



NOTICE OF SPECIAL MEETING

PUBLIC MEETING AGENDA

**Twin Falls City Building Advisory Board
January 9, 2014 at 11:30 AM
City Council Chambers
305 3rd Avenue East Twin Falls, ID 83301**

BUILDING ADVISORY BOARD MEMBERS

Gary Bond Dan Brizee Darren Hall Sean Knutz Roger Laughlin Scott McClure James Ray
Vice-Chair
Jay Reis Scott Standley
Chair

NOTICE OF SPECIAL MEETING
Building Advisory Board

I. CALL MEETING TO ORDER:

1. Confirmation of quorum

II. CONSENT CALENDAR:

1. Approval of Minutes from the following meeting(s): [August 15, 2013](#) & [November 21, 2013](#)

III. ITEMS FOR DISCUSSION:

1. Code Adoption
2. Proposed ordinance to increasing Crawl Space Clearance
3. Adoption of 2009 International Residential Code Appendix G – Swimming Pools, Spas & Hot Tubs
4. Fee Change Follow-up

IV. INPUT AND/OR ITEMS FROM THE BUILDING ADVISORY BOARD

V. UPCOMING MEETINGS/SCHEDULE:

VI. ADJOURN MEETING:

Any person(s) needing special accommodations to participate in the above noticed meeting should contact Wendy Thompson at (208) 735-7238 at least two (2) working days before the meeting.

Si desea esta información en español, llame Leila Sanchez al (208)735-7287

Scott McClure, questioned if we could adopt the 2012 code and modify. Jon explained we can be more restrictive or less and have jurisdictional ordinances for local issues. Any main changes would have to go through the Building Code Board. If you have any amendments go to the Building Code Board, they are set up for this reason.

2. Crawl Space Increase - Code requires 18" increase our requirement to 24"

Dwaine, explained the 18" minimum comes from the Code to protect wood against decay it doesn't really address anything you put into the crawlspace, plumbing and return air. He showed some picture of good & bad overdig crawlspaces. Cost would probably be longer pony studs in the crawl space. Just wanted to bring it forward to get the boards opinion. This is something we want to look at being more restrictive than the code. We normally look at just minimum code and we can make it work but we do get a few complaints about just having the bare minimum space to run all the equipment for the home.

Scott Standley, if it would cost the homeowner any more money.

Dwaine, it will depend on how the contractor does it. If they increase the height of the concrete wall there may be added expense for concrete but if they do the overdig as shown in the picture it is on a two foot stem wall but has 32" of clearance. I've never heard a homeowner complain mainly it's the contractors trying to get in there and get their job done.

Scott Standley, if they needed to make a recommendation on it.

Dwaine Thomson, just asking for comments at this time to see if you want us to look into this more. I know there are some clearance issues with HVAC appliances in tight crawl spaces.

Scott McClure, comments about horizontal units.

James Ray, the way we are doing it seems to be working good. He doesn't have any of his subs complaining about lack of space.

Jon Laux, asked James what his overdig policy is.

James Ray, in the City limits we always try to drop our joists & overdig the interior of the hole.

Jon Laux, do you have a specified amount from edge of footing out how far you dig.

James Ray, normally three foot minimum.

Jon Laux, we have a couple of contractors that do that, some that are four or five feet, and others with no overdig at all. This picture is hard to see but the plumbing vent is about 18" with is the top of the footing of that pony wall.

James Ray, if they are dropping their floor joist and aren't overdigging I feel really bad for the plumbing and heating guys.

Jon Laux, that is what we are asking? Should we go with a direction that three foot out should we go with an overdig so we have the access?

James Ray, I think it should be required if they drop their joist they must do the overdig.

Jon Laux, Okay

Jarrod Bordi, Hanging joist is where we have the problem.

James Ray, if they do an eight inch footing and twenty-four inch stem wall there is plenty of space if they aren't hanging the joist.

Jon Laux, Then you get people who use 11 7/8" I joist and not 9 1/2" so you lose that amount of space. So it is something that gets really restrictive for people getting in and out and installations. It isn't a code requirement but for the east of installation should we give them the extra with an overdig? Is that something you want to direct us to do or leave code as is?

James Ray, I think most people are overdigging if they drop the joist. We missed one where we dropped out joist and it did work but the heating guys and plumbers did complain.

Jon Laux, This is not based off of a code requirement. Should we give direction for easier installation and future potential clearance issues in regards to mechanical or plumbing.

James Ray, As a Department I think you should. I would red line the plans that if they are going to drop their joist they have to do the overdig. It gives you as inspectors room to crawl around, insulators, everybody.

Jon Laux, It would require a direction and a policy change for us to do.

James Ray, I don't think you would catch any flack from buildings if you made that a rule so I don't know why we don't.

Jon Laux, We did investigate stacking of joist and the expense it incurred and heard that it is quite a bit more expensive so we thought overdig.

Scott Standley, So are we going to work on a recommendation, policy change? I think on the recommendation we all think it is a good idea but are we going to make it a mandatory change?

Dwaine Thomson, What we would need to do is put something down in writing and bring it back to you.

Scott Standley, So table it until you bring it back.

Dwaine Thomson, We'd bring it back and then to Council. Where we are going would be considered above code so we would need to have a policy.

James Ray, I think that would be a good policy.

Scott Standley, So we will table it until you bring it back.

3. Fee Change Follow-up

Dwaine Thomson, Since July we have gone through a fee change policy. We were trying to make our fees comparable to what we have been charging and make them easier to get into our new computer system. The handout shows the month of July, the numbers in red show those that the valuations given are below what we would have valued them off the old system.

Scott Standley, Are you catching flack off the new fees?

Dwaine Thomson, Yes a little bit. We have one contractor that doesn't want to include the profit. We don't care what the profit is we just want the total value.

Scott Standley, What I'm asking is if they are complaining about the fee itself or just the way you are getting to it? And, is this contractor a normal complainer?

Dwaine Thomson, No not normal. We have had a couple of issues. Wendy fields most of them at the front county and then mentions them to me.

Scott Standley, It looks like the old fees and the new fees aren't that far apart.

Dwaine Thomson, That was the whole objective. The one thing we are having a problem with is that we said within 20% up or down so that is really a 40% margin. I think we would have been more reasonable if we would have gone 10% above & 10% below to narrow the field a little bit more. There are a couple, not permitted yet, that we need to get bid sheets from because I question their cost.

Scott Standley, It looks like the top end ones get a little more overvalued than the others.

Dwaine Thomson, We've got one there that come in \$300,000 which was more than what we would have originally charged. If you look down at the totals over \$400 was in one permit.

Scott Standley, And \$300 in another. The others make a wash.

Dwaine Thomson, This is just the residential but we had a few new commercial. One shows a little less the other was above what our old valuation would have been.

Scott Standley, You recommend we tighten that valuation from 20% to 10%?

Dwaine Thomson, If things don't change. It is upon me to get ahold of those that are below that 20% and bring them up so we keep a level playing field on what we are charging.

James Ray, Didn't you set \$70 a square foot as the average.

Dwaine Thomson, We did and that is what we are looking at. What I will do is look at these and take the square footage times that by \$70 then multiply that by 20% to get the average and check to see if they are within that margin. I think it is being abused a little bit. They are knocking down what they are really going to get for it to compensate for the extra fee we are charging for the plan review fee. Which is a new fee.

James Ray, I knew people were going to undervalue their houses intentionally to have a lower permit fee.

Jon Laux, At the end of the fiscal year that \$70 goes away so basically the contractors can adjust what that valuation is and take that valuation down lower so that 20% keeps dropping down instead of staying level.

Scott Standley, I think the 20% was for your discrimination not the builder.

Jarrod Bordi, The problem is verifying their values are accurate.

Scott Standley, And that was really for your database information more than the fees.

Dwaine Thomson, There is some slack here that needs to be looked at and tightened up and if that doesn't happen we may need to go back to the drawing board.

Scott Standley, What do you want us to do? If tightening it up by 10%, I think we gave you that discretion. We are not intending to change the \$70 in our minds. If you need to tighten it down, in my world, get to it.

Jon Laux, But the \$70 was not adopted by the City Council.

Jarrold Bordi, It is based on averages.

Scott Standley, We can't help City Council.

James Ray, Can't you or we make it a fixed deal?

Jim Munn, Why aren't we doing it based on square footage? It seems absolutely ludicrous when people can manipulate the numbers to take advantage on fees. Why aren't you doing it on square footage when that is a known constant across the board?

Jon Laux, I think the reason was because of the ease of the new program.

Jim Munn, If this doesn't work for you guys lets get this thing fixed.

Scott Standley, I'm agreeing.

James Ray, You need to make it a hard and fast rule of \$70 a square foot period or whatever you think it should be.

Jim Munn, I find it mildly interesting that City Works doesn't work right.

Dwaine Thomson, We spend a lot of research before we implemented this and it was what some other cities did to simplify their fee process.

Jim Munn, Is it working for you?

Dwaine Thomson, It seems to be working.

Jim Munn: But it is being manipulated by certain people.

Jarrold Bordi, Potentially, but it is the first month.

Scott Standley, But the intent was for you guys to have a base to start with, the Builders don't have a choice. They bring in a set of plans and the square footage is the square footage and you guys are the ones who should manipulate it if anyone does. If they are manipulating it you guys are just allowing it and you shouldn't do that.

Jarrold Bordi, We are bound by how the ordinance was adopted and the ordinance changes every fiscal year based on the averages they give us. If they low ball their value every year every fiscal year it will go down.

Scott Standley, I think you are worried about thing we aren't going to allow to happen.

Jarrold Bordi, But we have to go by what is City ordinance.

Scott Standley, I know it and we are trying to make the ordinance. So we aren't going to allow that to happen. We have set \$70 and we are going to stick with that and maybe even take it up, I don't know. But that is what we are going to recommend. We don't have a choice other than recommendation but that is what we are after.

Dan Brizee, When you establish a value of \$70 a square foot for a house, that should cover the things that aren't frills. If the value of the house goes up because you put granite or other amenities does it make a bit of difference to our inspectors? Probably not. But it does take the value of the house up. If \$70 a square foot is the number than that is the number and don't let people push you around on it. Don't let them manipulate it.

Dwaine Thomson, The one thing that came up is that \$70 a square foot is for the dwelling, that would not include the garage.

James Ray, Or the cost of the land.

Dwaine Thomson, What we have done here, these figures, do not include the property value.

James Ray, Does that include a three car garage or two car garage.

Dwaine Thomson, Taking a look at it and applying \$70 a square foot for everything garage included. We are still trying to simplify. I agree that fair is fair. It would be nice to get this to work because it would simplify our system but if it doesn't work.

James Ray, I think you need to figure the garage space, covered patio space, floor space, add it all together and times it by .50 instead of .70 or whatever that number needs to be to make it work. That way they are paying for everything under roof. Because you are inspecting the covered patio's and garages but not getting any permit money for them.

Raub Owens, Just as a reminder for them claiming the value is to reward someone who is able to building less expensively rather than charging them for someone who doesn't. Part of the point was if we pick a value and assign it we will be wrong every time. Part of the argument was that at least 75-80% of the time if you tell us what you build it for we assume you are telling us the right amount and we have the correct amount to assess it. I think that was part of the thinking.

Scott Standley, That was the intent. The \$70 was just a checker type thing.

Raub Owens, There will be someone who uses the system and the 20% up of down was to give us some indication that we should look a little more closely.

Scott Standley, So you would like to tighten that down to 10 and I think in your world what you need to take it to is what you need to take it to.

Scott McClure: I agree that that was the original discussion because Habitat for Humanity was here and others. I also recognize that there are houses going in for substantially more than that and so we just tried to set a parameter and maybe it was too loose. I wouldn't have a problem, if that were your experience, to pulling that in. I guess I'd hate to readjust the formulas and take this in & that out but you will never find the perfect system, we just need to find a workable system. Another thing is we are just getting started on this, I hate to far a month into it and totally change the rules. Lets get a little experience before we start really saying it's broken.

Raub Owens, I think this is just to keep you guys up to date, give it three more months.

Scott Standley, I think that's a good idea.

Dan Brizee, You have actually collected more money than you would have.

Raub Owens, Overall

Dwaine Thomson, And we have, we are still in the black, always have been and always will be. That is why we gave you the new fee and old fee. We are collecting a little more than what we have.

Dan Brizee, I appreciate that you are keeping track of it and looking at it but I think you need a little more data. We understand where you are but need more data.

Dwaine Thomson, The biggest thing I want to do is make sure we are all working on the same level playing field. I don't want the building permit fee to weigh in on if you get the job or not. There are

some thinks I can get into to see what these houses are really selling for and put some heat on some of the people trying to undercut the situation and if they don't want to play we will just have to tighten up the rules.

Scott Standley, So we are back to punishing the masses for the few.

Dwaine Thomson, If you don't want to give us a fair price we will just add the 20% above what you give us.

Scott Standley, We have given you that leeway to do that. I think that is what it's all about, just make sure you think it is fair.

Dwaine Thomson, This gives me an idea of what's happening and where are we. Is everyone being honest.

Roger Laughlin, How are you allowing them to adjust the \$70 per square foot.

Dwaine Thomson, I'm not allowing it.

Roger Laughlin, I guess I'm really confused.

Dwaine Thomson, The way it has been working is that we have a bottom line that we want the total value including profit, exempting out the property value. I look at their value and compare it to \$70 a square foot and if it is within the 20% range then they are good but if they are lower than I call and ask for their bid sheet.

Roger Laughlin, I thought our intent was basically \$70 a square foot. If they wanted to build a 1200 square foot house it is \$70 for that or if they want to build a 4500 square foot house it is \$70 for that. I'm confused about this going down.

Dwaine Thomson, Well, the values being presented to us.

Roger Laughlin, Are you still allowing the contractor to give you a value?

James Ray, They are.

Dwaine Thomson, We are.

James Ray, That's how they get it.

Dwaine Thomson, They have to sign an affidavit stating this is right.

Roger Laughlin, I thought our intent was \$70 to build so if they wanted to build a 1200 square foot house it is \$70 and if they wanted to build a 4500 square foot house with granite, etc it is up to them, we just cover our costs.

James Ray, Bottom line is you have a certain amount of money to run your department. I don't understand why it matters to what the value of the home is as long as you get the permit fee you need to run your department. So why do you even ask why not take it and times it by \$70 and don't even ask.

Roger Laughlin, What do you care? If \$70 allows you to cover your costs for inspections. I think the committee felt that if you are charging more for granite countertops it really isn't fair but if you are charging \$70 to everyone because that's what is basically costs then what they adds to it is their business. Am maybe I not really understanding.

Dwaine Thomson, Well I'm not sure that is really how we presented that.

Scott Standley, They were trying to get the values of the house.

Dwaine Thomson, \$70 was just a base check.

Scott Standley, It wasn't as much about the permit as it was about the value.

Dwaine Thomson, If the value doesn't hit within the \$70 a square foot it is questionable.

James Ray, What at this point would it take to establish that fee? So you weren't getting guess work and people being dishonest.

Raub Owens, It would have to go back through City Council.

James Ray, Then go to them and say this isn't working the way it was intended.

Scott Standley, So City Council didn't adopt the \$70.

Raub Owens, They adopted the ordinance that gives you that range as long as it is in the range of the \$70.

Scott Standley, well lets recommend it to be within 5%.

Scott McClure, I still say we are fixing something we don't know is broken. I think you need to go bend some people ears and get them back in line and let them know what the process is and find out what the reaction is. If you still have outliers that are not going to react properly unless we put the hammer on them so be it. But we don't know that's the situation now. I've seen it before that you put in a law or regulation and before you even get half started you change it. It's nonproductive and confusing to the public to tell them one thing then two months later you tell them something different.

Dwaine Thomson, There are some ways I can take a look at this and contact certain contractors to bend their ear that if they don't want to tell us the true value, I'll have to implement the extra percentage.

Scott McClure, And if it doesn't work, it doesn't work. I'm not saying this is the perfect solution but on the other hand we don't know if it is an acceptable solution.

Dwaine Thomson, We are just trying to get this thing off the ground and I wanted to share with you some of the things that July produced. Give me some more time and hopefully we will have a lot better report at the next meeting.

IV. INPUT AND/OR ITEMS FROM THE BUILDING ADVISORY BOARD

Scott Standley, Input on the next advisory board? Sounds like we are going to talk about fees again.

Jon Laux, crawl spaces.

Scott Standley, I think you will get that if you get it here.

V. UPCOMING MEETINGS/SCHEDULE:

Scott Standley, Upcoming meetings, when are we going to schedule one? Approximately three months. What are our options? Anyone have any November problems? Either the third week or second? Anyone have any problems in November? So lets to do the third week in November, the 21st.

VI. ADJOURN MEETING

Scott Standley, Move to adjourn.

James Ray, So Moved

Meeting adjourned at 12:17 pm

Any person(s) needing special accommodations to participate in the above noticed meeting should contact Wendy Thompson at (208) 735-7238 at least two (2) working days before the meeting.



P.O. Box 1907 324 Hansen Street East Twin Falls, Idaho 83303-1907 Fax: (208) 736-2256

OFFICE OF THE BUILDING DEPARTMENT

208-735-7288

Crawl Space Clearances

Crawl space access needs to provide adequate space for appliance, mechanical, plumbing systems. It is vital to be able to install and or replace these installations as needed for installation, replacement and maintenance.

The minimum 18 inch is basically for eliminating decay. There is no minimum standard for the installation of mechanical duct work or plumbing. An 18/ 24 inch crawl leaves little to no space available for the installation, repair and replacement of these very important installations.

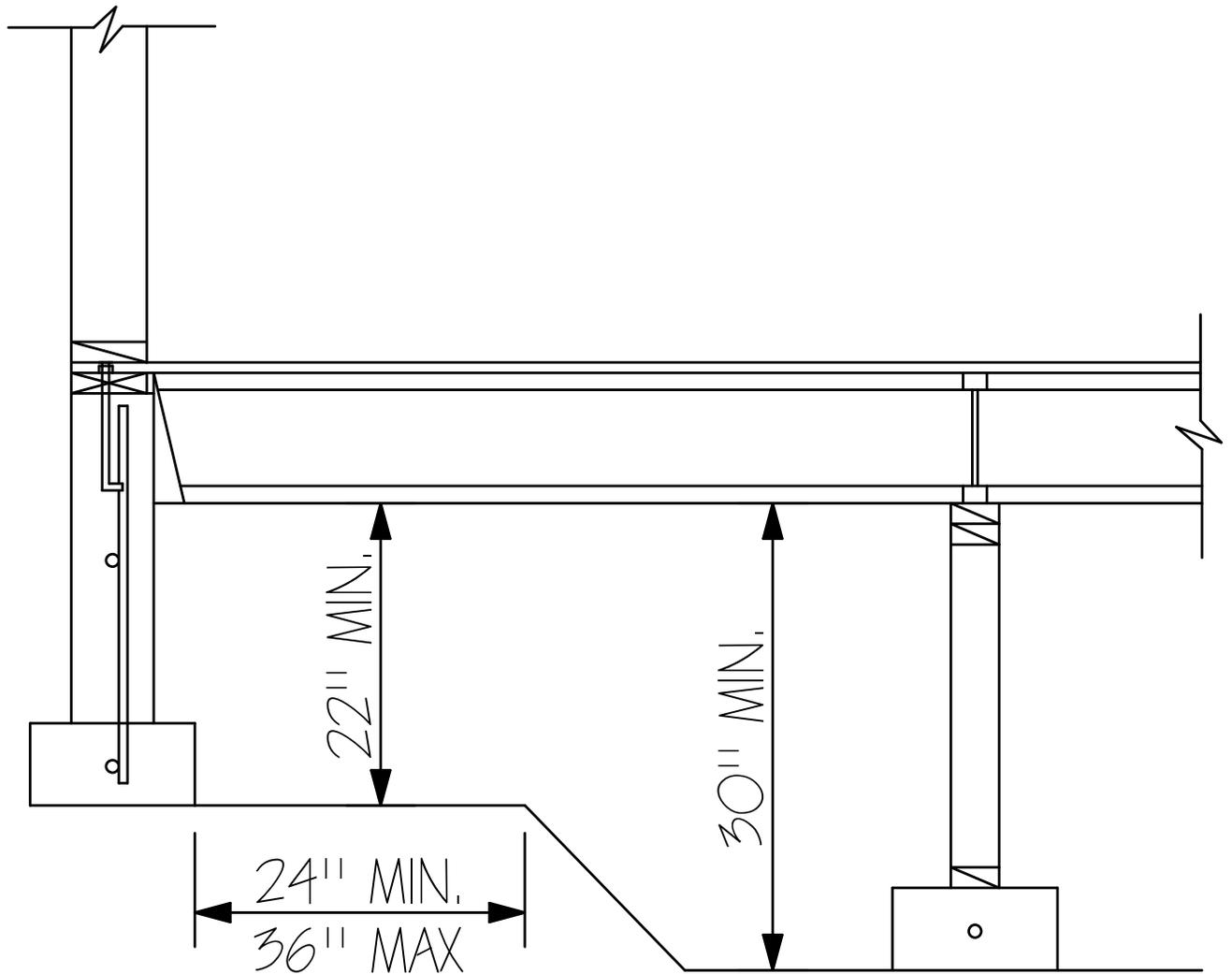
Therefore an increase in the minimum required clearances is needed. Currently, most homes being constructed today have 24 inch + crawl space clearance, but not all have an over-dig area.

Crawl space access depth from bottom of floor joists to crawl space floor shall be a minimum of 30 inches.

If floor joists are hung on a 24 inch foundation wall, the crawl space shall be over dug in the crawl area, lowering the interior footings to increase crawl access a minimum of 30 inches. Surrounding exterior footings shall have adequate soil along the interior to eliminate soil erosion within the crawl area. From the interior face of the building's exterior footing, an area of undisturbed soil with the minimum 24 inch & a maximum of 36 inch dimensions extending horizontally before sloping to the depth of the over dig shall be provided. In the event that a crawlspace over dig exceeds the 30 inch required depth, the distance from the exterior footings to the bottom of the over dig must maintain the required slope as per the requirements in the International Residential Code for footings on or adjacent to slopes.

The minimum 24 inch frost depth along the exterior of the foundation shall be maintained.

Dwaine Thomson, CBO
Building Official
1-208-735-7288
dthomson@tfid.org



CRAWL SPACE DETAIL

APPENDIX G

SWIMMING POOLS, SPAS AND HOT TUBS

(The provisions contained in this appendix are not mandatory unless specifically referenced in the adopting ordinance.)

General Comments

Drowning is the second leading cause of accidental death in the home for children under five years of age. It has been the number one cause of accidental deaths in the home for that age group in a number of states, including Arizona, California, Florida and Texas. The use of effective residential swimming pool barriers is the best way to reduce these tragic losses.

This appendix chapter sets forth the regulations for swimming pools, hot tubs and spas. The primary focus of the provisions is the need for an effective barrier surrounding the water area to reduce the potential for young children to gain uncontrolled access.

Section AG101 establishes the scope of the chapter. Section AG102 defines those terms specific to this appendix chapter. Section AG103 identifies specification standards for the design and construction of swimming pools. Section AG104 identifies specification standards for the design and construction of spas and hot tubs. Section AG105 discusses barrier requirements for swimming pools, hot tubs and spas. Section AG106 contains provisions for entrapment protection for suction outlets. Section AG107 indicates the abbreviations for standards-writing organizations, and Section AG108

specifies the various standards used in this appendix chapter.

Purpose

According to the Consumer Product Safety Commission (CPSC), approximately 350 children under 5 years of age drown each year in residential swimming pools, spas and hot tubs. A CPSC study, *Child Drowning Study: A Report on the Epidemiology of Drownings in Residential Pools of Children Under Age Five*, found that the majority of the victims lived in or were visiting the residence where the accident happened. Less than 2 percent of the drowning incidents occurred when a child trespassed on the property. For these reasons, this appendix chapter states that all swimming pools, spas and hot tubs must be enclosed to prevent young children from gaining unsupervised access to pool areas. This chapter provides prescriptive details for the construction of enclosures around swimming pools, spas and hot tubs to make it more difficult for children, particularly those 5 years old and younger, to enter such areas unsupervised.

SECTION AG101 GENERAL

AG101.1 General. The provisions of this appendix shall control the design and construction of swimming pools, spas and hot tubs installed in or on the *lot* of a one- or two-family dwelling.

❖ This section provides the scope of the appendix chapter on swimming pools, spas and hot tubs. It regulates the design and construction of such facilities where they are located inside a dwelling unit or on the lot of a one- or two-family dwelling.

AG101.2 Pools in flood hazard areas. Pools that are located in flood hazard areas established by Table R301.2(1), including above-ground pools, on-ground pools and in-ground pools that involve placement of fill, shall comply with Sections AG101.2.1 or AG101.2.2.

Exception: Pools located in riverine flood hazard areas which are outside of designated floodways.

❖ Pools, especially above-ground pools and pools that involve fill, can block floodwater and cause waters to rise higher if they are placed in areas with effective flow (effective flow areas are areas that pass the great-

est volumes of water, typically with higher velocities). The requirement to consider the impacts of development on flood heights where floodways have not been designated is consistent with the National Flood Insurance Program, *International Residential Code*® (IRC®) Section R324.1.3.2, and the *International Building Code*® (IBC®).

AG101.2.1 Pools located in designated floodways. Where pools are located in designated floodways, documentation shall be submitted to the *building official*, which demonstrates that the construction of the pool will not increase the design flood elevation at any point within the *jurisdiction*.

❖ As with any other construction, the pool could be located in a designated floodway. In this case, an analysis is required to simply show that the design flood elevation in the community is not impacted by the addition of the pool.

AG101.2.2 Pools located where floodways have not been designated. Where pools are located where design flood elevations are specified but floodways have not been designated, the applicant shall provide a floodway analysis that demonstrates that the proposed pool will not increase the design flood eleva-

tion more than 1 foot (305 mm) at any point within the *jurisdiction*.

- ❖ Similar to the requirements of AG101.2.1, the concern is that the pool not cause an increase of 1 foot (305 mm) to the design flood elevation in the community. In this case, a floodway analysis is required, given that there are no designated floodways. Although FEMA has provided floodways along many rivers and streams shown on a community's Flood Insurance Rate Map (FIRM), many other riverine flood hazard areas have Base Flood Elevations (BFEs) but not designated floodways. In these areas, the potential effects that floodplain construction may have on flood elevations may not have been properly evaluated. In this case, the permit applicant must prepare a hydraulic analysis.

SECTION AG102 DEFINITIONS

AG102.1 General. For the purposes of these requirements, the terms used shall be defined as follows and as set forth in Chapter 2.

- ❖ This section clarifies the terminology used in this appendix chapter. The terms take on specific meanings, often different from the way they are typically used.

ABOVE-GROUND/ON-GROUND POOL. See "Swimming pool."

- ❖ These two terms have essentially the same meaning. If a side of a swimming pool projects above the adjacent ground level, the pool is referred to as an above-ground pool. If the bottom of the pool rests on the ground with no portion recessed except for leveling purposes, it is referred to as an on-ground pool. The important factor in both situations is that access to the pool surface is elevated and requires a vertical ascent (from at least one side) to gain access to the water.

A swimming pool situated on the ground or located above the ground is in the same category as other similar facilities such as spas, hot tubs and in-ground pools. All such facilities are simply regulated as swimming pools.

BARRIER. A fence, wall, building wall or combination thereof which completely surrounds the swimming pool and obstructs access to the swimming pool.

- ❖ Any system of components that encloses a swimming pool to the degree that access is obstructed is a barrier. Enclosure components include the exterior wall of the dwelling unit, a fence and any doors or gates included as a portion of the enclosure. Any construction or natural element that does not surround the pool will allow access at some point. The vast majority of provisions in this appendix chapter relate to the installation of a complying barrier to restrict access to swimming pools, spas and hot tubs. Left unprotected, these facilities present the potential for drownings and near-drownings.

HOT TUB. See "Swimming pool."

- ❖ Typically regarded as a small soaking tub, a hot tub is defined as a swimming pool and is regulated in the same manner as spas and the various types of swimming pools. Hot tubs often are equipped to introduce bubbles or jets of water into the tub.

IN-GROUND POOL. See "Swimming pool."

- ❖ An in-ground pool is a swimming pool in which the top of the pool structure is roughly at the same elevation as the adjoining surface surrounding the pool. Unlike an above-ground or on-ground pool, the pool construction itself does not limit access to the pool.

A swimming pool constructed in the ground is in the same category as similar facilities such as spas, hot tubs, above-ground pools and on-ground pools. All such facilities are simply regulated as swimming pools.

RESIDENTIAL. That which is situated on the premises of a detached one- or two-family dwelling or a one-family *townhouse* not more than three stories in height.

- ❖ Where a pool is located on the property of a single-family dwelling, two-family dwelling, or one-family townhouse, it is "residential." The scope of the provisions in this appendix chapter coincides with this definition.

SPA, NONPORTABLE. See "Swimming pool."

- ❖ Typically regarded as a whirlpool tub, a spa is defined as a swimming pool and is regulated in the same manner as hot tubs and the various types of swimming pools.

SPA, PORTABLE. A nonpermanent structure intended for recreational bathing, in which all controls, water-heating and water-circulating *equipment* are an integral part of the product.

- ❖ A nonpermanent structure, a portable spa is self-contained, with all of the controls and equipment integrated.

SWIMMING POOL. Any structure intended for swimming or recreational bathing that contains water over 24 inches (610 mm) deep. This includes in-ground, above-ground and on-ground swimming pools, hot tubs and spas.

- ❖ To be considered a swimming pool for the provisions of this appendix chapter, the structure used for swimming or recreational bathing must be more than 24 inches (610 mm) deep. Hot tubs, spas, in-ground pools, on-ground pools and above-ground pools are included in this definition if they are the minimum depth prescribed.

SWIMMING POOL, INDOOR. A swimming pool which is totally contained within a structure and surrounded on all four sides by the walls of the enclosing structure.

- ❖ Where a swimming pool is located in an enclosed structure, fully surrounded by walls, it is an indoor pool. Of critical concern is the easy access afforded to children by an indoor pool.

SWIMMING POOL, OUTDOOR. Any swimming pool which is not an indoor pool.

- ❖ Where a swimming pool is not fully enclosed, as is required in the definition of an indoor pool, it is an outdoor swimming pool. A pool that may be partially inside and partially outside is defined as an outdoor pool because it is not completely surrounded by a structure.

SECTION AG103 SWIMMING POOLS

AG103.1 In-ground pools. In-ground pools shall be designed and constructed in conformance with ANSI/NSPI-5 as listed in Section AG108.

- ❖ The requirements of ANSI/NSPI-5 regulating residential in-ground swimming pools are applicable to all in-ground pools regulated by this appendix chapter.

AG103.2 Above-ground and on-ground pools. Above-ground and on-ground pools shall be designed and constructed in conformance with ANSI/NSPI-4 as listed in Section AG108.

- ❖ The requirements of ANSI/NSPI-4 regulating residential above-ground and on-ground swimming pools are applicable to all such pools regulated by this appendix chapter.

AG103.3 Pools in flood hazard areas. In flood hazard areas established by Table R301.2(1), pools in coastal high hazard areas shall be designed and constructed in conformance with ASCE 24.

- ❖ The purpose of this section is to address installation of swimming pools in or on the lot of a one- or two-family dwelling if the location of the proposed swimming pool is in a coastal high-hazard area (V Zone). Coastal high-hazard areas are areas where wave heights are predicted to exceed 3 feet (914.4 mm) during the base flood. Breaking waves impart dynamic loads on structures, including above-ground pools and inground pools in soils that are subject to scour and erosion. ASCE 24 specifies that pools are to be designed to withstand flood-related loads and load combinations. If pools are structurally connected to buildings, the pools are to be designed to function as a continuation of the building (see Section R324.3.3). The regulations of the National Flood Insurance Program require that all development be designed and adequately anchored to prevent floatation, collapse, or lateral movement resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy.

SECTION AG104 SPAS AND HOT TUBS

AG104.1 Permanently installed spas and hot tubs. Permanently installed spas and hot tubs shall be designed and constructed in conformance with ANSI/NSPI-3 as listed in Section AG108.

- ❖ The requirements of ANSI/NSPI-3 regulating permanently installed residential spas are applicable to all nonportable spas and hot tubs.

AG104.2 Portable spas and hot tubs. Portable spas and hot tubs shall be designed and constructed in conformance with ANSI/NSPI-6 as listed in Section AG108.

- ❖ The requirements of ANSI/NSPI-6 regulating residential portable spas are applicable to all such spas.

SECTION AG105 BARRIER REQUIREMENTS

AG105.1 Application. The provisions of this chapter shall control the design of barriers for residential swimming pools, spas and hot tubs. These design controls are intended to provide protection against potential drownings and near-drownings by restricting access to swimming pools, spas and hot tubs.

- ❖ This section describes the provisions for barriers around residential swimming pools, hot tubs and spas. A swimming pool or similar facility creates an attractive temptation to children, including very young children and infants who do not know how to swim. The installation of an effective barrier can help reduce the number of children who die or are injured as the result of open access to a swimming pool, spa or hot tub.

AG105.2 Outdoor swimming pool. An outdoor swimming pool, including an in-ground, above-ground or on-ground pool, hot tub or spa shall be surrounded by a barrier which shall comply with the following:

1. The top of the barrier shall be at least 48 inches (1219 mm) above *grade* measured on the side of the barrier which faces away from the swimming pool. The maximum vertical clearance between grade and the bottom of the barrier shall be 2 inches (51 mm) measured on the side of the barrier which faces away from the swimming pool. Where the top of the pool structure is above grade, such as an above-ground pool, the barrier may be at ground level, such as the pool structure, or mounted on top of the pool structure. Where the barrier is mounted on top of the pool structure, the maximum vertical clearance between the top of the pool structure and the bottom of the barrier shall be 4 inches (102 mm).
2. Openings in the barrier shall not allow passage of a 4-inch-diameter (102 mm) sphere.
3. Solid barriers which do not have openings, such as a masonry or stone wall, shall not contain indentations or protrusions except for normal construction tolerances and tooled masonry joints.
4. Where the barrier is composed of horizontal and vertical members and the distance between the tops of the horizontal members is less than 45 inches (1143 mm), the horizontal members shall be located on the swimming pool side of the fence. Spacing between vertical members shall not exceed $1\frac{3}{4}$ inches (44 mm) in width. Where there are decorative cutouts within vertical members, spacing within the cutouts shall not exceed $1\frac{3}{4}$ inches (44 mm) in width.
5. Where the barrier is composed of horizontal and vertical members and the distance between the tops of the hori-

zontal members is 45 inches (1143 mm) or more, spacing between vertical members shall not exceed 4 inches (102 mm). Where there are decorative cutouts within vertical members, spacing within the cutouts shall not exceed 1³/₄ inches (44 mm) in width.

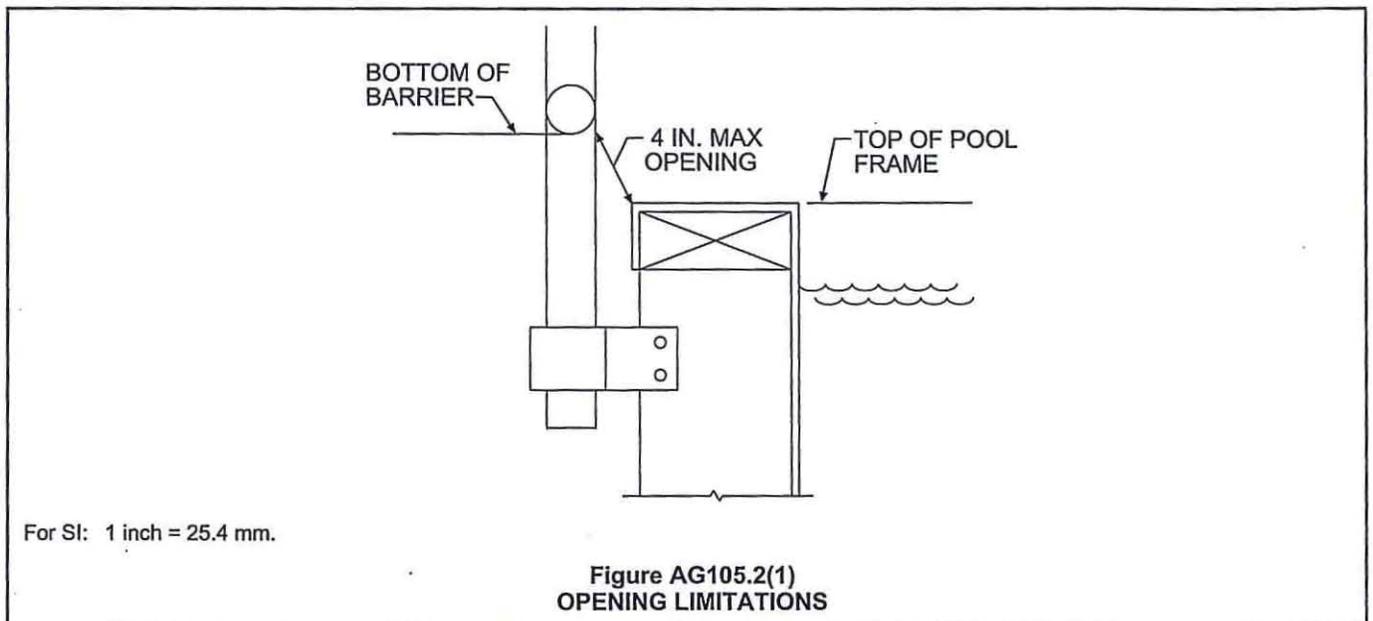
6. Maximum mesh size for chain link fences shall be a 2¹/₄-inch (57 mm) square unless the fence has slats fastened at the top or the bottom which reduce the openings to not more than 1³/₄ inches (44 mm).
7. Where the barrier is composed of diagonal members, such as a lattice fence, the maximum opening formed by the diagonal members shall not be more than 1³/₄ inches (44 mm).
8. Access gates shall comply with the requirements of Section AG105.2, Items 1 through 7, and shall be equipped to accommodate a locking device. Pedestrian access gates shall open outward away from the pool and shall be self-closing and have a self-latching device. Gates other than pedestrian access gates shall have a self-latching device. Where the release mechanism of the self-latching device is located less than 54 inches (1372 mm) from the bottom of the gate, the release mechanism and openings shall comply with the following:
 - 8.1. The release mechanism shall be located on the pool side of the gate at least 3 inches (76 mm) below the top of the gate; and
 - 8.2. The gate and barrier shall have no opening larger than 1/2 inch (12.7 mm) within 18 inches (457 mm) of the release mechanism.
9. Where a wall of a *dwelling* serves as part of the barrier, one of the following conditions shall be met:
 - 9.1. The pool shall be equipped with a powered safety cover in compliance with ASTM F 1346; or
 - 9.2. Doors with direct access to the pool through that wall shall be equipped with an alarm which pro-

duces an audible warning when the door and/or its screen, if present, are opened. The alarm shall be listed and *labeled* in accordance with UL 2017. The deactivation switch(es) shall be located at least 54 inches (1372 mm) above the threshold of the door; or

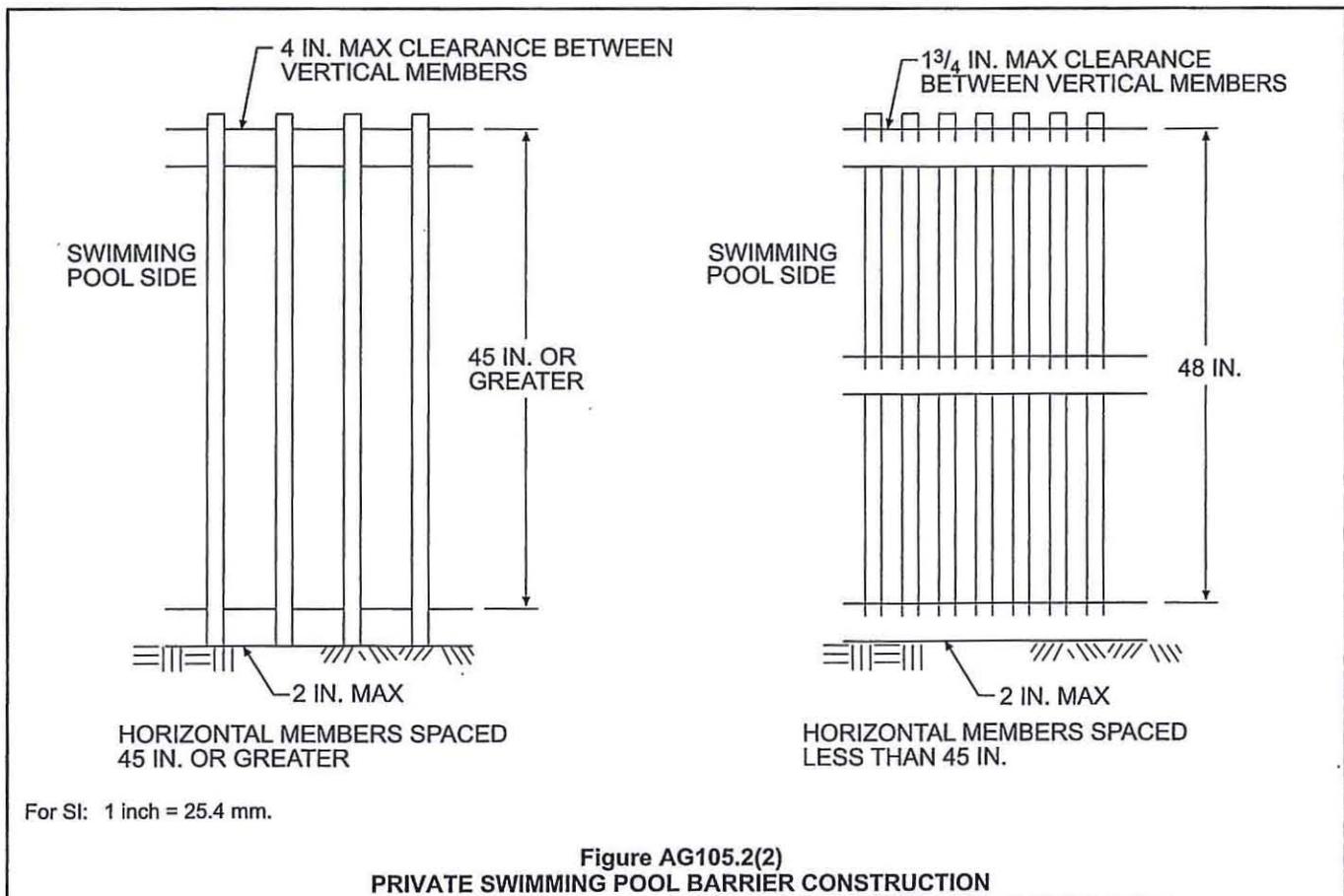
- 9.3. Other means of protection, such as self-closing doors with self-latching devices, which are *approved* by the governing body, shall be acceptable as long as the degree of protection afforded is not less than the protection afforded by Item 9.1 or 9.2 described above.
10. Where an above-ground pool structure is used as a barrier or where the barrier is mounted on top of the pool structure, and the means of access is a ladder or steps:
 - 10.1. The ladder or steps shall be capable of being secured, locked or removed to prevent access; or
 - 10.2. The ladder or steps shall be surrounded by a barrier which meets the requirements of Section AG105.2, Items 1 through 9. When the ladder or steps are secured, locked or removed, any opening created shall not allow the passage of a 4-inch-diameter (102 mm) sphere.

❖ This section provides prescriptive requirements for the construction of the swimming pool barrier.

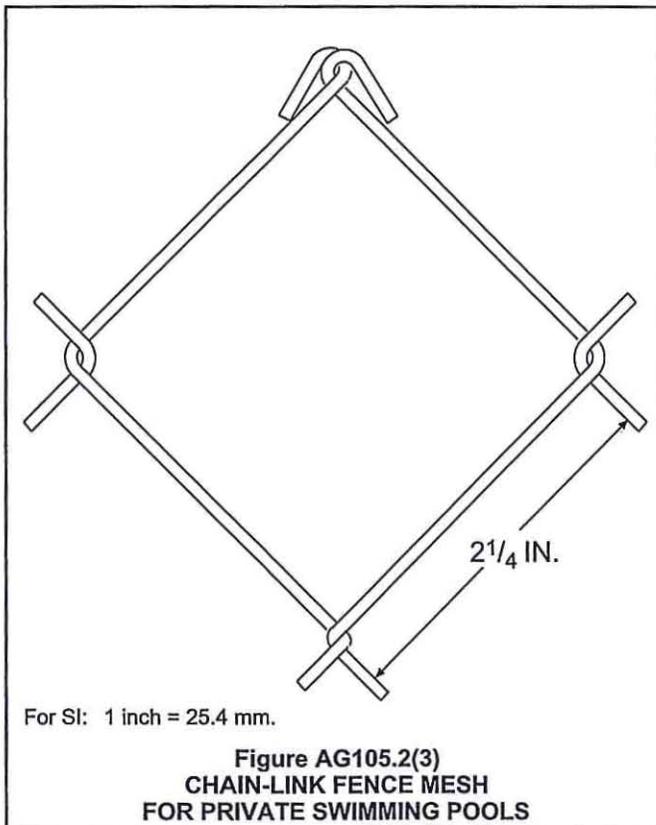
1. The barrier height requirement of 48 inches (1219 mm) above the ground is based on reports that document the ability of children under the age of 5 to climb over barriers that are less than 48 inches (1219 mm) in height. The basis for the 4-inch (102 mm) criterion for an opening between the barrier and the top of the pool frame is the same as for guard construction as addressed in Section R312. Refer to Commentary Figure AG105.2(1).



2. The general provision is applicable only when one of the conditions addressed in Items 4, 5, 6 and 7 is not present. For example, a chain-link fence would be regulated by the requirements of Item 6, which reduces the general opening criterion of 4 inches (102 mm) to $2\frac{1}{4}$ inches (57 mm). The basis for the 4-inch (102 mm) criterion is the same as for guard construction per Section R312. It is based on studies of the body measurements of children 13 to 18 months old.
3. This provision reduces the potential for gaining a foothold and climbing the barrier.
4. The more stringent 1.75-inch (44 mm) provision for spacing between vertical members applies when the spacing between horizontal members is less than 45 inches (1143 mm). It acknowledges the potential for a child to gain both a handhold and a foothold on closely spaced horizontal members and reduces the potential for a child to gain a foothold by limiting the space between the vertical members on the same barrier. If the horizontal members are spaced less than 45 inches (1143 mm) apart, they must also be located on the swimming pool side of the fence as shown in Commentary Figure AG105.2(2) so that they are not available to be used to climb the barriers.
5. This requirement is the counterpart to Item 4 in that it permits the opening in the barrier to be 4 inches (102 mm) if the vertical spacing of the horizontal members equals or exceeds 45 inches (1143 mm) as illustrated in Commentary Figure AG105.2(2). It is consistent with Item 2, which limits openings in the barrier to a 4-inch (102 mm) diameter. The spacing of horizontal members 45 inches (1143 mm) apart precludes them from being used by small children to climb the barrier.
6. The $2\frac{1}{4}$ -inch (57 mm) dimension is intended to reduce the potential for a child to gain a foothold [see Commentary Figure AG105.2(3)]. The mesh size is permitted to be larger than $2\frac{1}{4}$ -inches (57 mm) square if slats are used to reduce the mesh opening to $1\frac{3}{4}$ inches (44 mm) in order to decrease the potential for a child to obtain a foothold or handhold.
7. A slightly larger opening is permitted for barriers composed of diagonal members other than chain link fences, on the basis that such barriers would be more difficult to gain a foothold and handhold on than a chain link fence. The $1\frac{3}{4}$ -inch (44 mm) dimension is consistent with Items 4, 5 and 6.



8. A gate represents the same potential hazard relative to climbing as do the other portions of the barrier; therefore, it must be constructed in accordance with applicable Items 1 through 7. Additionally, because the gate also represents a potential breach of the barrier because the gate can be opened, the code provides prescriptive details for the construction and operation of the gate. A self-closing pedestrian gate must open away from the pool because if the latch fails to operate, a child pushing on the gate will not gain immediate access to the pool. Pushing on the gate may also engage the latch. Large, nonpedestrian gates are not required to be self-closing because of prohibitive cost and maintenance concerns coupled with the fact that these gates are typically operated by persons other than small children. The 54-inch (1372 mm) latch height requirement limits the potential for small children to reach and activate the latch. If the latch is located lower than 54 inches (1372 mm), the code's prescriptive location requirements preclude the latch from being activated by small children who are not on the pool side of the gate.
9. Many residential settings with backyard pools use the dwelling as a portion of the barrier required around the pool, such as where the fence bounding the property terminates at the dwelling. This limits access to the pool by unsu-



pervised children around the perimeter of the fence, but there is still a potential for children to access the pool from within the dwelling. Indeed, almost half the children involved in drowning or near-drowning accidents gained access to the pool from the dwelling.

The provisions of this section restrict such access by small children and are applicable to all doors in walls that form a portion of the barrier required around swimming pools.

Protection of such door openings to pool areas can be achieved in any one of the methods described in Items 9.1 through 9.3. The first alternative does not require protection of the exterior door itself but limits access to the pool by means of a power safety cover. The performance criteria specified when this option is selected assures that the power safety cover is an adequate and reliable barrier to the pool. In Item 9.2, the alarm is configured to allow adults who are accessing the house to open the door, enter the house and deactivate the system to prevent a false alarm. The touchpad used to deactivate the system must be mounted 54 inches (1372 mm) above the floor, which is presumed to be beyond the reach of small children.

Item 9.3 permits doors to pool areas to be protected by devices that render the door self-closing and self-latching. Any other requirements would be performance based because the code requires equivalency only with Item 9.1 or 9.2. One possible criterion could require the release mechanism for the latching device to be located a minimum of 54 inches (1372 mm) above the floor, which is presumed to be beyond the reach of small children. In addition, doors protected by the method specified in Item 9.3 should probably open away from the pool area. This is so that if the door failed to latch, a child outside the pool area pushing against the door would cause it to close and not swing to an open position.

10. The code permits the wall of the pool itself to serve as the barrier to the pool, if the wall extends at least 48 inches (1219 mm) above the finished ground level around the perimeter of the pool. Unless it can be secured, locked or removed, the ladder must be surrounded by a complying barrier to limit access to the ladder.

AG105.3 Indoor swimming pool. Walls surrounding an indoor swimming pool shall comply with Section AG105.2, Item 9.

❖ Indoor pools represent the same hazards as outdoor pools. For this reason, the walls and doors surrounding an indoor swimming pool are regulated in the same manner as an exterior wall of a dwelling where the wall is used as a barrier for an outdoor pool. The provisions of Section AG105.2, Item 9 apply in their entirety.

AG105.4 Prohibited locations. Barriers shall be located to prohibit permanent structures, *equipment* or similar objects from being used to climb them.

❖ The purpose of a swimming pool barrier would be defeated if children could climb on benches, planters, pumps and similar permanent features adjacent to the barrier and gain access to the pool area. Therefore, the area adjacent to the barrier must be carefully designed and constructed to avoid such a condition. This provision is performance in character and must be reviewed on a case-by-case basis.

AG105.5 Barrier exceptions. Spas or hot tubs with a safety cover which complies with ASTM F 1346, as listed in Section AG107, shall be exempt from the provisions of this appendix.

❖ The provisions of this appendix chapter are not applicable to spas and hot tubs where an approved safety cover serves as the protective barrier. The requirements of ASTM F 1346 contain a number of criteria so that the safety cover can provide a level of protection that is equivalent to that provided by a swimming pool enclosure barrier. The following requirements are representative of several of the specifications found in the standard:

1. There should be a means of fastening the safety cover to the hot tub or spa, such as key locks, combination locks, special tools or similar devices that will prohibit children from removing or operating the cover. The fastening mechanism, design and location are vital components that help prevent a child's entry to the water.
2. The safety cover should have a label that provides a warning and message regarding the risk of drowning. The label is also very important for the transfer of information to second owners and temporary users.
3. The cover should have been tested to demonstrate that it is capable of supporting the weight of one child [50 pounds (23 kg)] and one adult [225 pounds (102 kg)] so an adult and a child can be supported during a rescue operation.
4. There should be no openings in the cover itself or at any point where the cover joins the surface of the hot tub or spa that would allow a child's head to pass through. The 4-inch (102 mm) spacing for guards in Section R312 and openings in pool enclosures of Section AG105.2 is also applicable.
5. Safety covers are to be installed in accordance with the manufacturer's instructions.

**SECTION AG106
ENTRAPMENT PROTECTION FOR SWIMMING
POOL AND SPA SUCTION OUTLETS**

AG106.1 General. Suction outlets shall be designed and installed in accordance with ANSI/APSP-7.

❖ Vacuum devices for suction inlet systems in pool water circulation are a safety hazard. Body entrapment or hair entrapment can cause drowning and evisceration. Therefore it is important that protection be provided against possible entrapment at the pool entrances to suction inlets and that vacuum relief be provided for the vacuum system. The referenced standard, ANSI/APSP-7 provides requirements intended to prevent entrapment.

**SECTION AG107
ABBREVIATIONS**

AG107.1 General.

ANSI—American National Standards Institute
11 West 42nd Street
New York, NY 10036

APSP—Association of Pool and Spa Professionals
NSPI—National Spa and Pool Institute
2111 Eisenhower Avenue
Alexandria, VA 22314

ASCE—American Society of Civil Engineers
1801 Alexander Bell Drive
Reston, VA 98411-0700

ASTM—ASTM International
100 Barr Harbor Drive,
West Conshohocken, PA 19428

UL—Underwriters Laboratories, Inc.
333 Pfingsten Road
Northbrook, IL 60062-2096

❖ This section sets forth the full names and addresses of organizations that develop standards referenced in this appendix chapter. The abbreviations for the names of the organizations are used throughout the code text.

**SECTION AG108
STANDARDS**

AG108.1 General.

ANSI/NSPI

ANSI/NSPI-3-99 Standard for Permanently Installed Residential Spas AG104.1

ANSI/NSPI-4-99 Standard for Above-ground/
On-ground Residential Swimming Pools. AG103.2

ANSI/NSPI-5-2003 Standard for Residential In-ground Swimming Pools. AG103.1

ANSI/NSPI-6-99 Standard for Residential Portable Spas AG104.2

ANSI/APSP

ANSI/APSP-7-06 Standard for Suction Entrapment avoidance in Swimming Pools, Wading Pools, Spas, Hot Tubs and Catch Basins. AG106.1

APPENDIX G

ASCE

ASCE/SEI-24-05 Flood Resistant
Design and Construction AG103.3

ASTM

ASTM F 1346-91 (2003) Performance
Specification for Safety Covers and Labeling
Requirements for All Covers for Swimming Pools,
Spas and Hot Tubs AG105.2, AG105.5

UL

UL 2017-2000 Standard for General-purpose
Signaling Devices and Systems—with Revisions
through June 2004 AG105.2

❖ The seven referenced standards found in this appendix chapter are listed in this section.