AIRE Bulletin

Mulch and Landscape Fire Prevention

Mulch fires can develop with little warning and spread quickly from landscaped areas to nearby buildings, creating a significant property and life safety exposure. These fires may smolder undetected before visible flames, smoke alarm activation, or sprinkler system response alerts occupants or emergency responders. This bulletin outlines the key hazards associated with mulch fires and highlights practical landscaping, placement, and maintenance practices that can help reduce the potential for property damage, operational disruption, and injury.

Mulch is a popular landscaping material due to its horticultural value, availability, price, and its aesthetic value. Mulches fall into two main categories, organic and inorganic. Organic mulches usually consist of pine needles, wheat straw, pine bark nuggets, shredded cedar and redwood bark, and other recycled wood chips. Inorganic mulch consists of non-plant material such as rock, gravel, and brick chips, which can be categorized as hardscape. In general, organic mulches have the potential to be more combustible than others.

Notable Mulch-Related Fire Incidents

Several significant mulch-related fires illustrate the potential severity of exterior ignition events and their impact on occupied structures.

- In April 2021, a residential fire in Aldie, Virginia, began in newly installed landscape mulch next to the home. The fire caused extensive damage, displaced the occupants, and resulted in an estimated $1.36 million property loss, including minor damage to two neighbouring homes. No injuries were reported.
- In May 2015, a fire at a large apartment complex in Arlington, Virgina originated in a landscaped area and rapidly extended to the building, resulting in one fatality, destruction of 36 apartment units and six vehicles, and an estimated $6.7 million property loss. The building was not protected by an automatic sprinkler system.
- In April 2012, a fire that began outside an assisted-living facility in Braintree, Massachusetts spread quickly and forced the early-morning evacuation of numerous elderly residents, several of whom were treated for smoke inhalation injuries.
- Earlier, in May 2008, a similar exterior fire at an apartment complex in Peabody, Massachusetts caused approximately $6.7 million in damage, temporarily displaced 750 residents, and permanently displaced 36 individuals.

In 2021, incident Fire officials determined that the mulch ignited during hot, dry weather and rapidly spread up the exterior wall into the structure. In other fire incidents, Investigations show that similar high-loss fires often originate in landscape mulch beds due to improperly discarded smoking materials, illustrating how small exterior ignition sources can escalate into major, life-safety-threatening fires when combustible landscaping is placed near buildings without adequate controls.

Tips for Property Managers, Building Owners, and Landscapers

Mulch fires often start when mulch is placed close to buildings. The risk increases during dry weather, low rainfall, hot temperatures, and strong winds. Because smoking is not allowed indoors in many places, people smoke outside and sometimes throw cigarette butts into mulch beds. These discarded materials can easily start a fire. Research shows that mulch is more likely to ignite when it is exposed to heat for a longer period or encounters an ignition source. Many mulch fires begin below the surface, slowly burning underground before breaking out into open flames.

Preventing mulch fires starts with understanding weather conditions that increase fire risk and make people aware of early warning signs. Educating the public and encouraging safe practices can help reduce the chances of these fires starting. Landscapers do not always have to resort to using inorganic materials such as brick chips and gravel as ignition resistant ground cover if proper precautions are taken, regardless of what type of organic mulch is used.

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Key hazard characteristics include:

- Maintain a minimum 18-inch clearance between landscape mulch beds and combustible building components such as wood siding, vinyl siding, decks, and fences. Embers often accumulate adjacent to structures, providing an ignition source for combustible materials.
- Use non-combustible materials (e.g., rock or pea stone) in lieu of mulch around gas meters, utility equipment, and other combustible portions of the structure.
- Do not apply mulch too thickly. Deep mulch layers can trap heat as the material naturally breaks down, which may cause it to ignite on its own. Large piles of mulch or wood chips can build enough internal heat during decomposition to start a fire without any external source.
- Make employees aware on designated smoking locations and the increased fire risk associated with smoking near buildings, including the hazards of improper disposal of smoking materials.
- Use non-combustible smoking receptacles only to dispose of cigarette waste, positioned at least 18 inches from buildings; keep these areas free of mulch, empty receptacles regularly, and never mix cigarette waste with combustible trash.
- Avoid the use of mulch at building entrances, high-traffic pedestrian areas, designated smoking areas, or adjacent to buildings with EIFS and/or wood siding.
- Ensure grounds and maintenance personnel are aware of conditions that may increase the risk of mulch ignition (hot, dry, windy weather) and increase surveillance of mulch beds during such periods.
- Keep mulch beds moist when feasible, particularly during prolonged dry spells, to reduce ignition potential.
- Ensure electrical devices and cords are rated for outdoor use and maintain proper clearance by following manufacturer instructions, including using only the specified bulb size and wattage for yard and decorative lighting.

Mulch fires pose a serious risk to nearby buildings due to their tendency to smoulder unnoticed and spread rapidly to adjacent structures. Once a fire occurs, the impact often extends well beyond physical damage. Post-fire repairs can be costly and time-consuming, delaying re-occupancy and a full return to business operations. Many businesses also experience loss of customers, difficulty retaining key employees, and reputational damage that can affect long-term stability. Apart from the best practices outlined in this advisory, please check with your local fire authority for guidance on the best types and proper use of mulch in your area, as well as to ensure compliance with applicable fire and building codes specific to your location.

Arch Insurance Risk Engineers (AIRE) Bulletin

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