COMPLIANCE ASSISTANCE PROGRAM
SPOKANE REGIONAL CLEAN AIR AGENCY
Info

Stack Cap Requirements

To reduce air pollution, Spokane Regional Clean Air Agency (Spokane Clean Air) has exhaust stack requirements depending on the type of operation and equipment used.

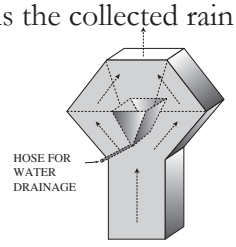
Surface coating operations (e.g. paint booths, etc.): Emissions are required to exhaust through unobstructed, vertical stacks. The top of the stack must be at least 6 feet above the penetration point of the roof. If a stack cap (sometimes called a rain guard) is installed, there are specific designs that meet air quality requirements (see below).

Other operations (e.g. baghouse, boiler, coffee roaster, cyclone, emergency generator set, etc.): Spokane Clean Air recommends that emissions exhaust through unobstructed, vertical stacks. If a stack is required to be "UL listed" and includes a cap that does not meet Spokane Clean Air's recommendations, your operation may be subject to limits on hours of operation to ensure compliance with air quality regulations.

Approved Stack Caps — Below are examples of stack cap designs that have been approved by Spokane Clean Air. **Other designs may be submitted to Spokane Clean Air for approval prior to construction and installation.**

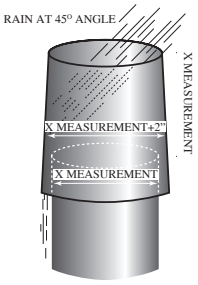
1. Hexagonal Stack Cap

This design diverts air around an internal wedge used to catch rain. A hose is connected to the bottom of the wedge which drains the collected rain water.



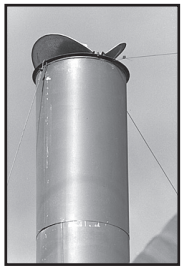
2. Stack-in-a-Stack Cap

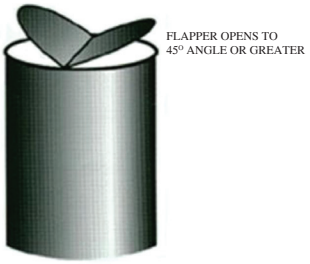
This design is based on the principle that rain falls at an angle. The inner stack is surrounded by an outer stack with space between the two. Rain runs down the inside wall of the outer stack, instead of down the inside wall of the inner stack and into the equipment being vented.



3. Hinged Stack Cap

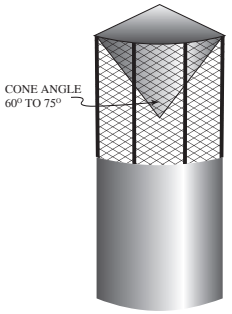
A hinged flapper damper opens to a 45 degree angle or greater when the equipment is running and closes when turned off. A booster fan may need to be installed to help push open the flaps.





4. Inverted Cone Stack Cap

Grating or brackets support the cone which is suspended above the stack opening. The cone helps prevent rain from entering the stack. The angle of the cone must be 45 degrees or greater.



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Where Can I Get Stack Caps?

Some companies specializing in mechanical contracting or sheet metal ducting also make stack caps. These companies can be found in the phone book, under "Mechanical Contractors" and "Sheet Metal Work."

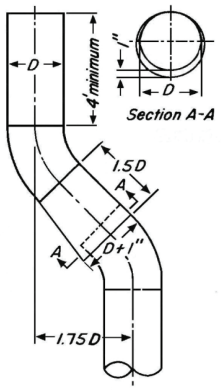
Some stack caps are part of a larger system, such as a furnace, that comes as one package that is "UL listed" as meeting building code requirements. **If the stack has a cap, it is very important to provide Spokane Clean Air with design drawings or photos of the cap at the beginning of the air quality permitting process to ensure correct air pollution modeling.** If the cap obstructs the flow of exhaust, you may need to:

- Change the cap to an approved design to allow for unobstructed flow of the exhaust.
- Limit hours of operation.

Stack Configurations

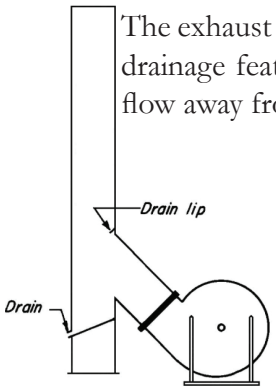
Instead of installing a stack cap to prevent rain or snow from entering the stack, another option is to install a stack that allows precipitation to drain from within the stack. There are two common configurations:

1. Offset Elbow Stack:



The stack is offset using an elbow. The base of the elbow is enlarged at the bottom to create an opening that allows it to function as a drain. Rain runs down the inside wall of the stack and drains from the opening at the base of the elbow.

2. Offset Stack



The exhaust source is offset from the stack and drainage features in the stack direct any water flow away from the exhaust source.

About Us

Spokane Clean Air administers state, federal and local regulations for managing air quality in cities, towns and unincorporated areas of Spokane County. Spokane Clean Air staff inspect air pollution sources, issue permits, monitor ambient air quality and educate the public about air quality.

Spokane Clean Air was formed under the 1967 Clean Air Act of Washington (Chapter 70.94 RCW), which required larger counties within the State of Washington to activate local air pollution control authorities. There are seven local air agencies in the state, plus the Air Quality Program within the Washington State Department of Ecology.

For more information, call (509) 477-4727 or visit www.SpokaneCleanAir.org.

Spokane Regional Clean Air Agency

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