

**PHOENIX REGIONAL
STANDARD OPERATING PROCEDURES**

Roof Sector

M.P. 202.06

09/18

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Purpose

This procedure identifies the responsibilities and objectives of the Roof Sector.

Properly coordinated vertical ventilation of a building is important to the success of fire control operations and the safety of firefighters and victims.

Command should establish a Roof Sector during offensive fire operations to evaluate roof conditions and to complete vertical ventilation. Ladder companies should be strategically placed to allow safe access to the roof, emergency exit from the roof, and in tactical positions that would permit effective defensive operations if needed. Roof Sector responsibilities will be assigned to company or chief officers who must be on the roof to supervise crews.

Safe Roof Sector operations are paramount. Roof Sector crews must enter the roof from an established safe area and should have a secondary means to escape the roof, or to a safe refuge on an unexposed and structurally sound roof surface. The Roof Sector will be responsible for obtaining its own protective hose line as needed.

The first personnel reaching the roof must quickly evaluate conditions to assure the roof is structurally sound before attempting to work on it. The degree and extent of any signs of weakness must be considered before committing personnel above the fire. Once on the roof, the sector officer and sector personnel must evaluate their route and progress as they proceed out on the roof. A constant re-evaluation of roof safety must be maintained throughout roof operations. Time and fire conditions will be constantly working to weaken the roof.

The Central Arizona Life Safety System Response Council (CALSSRC) has a minimum standard operational procedure for the safe and efficient vertical ventilation operations. Crews must be familiar with the procedure and all actions on the roof must adhere to the procedure. These procedures specify type and size of the vent hole(s), sequence of cuts, and clearly define the roles of individual crew members.

Commercial vs. Residential

There is a distinct difference in construction design between commercial and residential roof systems and it is important that Roof Sector is aware of the differences that potentially have an impact on roof operations.

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Bowstring Roofs

No fire fighter shall operate on or under a bowstring roof if there is any evidence that the fire has penetrated the attic, involves the trusses or the structure in anyway. When the fire involves a room or contents with no evidence of structural extension, a quick, aggressive, offensive strategy is appropriate.

Metal Roofs

Buildings with metal roofs have the potential to limit roof operations if the pitch of the roof as determined by the Ladder Company Officer assigned to ventilation, is too steep to safely operate on. Once the Ladder Company Officer evaluates the roof, the decision to operate on it or not will be communicated to Command.

Residential Tile Roofs

No fire fighter shall operate on the roof of a residential structure fire covered with concrete roof tiles. Alternatives to roof (vertical) ventilation should be addressed.

Commercial Tile Roofs

CALSSRC has a standard operation for the safe and efficient vertical ventilation operations on commercial tile roofs. Crews must be familiar with this standard operation and all actions on the roof must adhere to this operation (see <http://www.phoenixfireops.com/ladder-ops> for more information). Extreme caution must be used when operating on commercial tile roofs.

Roof Sector Duties

The initial Roof Sector Officer must report to Command the following conditions:

- Roof design and construction (e.g. flat, peaked, bowstring, etc.)
- Decking material (i.e. wood, metal, or concrete)
- Structural conditions (effects of fire on roof)
- Smoke/fire conditions
- Locations of fire walls and presence of skylight
- Locations of heavy objects that are affected by fire conditions
- Ventilation plan

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The objectives for Roof Sector operations include:

- Determining a safe working surface
- Complete ventilation cuts to achieve effective ventilation
- Coordinate/Communicate roof (vertical) ventilation with interior crews
- Coordinate roof fire control operations as directed by Command
- Maintain roof-top monitoring of roof structure and fire conditions; during vertical ventilation operation and exit the roof as soon as vertical ventilation objectives are achieved
- Provide progress reports to Command.

It may be necessary to establish a Roof Sector in a position remote from the fire-involved roof to keep a watchful eye on roof conditions, where imminent collapse will occur. Such a location may be an elevated ladder platform or adjacent building.

Vent holes should not be made larger. Once a standard size ventilation hole is cut and cleared, the crews must move away from that area. In some cases, more than one hole will be required to sufficiently ventilate the structure. As one hole is opened, the Roof Sector should cut additional holes a safe distance away. Crews must move from the first hole towards safer areas with each consecutive ventilation hole.

Caution. Additional holes consume time. The Roof Sector Officer must constantly evaluate the structural stability of the roof as it relates to changing fire conditions and time.

The Roof Sector officer must monitor the radio at all times.

The Roof Sector Officer must advise Command when ventilation holes are completed and report on the fire conditions in the structure below the vent hole. This report should include the following:

- Presence or absence of fire in the attic (if there is no fire in the attic, then presence of active fire)
- If no fire then smoke conditions (e.g. heavy, light, none, etc.)
- Any change in the roof conditions and/or structural stability

All Roof Sector personnel shall wear full protective clothing and equipment when operating above a fire. SCBA with face pieces connected will be worn at all times while operating above a fire.