

3.3 PowerBrace™ Wall Bracing System

3.3.1 Summary Description

The PowerBrace™ Wall Bracing System is designed to laterally support bowed, leaning and sheared foundation walls. The system has been used with thousands of successful installations throughout the United States and Canada. The PowerBrace system is a patented system that, when installed properly, will not only stabilize foundation walls against further appreciable lateral movement, but also has the potential to improve the wall's position over time. A steel beam is positioned against the foundation wall and braced at the top and bottom with brackets. The bottom angle bracket is anchored to the concrete floor. An adjustable top bracket is connected to the joists supporting the floor system above (*Figure 3.25* and *Figure 3.26*). Technical specifications and spacing guidelines for the PowerBrace system can be found in *Appendix 3B*.



Figure 3.25 PowerBrace installation with joists perpendicular to wall



Figure 3.26 PowerBrace installation with joists parallel to wall

3.3.2 Installation Steps

The following steps provide a broad overview for typical PowerBrace installations. Intermediate steps, installation equipment and tools used, considerations for obstructions along the wall, and considerations for variable joist details are not addressed. It is critical that adequate blocking be installed along and between floor joists supporting the first floor so loads are adequately and effectively transferred into the floor system without damage.

Step 1

Measure the height of the wall and the depth of the floor joist system at the location where the PowerBrace system will be installed. Cut the PowerBrace beam to the appropriate length (*Figure 3.27*).



Figure 3.27

Step 2

The bottom bracket is positioned at the bottom of the beam and anchored to the concrete floor (*Figure 3.28*). The bottom of the beam is typically set to be in contact with the wall.



Figure 3.28

Step 3

PowerBrace beam is plumbed (side to side) in the plane of the wall. The top of the beam will be leaning toward the interior of the basement. (*Figure 3.29*).



Figure 3.29

Step 4a: Joists Perpendicular to Wall

The telescoping top “bridge” bracket assembly is adjusted to the appropriate length and attached to the floor joists. The top of the beam is then captured by the tightening bolt and bent plate extending from the bracket (*Figure 3.30*).



Figure 3.30

Step 4b: Joists Parallel to Wall

Wood blocking, the steel strap runner, and the top “lever” bracket are attached to the floor joists. The top of the beam is then captured by the tightening bolt and bent plate extending from the bracket (*Figure 3.31*).



Figure 3.31

Step 5

The PowerBrace system can be tightened over time for possible wall improvement (*Figure 3.32*).



Figure 3.32