If applicable, you will need to obtain a sanitary permit, a driveway permit, and a zoning permit as required by your local municipality or county before a building permit can be issued; a copy of these permits will need to be submitted to the building inspector prior to a building permit being issued.

Complete the latest version (R.6/10) of the Wisconsin Uniform Building Permit Application (attached) and return to the building inspector.

Submit an Erosion Control Plan showing the locations of erosion control measures to be taken for sediment control, the location of the tracking pad for driveway access, and the locations of temporary soil storage piles. A copy of the Site Plan with the additional erosion control information may be used for the Erosion Control Plan.

Submit your Energy Calculations to the building inspector; you may use the 2009 IECC to calculate this number. This software can be downloaded for free at www.energycodes.gov. If you are uncertain how to obtain this calculation, please refer to your HVAC contractor.

Plan Submittal (Two Sets)
At least two sets of plans for all one and two-family dwellings need to be submitted to the building inspector for examination and approval at the time the Wisconsin Uniform Building Permit application is submitted. The required building plans must be legible and drawn to scale or dimensioned and must include ALL of the following:

Site Plan must show all of the following:

- The location of the dwelling and other buildings, wells, surface waters and dispersal systems on the site with respect to property lines and surface waters adjacent to the site.
- The areas of land-disturbing construction activity and the location of all erosion and sediment control measures to be employed in order to comply with SPS 321.125.
- The pre-construction ground surface slope and direction of runoff flow within the proposed areas of land disturbance.

Floor Plan must be provided for each floor and must show all of the following:

- The size and location of all rooms, doors, windows, structural features, exit passageways and stairs.
- The use of each room.
- The location of plumbing fixtures, chimneys, heating and cooling appliances and a heating distribution layout.
- The location and construction details of the braced wall lines.

Elevations must show all of the following:

- The exterior appearance of the building, including the type of exterior materials.
- The location, size and configuration of doors, windows, roof, chimneys, exterior grade, footings and foundation walls.

Storm Water Management Plan:

- Must be prepared for a site where one acre or more of land will be disturbed.
- Must delineate and describe the post-construction storm water management practices to be employed to comply with SPS 321.126.

All above Listed Materials MUST be Submitted PRIOR to the Issuance of a Building Permit.
PERMITS WILL NOT BE ACCEPTED WITHOUT ALL REQUIRED INFORMATION.

EXAMPLE SITE PLAN

NOTE ALL MEASUREMENTS IDENTIFIED ON THIS EXAMPLE SHOULD APPEAR ON THE SUBMITTED SITE PLAN. THE SUBMITTED SITE PLAN MUST BE DRAWN TO SCALE.

ALL MEASUREMENTS MUST BE TO SCALE

Please indicate: The location of all existing and proposed buildings/structures. □
The distance from each structure to nearest property line. □
The distance from centerline of adjacent street to property lines. □
The scale used to draw the Site Plan. □

Scale: 1” = 60’
WBA Regulatory Alert: New Wall bracing rules in effect April 1st

Posted: 27 Feb 2014 08:05 AM PST

WBA has been working with the Uniform Dwelling Code (UDC) Council and the Department of Safety and Professional Services (DSPS) over the last six months on an improved wall bracing code in Wisconsin. The new code preserves building safety and design flexibility, but it is easier to use and to understand for both builders and inspectors. It should also save money.

The DSPS is making a great deal of information on this matter available on their website. Click here: http://165.189.64.111/Default.aspx?Page=4a17a637-d158-4e31-bcda-ae4be0744942 for a number of resources including the actual wall bracing rule language, a Wall Bracing Compliance Worksheet and a How To guide for the new provision.

In addition to these tools, WBA has been working with DSPS staff members to come up with answers to frequently asked questions (FAQ) on the wall bracing rule changes. We expect that FAQ to be available before the April 1, 2014 effective date. We will alert our members when it is available.

While the new code is easier and less expensive to comply with than the old rule, WBA recognizes that there will be questions from members now and after the April 1, 2014 effective date. Remember that you have free access to the WBA code hotline (1-888-947-2458). The hotline is ready and will be available for members that have questions on the wall bracing rule. WBA will continue to work with DSPS staff and the engineer that was hired to consult with us on the rule as well and will continue to provide you with the latest and most accurate information available.
Many of the recent changes to Wisconsin’s electrical licensing law were established by legislation passed in March of 2008. In addition to requiring statewide licensing, this legislation provided for a 5-year delayed effective date (April 1, 2013) to give people time to get the credentials required by the 2008 law.

The Important Facts You Need to Know

- **Effective April 1, 2014** - Everyone (with certain exceptions) working as an electrician or in business as an electrical contractor will need to be licensed or registered with the Wisconsin Department of Safety and Professional Services (DSPS).

- **Electricians** - If you have a current DSPS electrical credential (i.e. Master license, Journeyman license, Apprentice or Beginning Electrician registration) you will be in compliance with the new law.

- **Apprentices** - If you are an active apprentice in a registered apprenticeship program, and have a current DSPS electrical credential (i.e. Apprentice or Beginning Electrician registration), you will be in compliance with the new law.

- **Electrical Contractor** - If you have a current Electrical Contractor license and you are or employ a Master Electrician, you will be in compliance with the new law. If you are not a Master Electrician or do not employ a Master electrician, you will need to meet this requirement in order to be an Electrical Contractor.

- **No DSPS Credential** - If you do not have a current DSPS credential, you will need to either obtain a Master Electrician license, Journeyman license, or register as a Beginning Electrician. Beginning Electricians will be “converted” to Registered Electricians in the future.

- **Exemptions** - Many types of “electrical work” are exempt from the licensing requirement.

- **Grandfathering** - There is a very limited grandfathering clause affecting only individuals born before January 1, 1956.

- **Further Details** - Many “details” not addressed in the law will be established by Administrative Rules. The Administrative Rules have not yet been approved.
**Legislative Changes Began in 2008**

Many of the recent changes to Wisconsin’s electrical licensing law were established by legislation passed in March of 2008. In addition to requiring statewide licensing, this legislation provided for a 5-year delayed effective date (April 1, 2013) to give people time to get the credentials required by the 2008 law.

As the effective date approached, some of those regulated by the new law raised concerns and in March of 2013, the legislature pushed back the effective date of the legislation another year (April 1, 2014) in order to consider changes. In February of 2014, the legislature passed new legislation making several changes to the 2008 law but keeping the effective date of April 1, 2014.

Now, under provisions that will become law on **11, 2014**, no person may **work as an electrician**, and no person may **engage in business** as an electrical contractor, unless that person is licensed by, or registered with, the Department of Safety and Professional Services.

**Credentialed Requirements Effective April 1, 2014**

| Electrical Contractor | ✓ No person may engage in the business of installing, repairing, or maintaining electrical wiring unless the person is licensed as an electrical contractor by the department of safety and professional services. |
| ✓ No person who is not a master electrician may install, repair, or maintain electrical wiring unless a master electrician is at all times responsible for the persons work. |

| Master Electricians | At least one of the following: |
| ✓ A bachelor’s degree or master’s degree in electrical engineering, followed by passage of an examination. |
| ✓ 12 months of experience as a journeyman electrician, followed by passage of an examination. |
| ✓ 60 months, with at least 10,000 hours experience, followed by passage of an examination. |

| Journeyman Electricians | At least one of the following: |
| ✓ Completion of a construction electrician apprenticeship program lasting at least 3 years and that is approved by the U.S. department of labor or the department of workforce development, followed by passage of an examination. |
| ✓ 48 months, with at least 8,000 hours experience, followed by passage of an examination (completion of a 2-year approved program shall be equivalent to 12 months and 2,000 hours of experience). |

| Apprentice Electricians | ✓ The department of safety and professional services must promulgate rules for the registration of electrical apprentices. |

| Registered Electricians (formerly Beginning Electricians) | ✓ The department of safety and professional services must promulgate rules that establish procedures for the enrollment of registered electricians. |
| ✓ Registered electricians must be supervised by licensed journeyman or master electricians. |
| ✓ The department must promulgate rules to differentiate the scope of installation, repair, or maintenance of electrical wiring that may be performed by registered electricians. |

| Grandfathering | ✓ Persons born on or before January 1, 1956 and who have at least 15 years of experience in installing, repairing, or maintaining electrical wiring will be regulated under separate rules to be developed. |
| ✓ It is generally presumed that these individuals will not be required to pass an examination and may be limited by other restrictions. |
Exemptions to Wisconsin's Electrical Licensing Law

1. A residential property owner who installs, repairs, or maintains electrical wiring on premises that the property owner owns and occupies as a residence, unless a license or registration issued by the department is required by local ordinance.

2. A person engaged in maintaining or repairing electrical wiring within an existing facility or on premises owned or leased by the person or by an entity for which the person is an agent or employee.

3. A person engaged in installing, repairing, or maintaining electrical wiring, apparatus, or equipment for elevators and escalators.

4. A person engaged in installing, repairing, or maintaining equipment or systems that operate at 100 volts or less.

5. A person engaged in installing, repairing, or maintaining an electronic system designed to monitor a premise for the presence of an emergency, to issue an alarm for an emergency, or to detect and summon aid for an emergency.

6. A person engaged in installing, repairing, or maintaining electrical wiring of facilities that support telecommunication services that is provided by a telecommunications provider.

7. A person engaged in installing, repairing, or maintaining manufactured equipment or utilization equipment, including ballasts, electric signs and luminaries or any other manufactured system that is designed to provide a function that is not primarily electrical in nature if the installation, repair, or maintenance does not involve the modification or installation of branch circuit conductors that are external to the manufactured or utilization equipment or other manufactured system.

8. A person engaged in installing electrical wiring for components of a manufactured home or a manufactured building, while the manufactured home or the manufactured building is at or in the facility at which it is being manufactured.

9. A person employed by an electricity provider, or a subcontractor of an electricity provider, who installs, repairs, or maintains electrical wiring for equipment that is installed in the normal course of providing utility services by the electricity provider.

10. A person engaged in installing, repairing, or maintaining electrical wiring that provides lighting or signals for public thoroughfares and for public airports.

11. A person engaged in installing, repairing, or maintaining electric lines on the utility side of substations and other distribution facilities owned or operated by customers or members of electricity providers.

12. A person employed by an electricity provider, or a subcontractor of an electricity provider, who installs, repairs, or maintains primary voltage electric facilities that are owned by the electricity provider’s customers or members and that operate at greater than 600 volts.

13. A person employed by an electricity provider, or a subcontractor of an electricity provider, who restores service during an emergency.

14. A person who installs a replacement for an existing switch or outlet, if the replacement switch or outlet has a rating of not more than 20 amperes.

15. A person engaged in installing electrical wiring within an existing industrial facility or existing manufacturing facility owned or leased by the person or by an entity for which the person is an agent or employee.

16. A person who installs electrical wiring without receiving payment in a new one or two family dwelling that is being constructed by a qualified nonprofit corporation.

Municipal Authority

Municipal licenses and registrations issued to electricians, electrical contractors, and electrical inspectors are no longer valid (or required) as of March 31, 2014. Municipalities may no longer impose any registration, licensing, or certification requirements on electrical contractors, electricians, or electrical inspectors. And no person may work as an electrician, and no person may engage in business as an electrical contractor, unless that person is licensed by, or registered with, the Department of Safety and Professional Services.

Reciprocity

Many of the most recent changes were intended to facilitate reciprocal agreements with neighboring states. The 2014 legislation allows the department to enter into reciprocal agreements with other states provided the credentials are comparable, the individual submits an application, and pays the fee. It is presumed the department will begin to negotiate such agreements.
ELECTRICAL LICENSING GUIDE
Wisconsin’s New Law

Topics to be Further Defined in Administrative Rules

Inspections
- Current law requires the department to establish rules for the inspection of electrical wiring.
- This legislation prohibits the department from requiring inspection of electrical wiring in an existing industrial facility unless the project required plan review.
- Under the bill, all inspections shall be performed by inspectors certified by the department.
- Promulgate rules that establish criteria for the certification of electrical inspectors.

Registered electricians and electrical apprentices
- Promulgate rules that establish criteria for the enrollment of registered electrician and the registration of electrical apprentices.
- Promulgate rules that establish requirements for the supervision of registered electricians.

Registration and licensing procedure
- Promulgate rules that establish the procedures for the licensing of journeyman electricians and master electricians.

Suspension or revocation
- Establish criteria and a process for the suspension and revocation of registrations and licenses.

Types of electricians
- The department may promulgate rules that recognize and regulate different types and subtypes of electricians.

Scope of work
- Promulgate rules to differentiate the scope of installation, repair, or maintenance that may be performed by electrical contractors, registered electricians, journeyman electricians, master electricians, and any additional type of electrician created in rules.

Continuing Education
- Continuing Education requirements for all types of electricians will be defined in Administrative Rule.

Additional Resources
- For Master or Journeyman electrician exam locations check the Department of Safety and Professional Services website (www.dspw.wi.gov).
- If you are unable to schedule an exam before April 1, 2014, register as a “Beginning Electrician” on the DSPS website (www.dspw.wi.gov).
- ABC of Wisconsin has Electrical Exam Preparation training (Master and Journeyman) scheduled starting on April 2nd and concluding on May 21st. Visit www.abowi.org, and click on the “events” tab for more details. For more information contact Elizabeth Reedy at 608-244-6050 or ereddy@abowi.org.
- For questions about this document contact: John Mielke at 608-244-5883 or jmielke@abowi.org.

This guide is intended to be a summary of the major provisions of Wisconsin’s electrical licensing laws. For actual language refer to Wisconsin State Statute Ch. 101 and Wisconsin Administrative Rule SPS 305.40.

See “Exemptions to Wisconsin’s Electrical Licensing Laws”
The actual length of approved apprenticeship programs is determined by either the Wisconsin Bureau of Apprenticeship Standard or the U.S. Department of Labor.
Websites and printed material may not yet be updated to reflect changes in law and Administrative Rule resulting in confusing or seemingly contradictory information.

Associated Builders and Contractors of Wisconsin, Inc.
5310 Wall Street, Madison, WI 53718
Phone: 608-244-5883  www.abowi.org
Erosion Control for Home Builders

By controlling erosion, home builders help keep our lakes and streams clean.

Eroding construction sites are a leading cause of water quality problems in Wisconsin. For every acre under construction, about a dump truck and a half of soil washes into a nearby lake or stream unless the builder uses erosion controls. Problems caused by this sediment include:

Taxes
Cleaning up sediment in streets, sewers and ditches adds extra costs to local government budgets.

Lower property values
Neighboring property values are damaged when a lake or stream fills with sediment. Shallow areas encourage weed growth and create boating hazards.

Poor fishing
Muddy water drives away fish like northern pike that rely on sight to feed. As it settles, sediment smothers gravel beds where fish like smallmouth bass find food and lay their eggs. Soil particles in suspension can act like a sand blaster during a storm and damage fish gill.

Nuisance growth of weeds and algae
Sediment carries fertilizers that fuel algae and weed growth.

Dredging
The expense of dredging sediment from lakes, harbors and navigation channels is paid for by taxpayers.

Controlling Erosion is Easy

Erosion control is important even for home sites of an acre or less. The materials needed are easy to find and relatively inexpensive – straw bales or silt fence, stakes, gravel, plastic tubes, and grass seed. Putting these materials to use is a straightforward process. Only a few controls are needed on most sites:

- Preserving existing trees and grass where possible to prevent erosion;
- Revegetating the site as soon as possible;
- Silt fence or straw bales to trap sediment on the downslope sides of the lot;
- Placing soil piles away from any roads or waterways;
- Diversions on upslope side and around stockpiles;
- Stone/rock access drive used by all vehicles to limit tracking of mud onto streets;
- Cleanup of sediment carried off-site by vehicles or storms; and
- Downspout extenders to prevent erosion from roof runoff.
EROSION CONTROL PRACTICES FOR HOME SITES

A poorly installed silt fence will not prevent soil erosion. Fabric must be buried in a trench and sections must overlap (see diagram on back of this fact sheet).

Straw Bale or Silt Fence
- Install within 24 hours of land disturbance.
- Install on downslope sides of site parallel to contour of the land.
- Extended ends upslope enough to allow water to pond behind fence.
- Bury eight inches of fabric in trench (see back page).
- Stake (two stakes per bale).
- Leave no gaps. Stuff straw between bales, overlap sections of silt fence, or twist ends of silt fence together.
- Inspect and repair once a week and after every 1/2 inch rain. Remove sediment if deposits reach half the fence height. Replace bales after three months.
- Maintain until a lawn is established.

Soil Piles
- Cover with plastic and locate away from any downslope street, driveway, stream, lake, wetland, ditch or drainageway.
- Temporary seed such as annual rye or winter wheat is recommended for topsoil piles.

Access Drive
- Install an access drive using two-to-three-inch aggregate prior to placing the first floor decking on foundation.
- Lay stone six inches deep and at least seven feet wide from the foundation to the street (or 50 feet if less).
- Use to prevent tracking mud onto the road by all vehicles.
- Maintain throughout construction.
- In clay soils, use of geotextile under the stone is recommended.

Sediment Cleanup
- By the end of each work day, sweep or scrape up soil tracked onto the road.
- By the end of the next work day after a storm, clean up soil washed off-site.

Sewer Inlet Protection
- Protect on-site storm sewer inlets with straw bales, silt fences or equivalent measures.
- Inspect, repair and remove sediment deposits after every storm.

Downspout Extenders
- Not required, but highly recommended.
- Install as soon as gutters and downspouts are completed to prevent erosion from roof runoff.
- Use plastic drainage pipe to route water to a grassed or paved area. Once a lawn is established, direct runoff to the lawn or other pervious areas.
- Maintain until a lawn is established.

Preserving Existing Vegetation
- Wherever possible, preserve existing trees, shrubs, and other vegetation.
- To prevent root damage, do not grade, place soil piles, or park vehicles near trees marked for preservation.
- Place plastic mesh or snow fence barriers around trees to protect the root area below their branches.

Revegetation
- Seed, sod or mulch bare soil as soon as possible. Vegetation is the most effective way to control erosion.

Seeding and Mulching
- Spread four to six inches of topsoil.
- Fertilize and lime if needed according to soil test (or apply 10 lb./1000 sq. ft. of 10-10-10 fertilizer).
- Seed with an appropriate mix for the site (see table).
- Rake lightly to cover seed with 1/4" of soil. Roll lightly.
- Mulch with straw (70-90 lb. per one bale per 1000 sq. ft.)
- Anchor mulch by punching into the soil, watering, or by using netting or other measures on steep slopes.
- Water gently every day or two to keep soil moist. Less watering is needed once grass is two inches tall.
Standard Erosion Control Plan
for 1- & 2-Family Dwelling Construction Sites

According to SPS 320 & 321 of the Wisconsin Uniform Dwelling Code, soil erosion control information needs to be included on the plot plan which is submitted and approved prior to the issuance of building permits for 1- & 2-family dwelling units in those jurisdictions where the soil erosion control provisions of the Uniform Dwelling Code are enforced. This Standard Erosion Control Plan is provided to assist in meeting this requirement.

Instructions:
1. Complete this plan by filling in requested information, completing the site diagram and marking appropriate boxes on the inside of this form.
2. In completing the site diagram, give consideration to potential erosion that may occur before, during, and after grading. Water runoff patterns can change significantly as a site is reshaped.
3. Submit this plan at the time of building permit application.

PROJECT LOCATION ________________________________

BUILDER __________________ OWNER __________________

WORKSHEET COMPLETED BY __________________ DATE _________________

SITE DIAGRAM Scale: 1 inch = ___ feet

Please indicate north by completing the arrow.

EROSION CONTROL PLAN LEGEND

PROPERTY LINE
EXISTING DRAINAGE
TEMPORARY DIVERSION
FINISHED DRAINAGE
LIMTS OF GRADING
SILT FENNE
STRAW BALES
GRAVEL
VEGETATION SPECIFICATION
TREE PRESERVATION
STOCKPILED SOIL
Sodding
- Spread four to six inches of topsoil.
- Fertilize and lime if needed according to soil test (or apply 10 lb./1000 sq. ft. of 10-10-10 fertilizer).
- Lightly water the soil.
- Lay sod. Tamp or roll lightly.
- On slopes, lay sod starting at the bottom and work toward the top. Laying in a brickwork pattern. Peg each piece down in several places.
- Initial watering should wet soil six inches deep (or until water stands one inch deep in a straight-sided container). Then water lightly every day or two to keep soil moist but not saturated for two weeks.
- Generally, the best times to sod and seed are early fall (Aug. 15-Sept. 15) or spring (May). If construction is completed after September 15, final seeding should be delayed. Sod may be laid until November 1. Temporary seed (such as rye or winter wheat) may be planted until October 15.

Mulch or matting may be applied after October 15, if weather permits. Straw bale or silt fences must be maintained until final seeding or sodding is completed in spring (by June 1).

Concrete Wash Water
- Dispose of concrete wash water in an area of soil away from surface waters where soil can act as a filter or evaporate the water. Dispose of remaining cement. Be aware that this water can kill vegetation.

De-Watering
- Dispose of de-watering water in a pervious area. Prevent the discharge of sediment from de-watering operations into storm sewers and surface waters.

Material Storage
- Manage chemicals, materials and other compounds to avoid contamination of runoff.

Typical Lawn Seed Mixtures

<table>
<thead>
<tr>
<th>Grass</th>
<th>Sunny Site</th>
<th>Shady Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kentucky bluegrass</td>
<td>65%</td>
<td>15%</td>
</tr>
<tr>
<td>Fine fescue</td>
<td>20%</td>
<td>70%</td>
</tr>
<tr>
<td>Perennial ryegrass</td>
<td>15%</td>
<td>15%</td>
</tr>
</tbody>
</table>

Seeding rate (lb./1000 sq. ft.)

EROSION CONTROL PLAN CHECKLIST

Check (✓) appropriate boxes below, and complete the site diagram with necessary information.

Site Characteristics

方 North arrow, scale, and site boundary. Indicate and name adjacent streets or roadways.
方 Location of existing drainage, streams, rivers, lakes, wetlands or wells.
方 Location of storm sewer inlets.
方 Location of existing and proposed buildings and paved areas.
方 The disturbed area on the lot.
方 Approximate gradient and direction of slopes before grading operations.
方 Approximate gradient and direction of slopes after grading operations.
方 Overland runoff (sheet flow) coming onto the site from adjacent areas.

Erosion Control Practices

方 Location of temporary soil storage piles.
   Note: Soil storage piles should be placed behind a sediment fence, a 10 foot wide vegetative strip, or should be covered with a tarp or more than 25 feet from any downslope road or drainage way.

方 Location of access drive(s).
   Note: Access drive should have 2 to 3 inch aggregate stone laid at least 7 feet wide and 6 inches thick. Drives should extend from the roadway 50 feet or to the house foundation (whichever is less).

方 Location of sediment controls (filter fabric fence, straw bale fence or 10-foot-wide vegetative strip) that will prevent eroded soil from leaving the site.

方 Location of sediment barriers around on-site storm sewer inlets.

方 Location of diversions.
   Note: Although not specifically required by code, it is recommended that concentrated flow (drainage ways) be diverted (re-directed) around disturbed areas. Overland runoff (sheet flow) from adjacent areas greater than 10,000 sq. ft. should also be diverted around disturbed areas.

方 Location of practices that will be applied to control erosion on steep slopes (greater than 12% grade).
   Note: Such practices include maintaining existing vegetation, placement of additional sediment fences, diversions, and re-vegetation by sodding or seeding with use of erosion control mats.

方 Location of practices that will control erosion on areas of concentrated runoff flow.
   Note: Unstabilized drainage ways, ditches, diversions, and inlets should be protected from erosion through use of such practices as in-channel fabric or straw bale barriers, erosion control mats, staked sod, and rock rip-rap. When used, a given in-channel barrier should not receive drainage from more than two acres of unpaved area, or one acre of paved area. In-channel practices should not be installed in perennial streams (streams with year round flow).

方 Location of other planned practices not already noted.
### TABLE 322.31–1
**INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT**

<table>
<thead>
<tr>
<th>Zone</th>
<th>Fenestration U-Factor</th>
<th>Skylight U-Factor</th>
<th>Ceiling R-Value</th>
<th>Wood Frame Wall R-Value</th>
<th>Mass Wall R-Value</th>
<th>Floor R-Value</th>
<th>Basement or Crawl Space Wall R-Value</th>
<th>Heated Slab R-Value</th>
<th>Unheated Slab R-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.35</td>
<td>0.60</td>
<td>49(^a)</td>
<td>19(^b) or 13+5(^d)</td>
<td>15</td>
<td>30(^b)</td>
<td>10/15</td>
<td>10/15</td>
<td>10</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>0.60</td>
<td>49(^a)</td>
<td>21(^c)</td>
<td>19</td>
<td>30(^b)</td>
<td>10/15</td>
<td>10/15</td>
<td>10</td>
</tr>
</tbody>
</table>

\(^a\) R-values are minimums. U-factors are maximums.

\(^b\) The first R-value applies to continuous insulation. The second R-value applies to framing cavity insulation. Either insulation meets the requirement.

\(^c\) The first R-value applies under the entire slab, regardless of depth below grade. The second R-value applies to the slab edge where the bottom of the slab is less than 12 inches below adjacent grade. Slab edge insulation shall extend downward from the top of the slab for a minimum of 48 inches or downward to at least the bottom of the slab and then horizontally to the interior or exterior for a minimum total distance of 48 inches. Also, see s. SPS 321.16 for protection against frost for slabs with supports less than 4 feet below grade.

\(^d\) The R-value applies to any slab, the bottom of which is less than 12 inches below adjacent grade. Also, see s. SPS 321.16 for protection against frost for slabs with supports less than 4 feet below grade.

\(^e\) See s. SPS 322.32 (1) for application and permitted reduced R-value.

\(^f\) R-19 and R-21 may be permitted in a 2X6 cavity.

\(^g\) “13+5” means R-13 cavity insulation plus R-5 insulated sheathing. If structural sheathing covers 25% or less of the exterior, insulating sheathing is not required where structural sheathing is used. If structural sheathing covers more than 25% of the exterior, structural sheathing shall be covered with insulated sheathing of at least R-2.

\(^h\) Or insulation sufficient to fill the framing cavity with a minimum of R-19.

### TABLE 322.31–2
**EQUIVALENT U-FACTORs**

<table>
<thead>
<tr>
<th>Zone</th>
<th>Fenestration U-Factor</th>
<th>Skylight U-Factor</th>
<th>Ceiling U-Factor</th>
<th>Wood Frame Wall U-Factor</th>
<th>Mass Wall U-Factor</th>
<th>Floor U-Factor</th>
<th>Basement Wall U-Factor</th>
<th>Crawl Space U-Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.35</td>
<td>0.60</td>
<td>0.026</td>
<td>0.060</td>
<td>0.060</td>
<td>0.033</td>
<td>0.085</td>
<td>0.065</td>
</tr>
<tr>
<td>2</td>
<td>0.35</td>
<td>0.60</td>
<td>0.026</td>
<td>0.057</td>
<td>0.057</td>
<td>0.033</td>
<td>0.085</td>
<td>0.065</td>
</tr>
</tbody>
</table>

### TABLE 322.31–3
**WARM AIR FURNACES AND BOILERS, MINIMUM EFFICIENCY REQUIREMENTS**

<table>
<thead>
<tr>
<th>Equipment Type</th>
<th>Minimum Efficiency</th>
<th>Test Procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural gas and propane furnace</td>
<td>90% AFUE</td>
<td>DOE 10 CFR Part 430 or ANSI Z21.47</td>
</tr>
<tr>
<td>Natural gas and propane hot water boilers</td>
<td>90% AFUE</td>
<td>DOE 10 CFR Part 430</td>
</tr>
<tr>
<td>Oil–fired furnaces</td>
<td>83% AFUE</td>
<td>DOE 10 CFR Part 430 or UL 727</td>
</tr>
<tr>
<td>Oil–fired hot water boilers</td>
<td>84% AFUE</td>
<td>DOE 10 CFR Part 430</td>
</tr>
</tbody>
</table>
WALL BRACING

RULE TEXT
TEXT OF RULE

SECTION 1. SPS 320.09 (5) (b) 2. d. is amended to read:

**SPS 320.09 (5) (b) 2. d.** The location and construction details of the braced wall lines wall bracing on each building side and floor level.

SECTION 2. SPS 321.02 (1) (c) is amended to read:

**SPS 321.02 (1) (c) Wind loads.** Dwellings shall be designed and constructed to withstand either a horizontal and uplift pressure of 20 pounds per square foot acting over the surface area or the wind loads determined in accordance with ASCE 7-05, *Minimum Design Loads for Buildings and Other Structures*.

SECTION 3. SPS 321.02 (1) (c) (Note) is created to read:

**SPS 321.02 (1) (c) Note:** ASCE 7-05 allows for substantial reduction from 20 psf as applied to the surface area.

SECTION 4. SPS Table 321.25–A is amended to read:

<table>
<thead>
<tr>
<th>Table 321.25–A</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIZE, HEIGHT AND SPACING OF WOOD STUDS*&lt;sup&gt;a&lt;/sup&gt;&lt;sup&gt;,c&lt;/sup&gt;</td>
</tr>
<tr>
<td>(Partial Table)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Nominal Stud Size (inches)</th>
<th>Bearing and Exterior Nonbearing Walls</th>
<th>Interior Nonbearing Walls</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Maximum Laterally Unsupported Stud Height&lt;sup&gt;1&lt;/sup&gt; (feet)</td>
<td>Maximum Spacing When Supporting One Floor, Roof and Ceiling (inches)</td>
</tr>
<tr>
<td>2x6</td>
<td>4912&lt;sup&gt;d&lt;/sup&gt;</td>
<td>24</td>
</tr>
</tbody>
</table>

*All spacing dimensions are to the center of the studs.

<sup>a</sup>Unless supported by structural analysis, use of stud heights that range from over 10 feet to 12 feet is limited to where all of the following conditions are met: snow loads do not exceed 25 psf; tributary dimensions for floors and roofs do not exceed 6 feet; spans for floors and roofs do not exceed 12 feet; eave projections do not exceed 2 feet; the bending modulus of elasticity is at least 1,600,000 lb per square inch; the allowable fiber stress in bending for the wood is not less than 1310 psi as determined by multiplying the AF&PA NDS tabular base design value by the repetitive use factor; and by the size factor for all species except southern pine; utility, standard, stud, and No. 3 grade lumber of any species is not used; and the allowable deflection does not exceed whichever of the following are applicable:

- **Interior walls and partitions** – span height/180.
- **Exterior walls with plaster or stucco finish** – span height/360.
- **Exterior walls with other brittle finishes** – span height/240.
- **Exterior walls with flexible finishes** – span height/120.
- **Exterior walls with interior gypsum wallboard finish** – span height/180.

Any manufacturer-specified limits for any included windows or doors.

2
SECTION 5. SPS 321.25 (7) (d) and (8) (a) (Note) are amended to read:

**SPS 321.25 (7) (d)** Cripple walls with a stud height of 14 inches or greater shall be braced in accordance with sub. (8) or (9).

(8) (a) Note: Acceptable engineering wall bracing practices include any of the following:
2. Design in accordance with the engineering basis of the 2012 IRC bracing provisions, such as described in Crandell, J. and Martin, Z., “The Story Behind the 2009 IRC Wall Bracing Provisions (Part 2: New Wind Bracing Requirements).” Wood Design Focus, Forest Products Society, Peachtree Corners, GA, Spring 2009.
3. Installation instructions from the manufacturer of the bracing product that are compliant with section SPS 321.02.

SECTION 6. SPS 321.25 (8) (b) and (c), Tables 321.25–G to 321.25–J, and Figures 321.25–A to 321.25–C are repealed and recreated to read:

**SPS 321.25 (8) (b) Bracing materials and methods.** Wall bracing shall consist of the materials and methods listed in Table 321.25–G or approved alternatives capable of providing the required wind load resistance as determined in accordance with s. SPS 321.02 (1) (c).
### Table 321.25-G
BRACING METHODS\(^a, f\)

<table>
<thead>
<tr>
<th>Material</th>
<th>Minimum Brace Material Thickness or Size</th>
<th>Maximum Nominal Wall Height(^b)</th>
<th>Minimum Braced Wall Panel Width or Brace Angle</th>
<th>Connection Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Minimum Fasteners</td>
</tr>
<tr>
<td>Intermittent Bracing Methods</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LIB(^b)</td>
<td>1x4 wood brace (or approved metal brace installed per manufacturer instructions)</td>
<td>10’</td>
<td>45° angle and maximum 16” o.c. stud spacing(^c)</td>
<td>2-8d common nails or 3-8d box nails (2 3/8” long x 0.113” diameter)</td>
</tr>
<tr>
<td>DWB Diagonal wood boards</td>
<td>¾” (1” nominal) for maximum 24” o.c. stud spacing</td>
<td>10’</td>
<td>48”</td>
<td>2-8d box nails (2 3/8” long x 0.113” diameter) or 2 - 1 3/4” long 16-gage staples</td>
</tr>
<tr>
<td>WSP Wood structural panel</td>
<td>3/8” for maximum 16” o.c. stud spacing; 7/16” for maximum 24” o.c. stud spacing</td>
<td>10’</td>
<td>48”</td>
<td>6d common nail or 8d box nail (2 3/8” long x 0.113” diameter); or 7/16”; or 1/2-crown 16-gage staples, 1 1/4” long</td>
</tr>
<tr>
<td>SFB Structural fiberboard sheathing</td>
<td>½” for maximum 16” o.c. stud spacing</td>
<td>10’</td>
<td>48”</td>
<td>1 1/2” long x 0.120” diameter galvanized roofing nails or 1”-crown 16-gage staples, 1 1/4” long</td>
</tr>
<tr>
<td>GB Gypsum board (installed on both sides of wall)</td>
<td>½” for maximum 24” o.c. stud spacing</td>
<td>10’</td>
<td>96”</td>
<td>5d cooler nails, or #6 screws</td>
</tr>
</tbody>
</table>

### Continuous Sheathed Bracing Methods

| CS-WSP\(^4\) Continuous sheathed WSP | 3/8” for maximum 16” o.c. stud spacing; 7/16” for maximum 24” o.c. stud spacing | 12’ | Refer to Table 321.25-H | Same as WSP | Same as WSP |

| CS-SFB\(^4\) Continuous sheathed SFB | ½” for maximum 16” o.c. stud spacing | Same as SFB | Same as SFB |

### Narrow Panel Bracing

| PF Portal frame | 7/16” | 12’ | Refer to Figure 321.25-A | Refer to Figure 321.25-A | Refer to Figure 321.25-A |

---

\(^a\)The interior side of all exterior walls shall be sheathed with minimum ½-inch gypsum wallboard unless otherwise permitted to be excluded by this subsection. All edges of panel-type wall bracing, except horizontal joints in GB bracing, shall be attached to framing or blocking.

\(^b\)The actual measured wall height shall include stud height and thickness of top and bottom plates. The actual wall height shall be permitted to exceed the listed nominal values by not more than 4½ inches. Tabulated bracing amounts in s. SPS 321.25 (8) (c) are based on a 10-foot nominal wall height for all bracing methods and shall be permitted to be adjusted to other nominal wall heights not exceeding 12 feet in accordance with footnotes to Table 321.25-I or Table 321.25-J.
LIB is not permitted for walls supporting a roof and two floors. Two LIB braces installed at a 60° angle from horizontal shall be permitted to be substituted for each 45° angle LIB brace.

Bracing with CS-WSP and CS-SFB shall have sheathing installed on all sheathable surfaces above, below, and between wall openings.

Sheath shall be attached to the top and bottom plates and any intermediate studs, in one continuous length.

Each braced panel may contain no more than one hole, having a maximum dimension of no more than ten percent of the least dimension of the panel, and confined to the middle three-fourths of the panel.

<table>
<thead>
<tr>
<th>Maximum Opening Height Adjacent to Braced Wall Panel</th>
<th>Minimum Width of Full-Height Braced Wall Panel (inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5' - 4&quot;</td>
<td>8' Tall Wall  9' Tall Wall  10' Tall Wall  12' Tall Wall</td>
</tr>
<tr>
<td>5' - 8&quot;</td>
<td>24  27  30  36</td>
</tr>
<tr>
<td>8'</td>
<td>32  30  30  36</td>
</tr>
<tr>
<td>9'</td>
<td>48  41  38  36</td>
</tr>
<tr>
<td>10'</td>
<td>-    54  46  41</td>
</tr>
<tr>
<td>12'</td>
<td>-    -    60  48</td>
</tr>
</tbody>
</table>

Sheathing shall extend from the top of the top plate to the bottom of the bottom plate and may be multiple sheets. All joints shall be blocked.

Interpolation is permitted.
Note: Steel headers are permitted if designed by structural analysis.

Note: As shown in the above cross-section, ⅛-inch gypsum wallboard is not required on the interior side of the wall.

(c) Bracing amount. Bracing methods and materials complying with Table 321.25–G shall be applied to walls in accordance with all of the following requirements:

1. For the purpose of determining bracing amounts, the outermost extents of the building plan at each floor level shall be circumscribed with a rectangle to define the overall length of each building side as shown in Figure 321.25–B.

2. In no case may the amount of bracing be less than two braced wall panels on walls parallel to each rectangle side for each floor level of the building.
3. Where used, the number of intermittent brace panels applied to walls parallel to each rectangle side shall comply with Table 321.25–I.

4. Where used, the total length of continuous sheathed brace panels applied to walls parallel to each building side shall comply with Table 321.25–J.

5. The location of brace panels applied to walls parallel to each building side shall comply with Figure 321.25–C.

6. Balloon-frame walls may be no longer than 21 feet and shall have a maximum height of two floors unless constructed in accordance with an approved design. Wall framing shall be continuous from the lowest floor to the wall top plate at the roof. All edges of sheathing shall be supported on and fastened to blocking or framing. Braced wall panels may not be required on the balloon-frame wall portion provided the bracing amount and brace spacing requirement are satisfied for the building side. Where brace panels are located on the balloon-frame wall portion, they shall have a height-to-width ratio of not more than 2.5:1.

7. For a gable end wall, if the brace-panel height does not exceed 12 feet at the highest portion and if the 12½-foot and 21-foot spacing requirements in Figure 321.25–C are met, the wall is adequately braced. Where a brace panel exceeds 12 feet in height, it shall have a height-to-width ratio of not more than 2.5:1, and comply with Figure 21.25–C.

---

**Figure 321.25–B**

DEFINING BUILDING SIDES AND LENGTHS WITH ONE OR MORE CIRCUMSCRIBED RECTANGLES\textsuperscript{a,b,c}

---

\textsuperscript{a,b,c}

---

(1) Basic floor plan

---

---
(2) Angled-building-side plan

(3) Angled floor plan

Each floor plan level shall be circumscribed with one or more rectangles around the entire floor plan at the floor level under consideration as shown. When multiple rectangles are used, each side shall be braced as though it were a separate building and the bracing amount added together along the common wall where adjacent rectangles overlap or abut.

Rectangles shall surround all enclosed plan offsets and projections. Chimneys, partial height projections, and open structures, such as garages and decks, shall be excluded from the rectangle.

Each rectangle shall have a maximum rectangle length-to-width ratio of 3:1.

Projected contributing lengths of angled braced wall panels shall be assigned to the closest rectangle sides, as shown for the angled corner in the angled-building-side-plan shown above.

Braced wall panels located on a common wall where angled rectangles intersect, as shown in Figure 321.25-B(3), shall have their contributing length applied towards the required length of bracing for the parallel rectangle side and its projected contributing lengths towards the adjacent angled rectangle sides. Where the common side of rectangle 2 as shown in Figure 321.25-B(3) has no physical wall, the portion shall be designed in accordance with s. SPS 321.25 (8) (a).

Table 321.25-I
REQUIRED NUMBER OF INTERMITTENT BRACED WALL PANELS ON WALLS PARALLEL TO EACH RECTANGLE SIDE AT EACH FLOOR LEVEL

<table>
<thead>
<tr>
<th>Wall Supporting:</th>
<th>Required Number of Brace Panels on a Building Side</th>
<th>Length of Perpendicular Side (feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>≤25</td>
</tr>
<tr>
<td>Roof and ceiling only</td>
<td></td>
<td>1(^1)</td>
</tr>
<tr>
<td>One floor, roof and ceiling</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Two floors, roof and ceiling</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

\(^1\) Interpolation is permitted. Extrapolation to buildings larger than addressed in this table is prohibited.
This table applies to wind exposure category B. For wind exposure category C or D, multiply the number of braced wall panels required by 1.3 or 1.6, respectively.

Wind exposure category B is comprised of urban and suburban areas, wooded areas, or other terrain with numerous closely spaced obstructions having the size of single-family dwellings or larger. Exposure B shall be assumed unless the site meets the definition of another type exposure.

Wind exposure category C is comprised of flat, open country and grasslands with scattered obstructions, including surface undulations or other irregularities, having heights generally less than 30 feet extending more than 1,500 feet from the building site in any quadrant. This exposure also applies to any building located within Exposure B type terrain where the building is directly adjacent to open areas of Exposure C type terrain in any quadrant for a distance of more than 500 feet.

Wind exposure category D is comprised of flat, unobstructed areas exposed to wind flowing over open water for a distance of at least 1 mile. This exposure applies only to those buildings and other structures exposed to the wind coming from over the water. Exposure D extends inland from the shoreline a distance of 1,500 feet or 10 times the height of the building or structure, whichever is greater.

Tabulated values are based on a nominal wall height of 10 feet. For nominal wall heights other than 10 feet and not more than 12 feet, multiply the required number of brace panels by the following factors: 0.9 for 8 feet, 0.95 for 9 feet, 1.15 for 11 feet, or 1.3 for 12 feet.

Tabulated values are based on a roof with a top-of-wall-to-ridge height of 10 feet. For top-of-wall-to-ridge heights other than 10 feet, multiply the required number of brace panels by the following factors for each floor level support condition:

- Roof only – 0.7 for 5 feet, 1.3 for 15 feet, or 1.6 for 20 feet
- Roof + 1 Floor – 0.85 for 5 feet, 1.15 for 15 feet, or 1.3 for 20 feet
- Roof + 2 Floors – 0.9 for 5 feet or 1.1 for 15 feet

Where minimum ¼-inch gusset wallboard is not included on the interior side of the wall, multiply the number of braced wall panels by 1.7 for LIF bracing or 1.4 for all other bracing methods, except this increase is not required for the portal frame method.

Adjustments in footnotes b to e apply cumulatively. Fractions of panels shall be rounded to the nearest one-half braced wall panel.

Perpendicular sides to the front and rear sides are the left and right sides. Perpendicular sides to the left and right sides are the front and rear sides. See Figure 321.25-B.

The following braced wall panel conditions shall be permitted to be counted as one-half a braced wall panel toward meeting the required number of panels: (1) one 60 degree LIF; (2) one 48" GB or one 96" GB with gusset wallboard on one side; (3) one 36" WSP or SFB braced wall panel for wall heights not more than 9 feet; (4) a 48" WSP or SFB braced wall panel where there is no more than one unblocked horizontal joint; or (5) one PF brace panel complying with Figure 321.25-A.

This value of less than 2 serves only as the beginning value for calculation purposes. The resulting value shall be 2 or greater, to be consistent with subd. 2.
<table>
<thead>
<tr>
<th>Top-of-Wall-to-Ridge Height (feet)</th>
<th>Wall Supporting:</th>
<th>Total Required Length (feet) of Full-Height Bracing on Any Side of Rectangle</th>
<th>Length of Perpendicular Side (feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>10</td>
<td>Roof and ceiling only</td>
<td>2.0(^4)</td>
<td>3.5(^4)</td>
</tr>
<tr>
<td></td>
<td>One floor, roof and ceiling</td>
<td>3.5(^4)</td>
<td>6.5</td>
</tr>
<tr>
<td></td>
<td>Two floors, roof and ceiling</td>
<td>5.0</td>
<td>9.5</td>
</tr>
<tr>
<td>15</td>
<td>Roof and ceiling only</td>
<td>2.6(^4)</td>
<td>4.6</td>
</tr>
<tr>
<td></td>
<td>One floor, roof and ceiling</td>
<td>4.0</td>
<td>7.5</td>
</tr>
<tr>
<td></td>
<td>Two floors, roof and ceiling</td>
<td>5.5</td>
<td>10.5</td>
</tr>
<tr>
<td>20</td>
<td>Roof and ceiling only</td>
<td>2.9(^4)</td>
<td>5.2</td>
</tr>
<tr>
<td></td>
<td>One floor, roof and ceiling</td>
<td>4.5</td>
<td>8.5</td>
</tr>
<tr>
<td></td>
<td>Two floors, roof and ceiling</td>
<td>6.2</td>
<td>11.9</td>
</tr>
</tbody>
</table>

\(^4\)Interpolation is permitted. Extrapolation to buildings larger than addressed in this table is prohibited.

\(^b\)This table applies to wind exposure category B. For wind exposure category C or D, multiply the required length of wall bracing by 1.3 or 1.6, respectively. Wind exposure categories are as defined in Table 321.25–I footnotes C, D, and E.

\(^c\)Tabulated values are based on a nominal wall height of 10 feet. For nominal wall heights other than 10 feet, multiply the required length of bracing by the following factors: 0.90 for 8 feet, 0.95 for 9 feet, 1.05 for 11 feet, or 1.10 for 12 feet.

\(^d\)Where minimum 0.5-inch gypsum wallboard interior finish is not provided, the required bracing amount for the affected rectangle side shall be multiplied by 1.4, except this increase is not required for the portal frame method.

\(^e\)Adjustments in footnotes b to d apply cumulatively.

\(^f\)Perpendicular sides to the front and rear sides are the left and right sides. Perpendicular sides to the left and right sides are the front and rear sides. See Figure 321.25–B.

\(^g\)Continuous sheathing shall be applied to all surfaces of the wall, including areas between brace panels and above and below wall openings.

\(^h\)When used on a wall line with continuous sheathing, each portal frame panel is counted for its actual length in contributing toward the length of continuous sheathing used on other portions of the same wall line, such as the building side at a given story level.

\(^i\)Any value of less than 4.0 in this table serves only as the beginning value for calculation purposes. The resulting value shall be 4.0 or greater, to be consistent with Table 321.25–H and subd. 2.
FIGURE 321.25–C
LOCATION OF BRACED WALL PANELS ALONG A BUILDING SIDE

*A braced wall panel can be anything from one-half to one brace panel.

SECTION 7.  SPS 321.25 (8) (d) to (f) are repealed.

SECTION 8.  SPS 321.25 (8) (g) (title), (intro.), and 1. to 3. are renumbered SPS 321.25 (8) (d) (title), (intro.), and 1. to 3.

SECTION 9.  SPS 321.25 (8) (g) 4. and (h) and (9), Tables 321.25–K and 321.25–L, and Figures 321.25–D to 321.25–K are repealed.

SECTION 10.  SPS 320 to 325 Appendix, Minimum Fastener Schedule Table is amended to read:

CHAPTERS SPS 320–325 Appendix
MINIMUM FASTENER SCHEDULE TABLE
(Partial Table)

Other interior and exterior panel products and finishes installed per manufacturer requirements. For engineered connectors, use manufacturer’s specified fasteners.

<table>
<thead>
<tr>
<th>Description of Building Materials/Connection</th>
<th>Number and Type of Fastener</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wall Framing</td>
<td>2-16d at 16&quot;o.c.</td>
</tr>
<tr>
<td>Sole plate to joist or blocking, face nail</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Material</th>
<th>Fastener</th>
<th>Spacing of Fastener</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wood panel siding to framing</td>
<td>1 3/4&quot; galvanized roofing nail; 8d</td>
<td>Edges: 4 7/8&quot;</td>
</tr>
<tr>
<td></td>
<td>common nail; staple galvanized</td>
<td>Intermediate: 8 7/8&quot;</td>
</tr>
<tr>
<td></td>
<td>1 5/8&quot; long; 1 5/8&quot; screws, Type W or S</td>
<td></td>
</tr>
</tbody>
</table>
MINIMUM WIDTH OF BRACED WALL PANEL BETWEEN END OF WALL AND GARAGE DOOR

(Assuming garage end wall is the end of a rectangle side)

<table>
<thead>
<tr>
<th>METHOD</th>
<th>WALL HEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>8'</td>
</tr>
<tr>
<td>Portal Frame(^1,2)</td>
<td>16&quot;</td>
</tr>
<tr>
<td>Continuous(^3) Sheathing (Height of Door Opening)</td>
<td></td>
</tr>
<tr>
<td>6'8&quot;</td>
<td>32&quot;</td>
</tr>
<tr>
<td>8'</td>
<td>48&quot;</td>
</tr>
<tr>
<td>9'</td>
<td>54&quot;</td>
</tr>
<tr>
<td>10'</td>
<td></td>
</tr>
<tr>
<td>12'</td>
<td></td>
</tr>
<tr>
<td>Intermittent(^3)</td>
<td>36(^*4)</td>
</tr>
</tbody>
</table>

\(^1\) If using Intermittent Sheathing on the remainder of the rectangle side, a Portal Frame panel counts as \(\frac{1}{2}\) panel toward the total number of panels needed.

\(^2\) A full-height braced wall panel must go immediately on the other side of the garage door opening.

\(^3\) As long as the first panel starts within 12.5' of the end, there is no minimum width.

\(^4\) Counts as \(\frac{1}{4}\) panel toward the total number of panels needed.
**Wall Bracing Compliance Worksheet**

Complete this worksheet or provide equivalent information on the plans submitted with the permit application.

Sketch and dimension the building plan and the wall bracing rectangle(s) per 321.25(8)(c)1. and Figure 321.25-B. Provide and label additional sketches if the building plan/rectangle change at different floor levels.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Walls Supporting:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long side</td>
<td>Short side</td>
<td>Long side</td>
<td>Short side</td>
</tr>
<tr>
<td>Min. panel width (Table 321.25-G)</td>
<td>Continuous method (CS-WSP, CS-SFB)</td>
<td>Min. panel width (Table 321.25-H)</td>
<td>PF Method (see Figure 321.25-A). Indicate number of PF panels 16-24&quot; wide provided. Min. PF width (Fig. 321.25-A)</td>
</tr>
<tr>
<td>Roof and ceiling only</td>
<td>One floor, roof and ceiling</td>
<td>Two floors, roof and ceiling</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Walls Supporting:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long side</td>
<td>Short side</td>
<td>Long side</td>
<td>Short side</td>
</tr>
<tr>
<td>Min. panel width (Table 321.25-G)</td>
<td>Continuous method (CS-WSP, CS-SFB)</td>
<td>Min. panel width (Table 321.25-H)</td>
<td>PF Method (see Figure 321.25-A). Indicate number of PF panels 16-24&quot; wide provided. Min. PF width (Fig. 321.25-A)</td>
</tr>
<tr>
<td>Roof and ceiling only</td>
<td>One floor, roof and ceiling</td>
<td>Two floors, roof and ceiling</td>
<td></td>
</tr>
</tbody>
</table>

**PF Method:** For Intermittent bracing, per Table 321.25-1 footnote ‘h’, each PF panel (16-24” wide per Figure 321.25-A) counts as ½ of a braced wall panel when determining compliance with Table 321.25-L. For Continuously Sheathed bracing, the actual length of each PF panel (16-24” wide per Figure 321.25-A) in feet counts toward the required total length of bracing required. For intermittent or continuous methods, each PF panel meeting min. required width of Fig. 321.25-A counts as a braced wall panel when evaluating panel spacing per Fig. 321.25-C.

Indicate the location and construction details of required braced wall panels determined above on each rectangle side as required by Figure 321.25-C on the floor plans submitted with the permit application.
Wisconsin Administrative Code, SPS 320.10(2)(b): "The applicant or an authorized representative shall request inspections from the municipality ..."

Below are shown the required inspections you must call for:

**NOTICE**

**REQUIRD INSPECTIONS**

- SEWER
- EROSION CONTROL
- FOOTINGS (BEFORE POURING)
- FOUNDATION & DRAIN TILE (BEFORE POURING)
- UNDERFLOOR PLUMBING
- VAPOR RETARDER (Under Basement Floor)
- TEMPORARY ELECTRICAL SERVICE
- ROUGH CONSTRUCTION
- ROUGH PLUMBING
- ROUGH ELECTRIC
- ROUGH HEATING- A/C
- SERVICE- PERMANENT ELECTRICAL INSULATION
- FINAL INSPECTION (OCCUPANCY)
### Wisconsin Uniform Building Permit Application

**Instructions on back of second ply.** The information you provide may be used by other government agency programs [(Privacy Law, s. 15.04 (1)(m)]

---

**PERMIT REQUESTED**

- ☐ Constr.  ☐ HVAC  ☐ Electric  ☐ Plumbing  ☐ Erosion Control  ☐ Other:

<table>
<thead>
<tr>
<th>Owner’s Name</th>
<th>Mailing Address</th>
<th>Tel.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Contractor Name &amp; Type</th>
<th>Lic/Cert#</th>
<th>Mailing Address</th>
<th>Tel. &amp; Fax</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Dwelling Contractor (Constr.)</th>
<th></th>
</tr>
</thead>
</table>

| Dwelling Contr. Qualifier | The Dwelling Contr. Qualifier shall be an owner, CEO, COB or employee of the Dwelling Contr. |

<table>
<thead>
<tr>
<th>HVAC</th>
<th>Electrical</th>
<th>Plumbing</th>
</tr>
</thead>
</table>

---

**PROJECT LOCATION**

| Lot area Sq.ft. | ☐ One acre or more of soil will be disturbed | ☐ Town ☐ Village ☐ City of | ☐ 1/4, ☐ 1/4, of Section ☐ , T ☐ N, R ☐ E/W |

<table>
<thead>
<tr>
<th>Building Address</th>
<th>County</th>
<th>Subdivision Name</th>
<th>Lot No.</th>
<th>Block No.</th>
</tr>
</thead>
</table>

**Zoning District(s) | Zoning Permit No. | Setbacks: | Front | Rear | Left | Right |
|---------------------|------------------|----------|------|------|------|------|

<table>
<thead>
<tr>
<th>Unfin. Bsmnt Area</th>
<th>☐ 1-Story</th>
<th>☐ Seasonal</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Deck/ Porch</th>
<th>☐ 2-Story</th>
<th>☐ Permanent</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Other:</th>
<th>☐ Plus Basement</th>
<th>☐ Other:</th>
</tr>
</thead>
</table>

---

<table>
<thead>
<tr>
<th>1. PROJECT</th>
<th>3. OCCUPANCY</th>
<th>6. ELECTRIC</th>
<th>9. HVAC EQUIP.</th>
<th>12. ENERGY SOURCE</th>
</tr>
</thead>
</table>

| ☐ New | ☐ Repair | ☐ Single Family | ☐ Entrance Panel | ☐ Furnace |
| ☐ Alteration | ☐ Raze | ☐ Two Family | ☐ Amps: ☐ | ☐ Radiant Baseboard |
| ☐ Addition | ☐ Move | ☐ Garage | ☐ Underground | ☐ Heat Pump |
| ☐ Other: | ☐ Other: | ☐ Other: | ☐ Overhead | ☐ Boiler |

<table>
<thead>
<tr>
<th>☐ Central AC</th>
<th>☐ Fireplace</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>7. WALLS</th>
<th>4. CONST. TYPE</th>
<th>☐ Wood Frame</th>
<th>☐ Steel</th>
<th>☐ Other:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>☐ 14. EST. BUILDING COST w/o LAND</th>
<th>☐ Site-Built</th>
<th>☐ ICF</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>☐ Mfd. per WI UDC</th>
<th>☐ Vertical</th>
<th>☐ Horizontal</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>☐ Mfd. per US</th>
<th>☐ Timber/Pole</th>
<th>☐ Other:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>HUD</th>
<th>☐ Municipal</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>☐ Sanitary Permit#</th>
<th>☐ Municipal</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>☐ On-Site Well</th>
<th>☐ Municipal</th>
</tr>
</thead>
</table>

---

**10. SEWER**

- Envelope and Infiltration Losses (available from "Total Building Heating Load" on Rescheck report)

**11. WATER**

**12. ENERGY SOURCE**

- BTU/HR Total Calculated

**13. HEAT LOSS**

**14. EST. BUILDING COST w/o LAND**

- $ |

---

**APPLICANT (Print):** __________________________  **Sign:** __________________________

**DATE** ____________

**APPROVAL CONDITIONS**

- This permit is issued pursuant to the following conditions. Failure to comply may result in suspension or revocation of this permit or other penalty. ☐ See attached for conditions of approval.

---

**ISSUING JURISDICTION**

<table>
<thead>
<tr>
<th>☐ Town of</th>
<th>☐ Village of</th>
<th>☐ City of</th>
<th>☐ County of</th>
<th>☐ State—</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>☐ State-Contracted Inspection Agency#</th>
<th>Municipality Number of Dwelling Location</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>FEES:</th>
<th>PERMIT(S) ISSUED</th>
<th>WIS PERMIT SEAL #</th>
<th>PERMIT ISSUED BY:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Plan Review</th>
<th>☐</th>
<th>☐ Construction</th>
<th>Name</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Inspection</th>
<th>☐</th>
<th>☐ HVAC</th>
<th>Date</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Wis. Permit Seal</th>
<th>☐</th>
<th>☐ Electrical</th>
<th>Tel.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Other</th>
<th>☐</th>
<th>☐ Plumbing</th>
<th>Cert No.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>☐</th>
<th>☐ Erosion Control</th>
<th></th>
</tr>
</thead>
</table>

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SBD-5823(R07/16) Distribute: ☐ Ply 1 – Issuing Jurisdiction; ☐ Ply 2- Issuer forwards to state w/in 30 days; ☐ Ply 3- Inspector; ☐ Ply 4- Applicant
INSTRUCTIONS

The owner, builder or agents shall complete the application form down through the Signature of Applicant block and submit it and building plans and specifications to the enforcing jurisdiction, which is usually your municipality or county. Permit application data is used for statewide statistical gathering on new one- and two-family dwellings, as well as for local code administration. Please type or use ink and press firmly with multi-ply form.

PERMIT REQUESTED
• Check off type of Permit Requested, such as structural, HVAC, Electrical or Plumbing.
• Fill in owner's current Mailing Address and Telephone Number.
• If the project will disturb one acre or more of soil, the project is subject to the additional erosion control and stormwater provisions of ch. NR 151 of the WI Administrative Code. Checking this box will satisfy the related notification requirements of ch. NR 216.
• Fill in Contractor and Contractor Qualifier Information. Per s. 101.654 (1) WI Stats., an individual taking out an erosion control or construction permit shall enter his or her dwelling contractor certificate number, and name and certificate number of the dwelling contractor qualifier employed by the contactor, unless they reside or will reside in the dwelling. Per s. 101.63 (7) Wis. Stats., the master plumber name and license number must be entered before issuing a plumbing permit.

PROJECT LOCATION
• Fill in Building Address (number and street or sufficient information so that the building inspector can locate the site.
• Local zoning, land use and flood plain requirements must be satisfied before a building permit can be issued. County approval may be necessary.
• Fill in Zoning District, lot area and required building setbacks.

PROJECT DATA - Fill in all numbered project data blocks (1-14) with the required information. All data blocks must be filled in, including the following:
2. Area (involved in project):
Basements - include unfinished area only
Living area - include any finished area including finished areas in basements
Two-family dwellings - include separate and total combined areas
3. Occupancy - Check only "Single-Family" or "Two-Family" if that is what is being worked on. In other words, do not check either of these two blocks if only a new detached garage is being built, even if it serves a one or two family dwelling. Instead, check "Garage" and number of stalls. If the project is a community based residential facility serving 3 to 8 residents, it is considered a single-family dwelling.
9. HVAC Equipment - Check only the major source of heat, plus central air conditioning if present. Only check "Radiant Baseboard" if there is no central source of heat.
10. Plumbing - A building permit cannot be issued until a sanitary permit has been issued for any new or affected existing private onsite wastewater treatment system.
14. Estimated Cost - Include the total cost of construction, including materials and market rate labor, but not the cost of land or landscaping.

SIGNATURE – The owner or the contractor’s authorized agent shall sign and date this application form. If you do not possess the Dwelling Contractor certification, then you will need to check the owner-occupancy statement for any erosion control or construction permits.

CONDITIONS OF APPROVAL - The authority having jurisdiction uses this section to state any conditions that must be complied with pursuant to issuing the building permit.

ISSUING JURISDICTION: This must be completed by the authority having jurisdiction.
• Check off Jurisdiction Status, such as town, village, city, county or state and fill in Municipality Name
• Fill in State Inspection Agency number only if working under state inspection jurisdiction.
• Fill in Municipality Number of Dwelling Location
• Check off type of Permit Issued, such as construction, HVAC, electrical or plumbing.
• Fill in Wisconsin Uniform Permit Seal Number, if project is a new one- or two-family dwelling.
• Fill in Name and Inspector Certification Number of person reviewing building plans and date building permit issued.

INSPECTORS: PLEASE RETURN SECOND PLY WITHIN 30 DAYS AFTER ISSUANCE TO (You may fold along the dashed lines and insert this form into a window envelope.):

Industry Services Division
PO Box 7302
Madison WI 53707-7302
Cautionary Statement to Owners Obtaining Building Permits

101.65(lr) of the Wisconsin Statutes requires municipalities that enforce the Uniform Dwelling Code to provide an owner who applies for a building permit with a statement advising the owner that:

If the owner hires a contractor to perform work under the building permit and the contractor is not bonded or insured as required under s. 101.654 (2) (a), the following consequences might occur:

(a) The owner may be held liable for any bodily injury to or death of others or for any damage to the property of others that arises out of the work performed under the building permit or that is caused by any negligence by the contractor that occurs in connection with the work performed under the building permit.

(b) The owner may not be able to collect from the contractor damages for any loss sustained by the owner because of a violation by the contractor of the one- and two- family dwelling code or an ordinance enacted under sub. (1) (a), because of any bodily injury to or death of others or damage to the property of others that arises out of the work performed under the building permit or because of any bodily injury to or death of others or damage to the property of others that is caused by any negligence by the contractor that occurs in connection with the work performed under the building permit.

Cautionary Statement to Contractors for Projects Involving Building Built Before 1978

If this project is in a dwelling or child-occupied facility, built before 1978, and disturbs 6 sq. ft. or more of paint per room, 20 sq. ft. or more of exterior paint, or involves windows, then the requirements of ch. DHS 163 requiring Lead-Safe Renovation Training and Certification apply. Call (608)261-6876 or go to the Wisconsin Department of Health Services’ lead homepage for details of how to be in compliance.

Wetlands Notice to Permit Applicants

You are responsible for complying with state and federal laws concerning the construction near or on wetlands, lakes, and streams. Wetlands that are not associated with open water can be difficult to identify. Failure to comply may result in removal or modification of construction that violates the law or other penalties or costs. For more information, visit the Department of Natural Resources wetlands identification web page or contact a Department of Natural Resources service center.

Additional Responsibilities for Owners of Projects Disturbing One or More Acre of Soil

I understand that this project is subject to ch. NR 151 regarding additional erosion control and stormwater management and will comply with those standards.

Owner's Signature: _______________________________________ Date:___________________

Contractor Credential Requirements

All contractors shall possess an appropriate contractor credential issued by the Wisconsin Department of Safety and Professional Services. Contractors are also required to only subcontract with contractors that hold the appropriate contractor credentials.