assume any obligation or liability in connection with the use of this information. As Fortress has no control over the use to which others may put its product, the products are to be tested to determine if suitable for a specific application and to verify if our information is valid for a particular application. Responsibility remains with the specifier, contractor, installer, user, and owner for the design, application and proper installation of each product. Fortress reserves the right to change the properties of its products without notice. **Prior to each use of any Fortress product, the user must always read, understand, and follow the warnings and instructions on the product's most current Technical Product Data Sheet, product label and Material Safety Data Sheet available at www.FortressStabilization.com.**



(800) 207-6204 <http://www.fortressstabilization.com> 184 W 64th Street, Holland, Michigan 49423 USA