

Ceiling Heights

- Baseline information
 - There are a number of items to determine if a room is habitable, ceiling height is one of them.
 - Paul went over in the webinar on how to calculate occupancy the other items.
 - This webinar is going to focus solely on ceiling height and the requirements for different areas in your structure.
 - For everyone's knowledge, ceiling height code requirement is one code in the City of Hagerstown Property Maintenance Code with 4 exceptions.
- What is the code requirement?
 - All habitable spaces, which are spaces used for living, sleeping, eating or cooking, including hallways, corridors, laundry areas, bathrooms, toilet rooms and habitable basement areas are to have a ceiling height of not less than 7 feet.
- Why is the ceiling height requirement 7 feet?
 - There are several factors for the ceiling height requirement of 7 feet must be met to be considered habitable space.
 - One reason being necessary is to provide an adequate volume of air for occupants in closed spaces. Think about it, lower ceilings, less air space in a residence.
 - Next reason is for fire safety. You could be thinking, what does ceiling height have to do with fire safety. A study that was published in 1969 which has been a model for calculating smoke fill in a room related to the ceiling height and room width. There is a calculation for the proper ceiling height for the size of a room to give you the most time to safely escape from your home.
 - Our code does not go into this calculation but does take it into consideration with the blanket 7 foot rule. Let's take a moment and think about it. The average person is 6 foot or less. Smoke build-up that can occur while you are sleeping goes to the ceiling. If you hear the smoke alarm go off, the first thing you will do is get up/stand up from where you were. When you do this, any smoke build up on the ceiling will now be lower. The lower the ceiling, the closer it is to a person inhaling air. You could inhale smoke and then suffer from smoke inhalation making it hard for you to breathe or even pass out. The goal is for you to hopefully exit the home on your own power and lower ceiling heights can create a fire hazard for you.
 - Lastly, there is a psychological well-being aspect of having proper ceiling heights.
- A comment we get from time to time is how old is your code because this ceiling height requirement is hard to meet. The code we currently use was adopted in 2008, based on the 2003 International Property Maintenance Code. The property maintenance code takes into consideration older homes while establishing a minimum standard to meet safety regulations but here is something to consider.

- In 1955 to minimum ceiling height requirement was 7 feet 6 inches according to the Building Code that was being enforced by Hagerstown at that time.
 - The property maintenance code from 1981 to mid-1990s established a minimum ceiling height of 7 feet 4 inches in Hagerstown.
 - So based just based on adoptions of codes in Hagerstown, we have lowered the minimum standard to 7 feet.
 - Based on many studies conducted by experts, this will most likely be the lowest a ceiling height will ever be permitted, which some exceptions.
- Like I just mentioned, there are exceptions to the 7 foot ceiling height rule and we are going to go through the 4 exceptions in the property maintenance code.
- The first exception is:
 - In one and two family dwellings, beams or girders spaces NOT LESS THAN 4 feet on center and projecting not more than 6 inches below the required ceiling height.
 - We must remember this exception is for one and two family homes only. This exception is not permitted in three or more unit structures.
 - Alright, lets break this down for a better understanding. First thing to go over is the last part of the code, required ceiling height. The ceiling height must still be 7 feet. This exception permits projections below the required ceiling height.
 - Next, the projections are to be at least 4 feet apart from center to center. We get asked at times, can't we count the joist cavity space. The answer is not, because the spacing has to be at least 4 feet on center. Joists are typically 16 inches. If you looking to remove joist to meet this exception, a building permit is required and you must have engineer calculations and design for the permit application.
 - The last part of this exception is the allowable projection into the ceiling height requirement. The projection can be no more than 6 inches below the required ceiling height. As shown in the diagram, you can see this is typically referring to beams and LVLs.
- The second exception is:
 - Basement rooms in one and two family dwellings occupied exclusively for laundry, study or recreation purposes, having a ceiling height of not less than 6 feet 8 inches with not less than 6 feet 4 inches of clear height under beams, girders, ducts and similar obstructions.
 - Again, like the last exception, this is only permitted in one and two family dwellings. Multi-family dwellings of three or more do not allow for this exception.
 - As we first mentioned, laundry rooms are specifically mentioned as needing 7 feet of ceiling height but in a basement area, this exception permits ceiling heights down to 6 feet 8 inches. This is the minimum requirement for the basement utilized for laundry purposes and not as habitable space.
 - This exception does allow the ceiling height to be lower under beams, girders, ducts and similar obstructions but only under those areas, not for the entire ceiling height. So if you have a beam, duct, or other item that projects into the 6 foot 8 inch requirement,

they are permitted but must have a clearance of less than 6 feet 4 inches from the bottom of that projection to the floor.

- This exception in one and two family homes is for basement laundry rooms like we mentioned but also for basement recreation rooms and basement studies. Now, a study is not a bedroom. As Donnie mentioned in the means of egress or emergency escape webinar, a basement bedroom requires an emergency escape. A study is not a bedroom and cannot be used as one. A study is a room that is used from paperwork, computer work, or reading; not for sleeping.
- This lower ceiling height is permitted in this area because this area would only be used occasionally and will not adversely affect the occupants' health or safety
- The third exception is specifically for laundry rooms in multi-family structure of 3 or more residential units.
 - This exception allows ceiling heights down to 6 feet 8 inches in basement laundry rooms used exclusively for laundry purposes.
 - There are the same permitted projects of beams, girders, ducts and similar obstructions and the measurement from the bottom of the projection to the floor must be no less than 6 feet 4 inches.
 - If you happen to have a recreation or reading room in the basement of a multi-family structure, the ceiling height for these rooms must be 7 feet. This exception is only for laundry rooms.
 - This lower ceiling height is permit like in the previous exception, the space is only used occasionally and will not adversely affect the occupants' health or safety.
- The fourth and last exception to the 7 foot ceiling height requirement is this and it is going to sound complicated at first but we are going to break it down to hopefully provide a better understanding.
 - This is how the exception reads, rooms occupied exclusively for sleeping, study or similar purposes and having a sloped ceiling over all or part of the room, with a clear ceiling height of a least 7 feet over not less than one-third of the required minimum floor area. In calculating the floor area of such rooms, only those portions of the floor area with a clear ceiling height of 5 feet or more shall be included.
 - We know, that is a lot of information and I am going to try an break each aspect down for you to get a better understanding.
 - First, this is for sleeping and study rooms only. No other rooms are permitted to have a sloped ceiling.
 - This exception allows for sloped ceilings, it was created to permit habitable spaces in 1 ½ story structures or also 3rd floor habitable attics. Paul will be covering habitable 3rd floor spaces in more detail next week.
 - So we have an exception for sloped ceilings but there are other items in this exception. First thing we must look at this the overall room design.
 - As in the diagram, most of the habitable spaces we come across have a finished ceiling surface from the peak to the floor. But by this code exception, we can only consider space to as low as 5 feet. Meaning, once the sloped ceiling height

from the ceiling to the floor is less than 5 feet, we can no longer consider this area part of the room.

- We must also look at the ceiling height; the ceiling height must be at least 7 feet for one-third the room area.
- Let's break this one down a little bit further:
 - The best way to do this is by using an example.
 - If we have a room that is 12 feet wide, 4 feet of the room width must have a ceiling of 7 feet.
- We hope you have a little bit better of an understanding when it comes to ceiling heights. Our office does take into consideration original home designs and their ceiling heights but there have been very few incidents of a ceiling height less than 7 feet on original design. Most of the time, spaces that have lower ceiling heights were converted after the home was original constructed and many times the conversation was done without permits.
- There are ways to meet the 7 foot requirement at times and not raise the roof or lower the floor. As always, please consult with our office prior to making any alterations. Inspectors can always provide you guidance on a situation to help you become compliant.
- FAQ
 - Common question, if I don't meet the ceiling height, can I just rent to short people?
 - This is always a no. The size of the occupant does not permit occupancy of the space. The space itself must meet the code so no matter who occupies the space, it meet code and is safe to occupy.
 - If I have a space with original design and it doesn't meet the 7 foot ceiling height, are there other requirements I might have to meet?
 - These are always case-by-case. The best thing to do is set up an on-site meeting with an inspector to come up with options.