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Masonry wall bracing guidelines

On July 25, 2005, 9:29 AM CST subscribe to Masonry Messenger to get the masonry messenger resources and information needed to stay up to date. No Thanks X Damian Lang As a mason contractor, how many nights did you put a wake up at 3 .m. with the wind blowing in your bedroom window? You can't sleep because you know you have walls laying up that can't be broken and you wonder if the wind will blow any of those walls. You hope your foremen properly smashed these walls, but you didn't apply them to do so. In fact, the truth is that you haven't taken the demands that are serious until tonight when the wind blows on your window. The next morning, you'll call upon your foremen to see if your walls are broken. By now it's too late. If they haven't been broken, chances are you may have lost some walls. Or maybe you had an experience like I did just last summer. On a Saturday night during a weekend trip, I was sitting around a campfire drinking beer with some friends, and plans to play golf the next morning when my cellphone rang. The room was quite big and comfortable. He informed me that we had a block of wall impact. Fortunately, it exploded when there were no workers in the area and no one was injured. So the next morning, instead of going to the golf course, I had to head to my place of work to assess the damage. What a way to ruin the hike! In writing this article, I hope that the likeness of one of your masonry walls falls will be reduced. And if it happens to you that you follow the right steps so that no one gets injured or killed and you get compensation for cleaning and rebuilding the walls. With that being said, I'm going to explain the most critical points of wall bracing, I hope, in simple Masons. Standard practice For years, the masonry industry has only had OSHA regulation follow for wall bracing. The OSHA regulation dictated that all masonry walls over eight feet high must be adequately broken. That was it! With this regulation, as long as your walls were some bracing on them and they didn't blow up during construction, you were adequately broken. On the other hand, if you were smashed into a 25-mile wind and your walls exploded through a 40-mile wind, your walls were deemed inadequately broken. It obviously turned out to be a pretty grey area of interpretation. The Mason America Contractors Association (MCAA) acknowledged this predicament and formed the Mason Wall Bracing Council, a panel of masonry experts including contractors, engineers and masonry design professionals. In 1999, the Council introduced a standard practice of building masonry walls, or standard practice. This Standard Practice reduces the risk of loss of production, loss of money and, most importantly, potential loss of life. First of all, Standard Practice establishes safety of life security its principled goal. From a practical point of view, he admits that? under some rare circumstances? it is impossible to allow the walls under construction, not blown away. Thus, Standard Practice does not fully protect against loss of property, but it provides contractors with masonry knowledge of how to prevent injuries due to wall breaks. Second, if OSHA had come to your work site and you were leading standard practice, you most likely wouldn't have been quoted or fined because it's an industry standard and, in most cases, OSHA recognizes it. Following Standard Practice, an additional bonus is also provided. Mason's contractors often tell me that the owner or general contractor requires them to brace their walls so often that it is ridiculous and almost inappropriate to build because of the extra cost of wandering. I always tell them that if bracing is in your part of the contract and the general contractor or owner requires additional bracing that goes beyond Standard Practice, the owner or general contractor must pay additional costs in the form of a change order. Otherwise you may lose your tail on the project due to the cost of installing additional bracing. This is one of the reasons why it is so important that you understand not only your part of the contract, but also Standard Practice. Know your zone First, the mason contractor is responsible for the creation and maintenance of the restricted access zone, also known as the Restricted Access Zone, on each side of the wall, which is subject to the collapse of the masonry wall. When scaffolding is up, the Restricted Area is on the side opposite the scaffolding and should be prevented from the wall at wall height plus four feet. However, once the scaffolding is removed, the restricted area must be maintained on both sides of the wall. The masonry contractor thinking in front will mark the Restricted Zone early, based on what will be the total, completed height of the wall once completed. So he or she can avoid adjusting the caution tape and then having to move it. For example, if your wall is built to a height of 24', it should be warned at 28' once the wall gets above 8' tall. Without proper planning, the area should be alerted at 12' when the wall becomes 8' tall and drove off as the wall gets higher. Why spend production time viewing boundaries? Time periods Standard Practice states that during the Initial Period construction, masonry work is allowed to continue until wind speeds exceed 20 mph. The initial period of time is limited to a maximum of one working day, during which masonry is laid over its base or the highest point of wandering. When the work is finished in a day, or when the specified height of the wall is reached, this part of the wall must be broken. During the initial construction period, only those employees who have walls are permitted in the Restricted Area. This includes any of the employees of the mason contractor or, say, the electrician who is responsible for putting clover in the wall as it is built. The plumber, installing water lines next to the wall, has no target of building the wall, so he or she will not be able to install these lines in the Limited Use Zone during the initial construction period. The interim period of the structure is the time that for the next initial period, until the wall is connected to structural frame elements, floors or roofs or adequately internally broken. Cross walls and pilars can also serve as stability to allow braces to be removed in these places. The bracing interim period should remain in place until final lateral stability from maintaining structural elements in place. During the interim, the restricted area must be evacuated at wind speeds of 35 mph or higher. Bracing bases When masonry masonry walls require at least two braces on the panel wall (the distance between the control seams). Using two braces on the panel is important because with only one bracket on the panel, the wall can wobble in and out of control seams and snakes in the winds. The maximum allowed length of the wall between the control seams is 25' in accordance with national building codes. Any length over 25' is considered illegal and should not be built as it is a violation of building codes. (A good rule of principle is to encourage your architect to put control joints at 24'8 apart if possible, since the unit can be laid out at this distance without cutting.) Braces must be installed with a 20% wall outside each brace on the control connection. The easiest way to understand this is to take the length of the panel and multiply by .2. For example, a long 25' wall multiplied by .2 will leave each bracket 5' from the control connections and 15' between the braces. The height of the brace depends on what period of construction is the wall, the weight of the units you install, and your grouting method. Keep in mind that the masonry wall is considered reinforced 12 hours after the grout is placed. So if you're low-lift grouting as masonry is stacked, your walls will be broken much more internally. This is due to grout having time to set while you put the next four to six feet of wall over it. Once the grout in the wall reaches this 12-hour mark, the masonry wall enters the interim and the lower braces can be moved upwards based on Standard Practice. In addition to standard practice, another good source of information is the MCAA Wall Design Guide, which has more than 700 styling examples of wall wandering. Lang Masonry Wind Speed Monitoring Contractors have wind monitors in each workplace to measure wind speeds. These wind instruments, called anemometers, between \$80 and \$200 and well worth the investment. Some of them will even sound alarm bells when exceeded the set wind speed. If you don't have these nasati tools, you can use the visual wind measurement method as long as you've taught your people how to visually measure based on beaufort's wind scale (BWS). However, if you use this visual method to measure, the evacuation time changes due to reduced accuracy of the visual method. Wind scale Beaufort Beaufort Wind speed (mph) WMO * Appears 0 Under 1 Calm smoke rises vertically 1 1-3 Light air smoke drift indicates wind direction 2 4-7 Light wind felt on the face, leaves rustle 3 8-12 Gentle wind leaves and twigs constantly moving 4 13-18 Moderate wind dust, leaves raised, small tree branches move 5 19-24 Fresh wind Small trees in leaves begin to snive 6 25-31 Strong wind Large tree branches move, wheezing wires 7 32-38 Near the gale Whole trees move, resistance felt, going against the wind 8 39-46 Gail Entire trees in motion, resistance felt coming from wind 9 47-54 Stong gale Minor structural damage occur, slate blows off roofs 10 55-63 Storm Trees Broken or Uproached, Significant Structural Damage 11 64-72 Violent Storm Widespread Damage 12 73 and Over Hurricane * World Meteorological Organization Using BWS Method, evacuations in the restricted area change from 20 mph to 15 mph over the initial period. This is considered a moderate breeze, where thin branches on trees move or dust and paper rise. During the interim, the evacuation of the restricted area varies from 35 mph to 30 mph using the BWS method. This is considered a strong breeze, where large branches of trees begin to move, open wires (such as power lines) begin to whistle, and umbrellas are difficult to keep in check. The BWS method may sound crazy, but it works. Compared to actual wind instruments, it's amazing how close you can to determine wind speed. Remember: If you use the BWS method and the OSHA inspector comes to your work site, make sure your responsible person? a person who has been trained on how to customize and control bracing walls, maintain a limited zone as well as control wind speed? makes it clear to them that you are measuring wind using this method. Notifications Once your people follow proper procedures, notifications are the next important part. For example, let's say other agreements operate in a restricted area during the initial period and refuse to stay ok. Or, did you put your braces up and other deals took them off? as with the wall we lost on Wal-Mart last summer. If other agreements operate in your area during the initial period, your responsible person must notify the general contractor of the limited zone requirements during that time period. If other deals take your braces down, make sure your foreman or person responsible general contractor that braces should remain in place until the walls are connected to the structure. In both cases, Recommend your foreman also puts this in writing. In addition, if the Person Responsible is unable to be on the territory, it is responsible for notifying the general contractor of the Superintendent of the Restricted Area during the initial and interim periods and how to monitor wind speeds so that the restricted area is evacuated if wind speeds exceed 20 mph (initial period) or 35 mph (interim). Be prepared and have a plan to be a contractor mason myself, I know that a huge amount of time can be saved when you have a plan for bracing the wall before construction begins. As long as your people know places to install braces and dead men as the wall is built, bracing becomes much easier and faster. This bit of training could save the mason contractor huge costs in the long run. Conclusion As a mason contractor who understands that beating masonry walls is so important to the safety of workers on site, I hope this article has helped clear the water a little bit for you. And before the next big wind blows against your bedroom window, I hope you've taken the time to explore standard practice for bracing masonry walls Under Construction and properly train your crews on the bracing wall. If you have one, you can just err and get back into a restful sleep. If you haven't, counting all the sheep in the world won't help. About author Damian Lang is a Masons contractor in southeast Ohio and the inventor of many systems and workforce savings products. Lang served as chairman of the Marketing Committee of the Mason America Contractors Association. He is also the author of the book Rewarding and calling employees for profit in Freemasonry. For a network with Damian on contractor tips or advice you have and would like to be published, contact him at dlang@langmasonry.com or 740-749-3512. This article is not intended to provide engineering advice, but to raise the issue of masonry wall bracing. Even though the author is a bracing system manufacturer, Freemason contractors and their employees should consult with the Mason Standard Practice Contractors Association of America for bracing Masonry Walls Under Construction, MCAA, engineer or manufacturer of their wall bracing system regarding their wall bracing issues. Proper bing walls will vary depending on the type of bracing used, the working conditions of the site and other engineering factors. Related Articles More Headlines Freemasonry Headlines

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