

Cistern requirements

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The original inclusion agreement between Colorado Sierra and Roosevelt Ridge specified 2 30,000 Gallon Cisterns. Based on the following information it is the position of Timberline Fire that if an agreed upon construction plan can be developed Timberline is willing to reduce that requirement to one Cistern containing a minimum of 30,000 Usable gallons.

Timberlines currently adopted fire code it the 2006 IFC. Appendix B section B103.3 states in areas without water supply systems "The fire code official is authorized to utilize NFPA 1142 or the International Wildland-Urban Interface Code." To determine water requirements.

Section 404.5 of the 2006 Wildland-urban interface code states "Adequate water supply shall be determined for purposes of initial attack and flame front control by the local jurisdiction. NFPA 1142 may be used as a reference."

2015 International Wildland-Urban Interface Code states "The required water supply for one and two family dwellings have a fire flow calculation area that does not exceed 3600 square feet shall be 1000 gallons per minute for a minimum duration of 30 minutes." Equaling 30,000 gallons

Below is the NFPA 1142 calculation.

Based on a 3600 square foot 2 story single family residence. This is the largest structure that can be built without fire sprinklers per Gilpin County Code. I have use the worst case scenarios for this calculation including that the structure has exposure risk to another structure or more likely in our scenario the forest.

1800 square feet per floor X 10+10+5 = 45,000 cubic feet. Assuming 10 foot high ceilings and an average attic height of 5 feet. Occupancy Hazard Class 7. Construction Class 1.5 and a 1.5 multiplier for the exposure hazard.

$(45000/7) \times 1.5 \times 1.5 = 14,464$ Gallons

Per ISO a cistern with a capacity of 30000 gallons or higher "can be mapped and recognized as a hydrant" smaller cannot. This could be beneficial to homeowners in the area.

In summary Timberline feels that one 30000 gallon cistern will be sufficient.

Thank you

Paul Ondr, Fire Chief

Timberline Fire Protection District

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