Ventilation requirements

Notice: Inadequate ventilation will ultimately result in component failure that may not be covered under warranty.

Signs require obstruction-free space for adequate air ventilation between solid mounting surfaces and the top, bottom, and sides of the sign. This is required for all wall, monument, and pole mounted signs. Refer to “Wall mounting” on page 27, “Monument Mounting” on page 28, or “Pole mounting” on page 30 for more details.

Always take into consideration other neighboring heat sources such as backlit signs, lighting sources, etc. and add additional ventilation when needed.

Note: Shading the back of the sign will enhance thermal performance.

Adaptive Explains

How does the sign cool itself?

Although the sign cases are completely enclosed with no forced air ventilation, the sign does rely on natural convection to cool. The top and back of the sign case use these surfaces as heat sinks to cool the inside cabinet temperatures. An internal mixing fan helps cooling by mixing the air inside bringing it all to a more uniform temperature or isothermal.

The sign is enclosed to keep out contaminants and prevent corrosion and dirt buildup, which adversely affects the sign’s performance and interferes with the sign’s ability to cool itself.

What is natural convection?

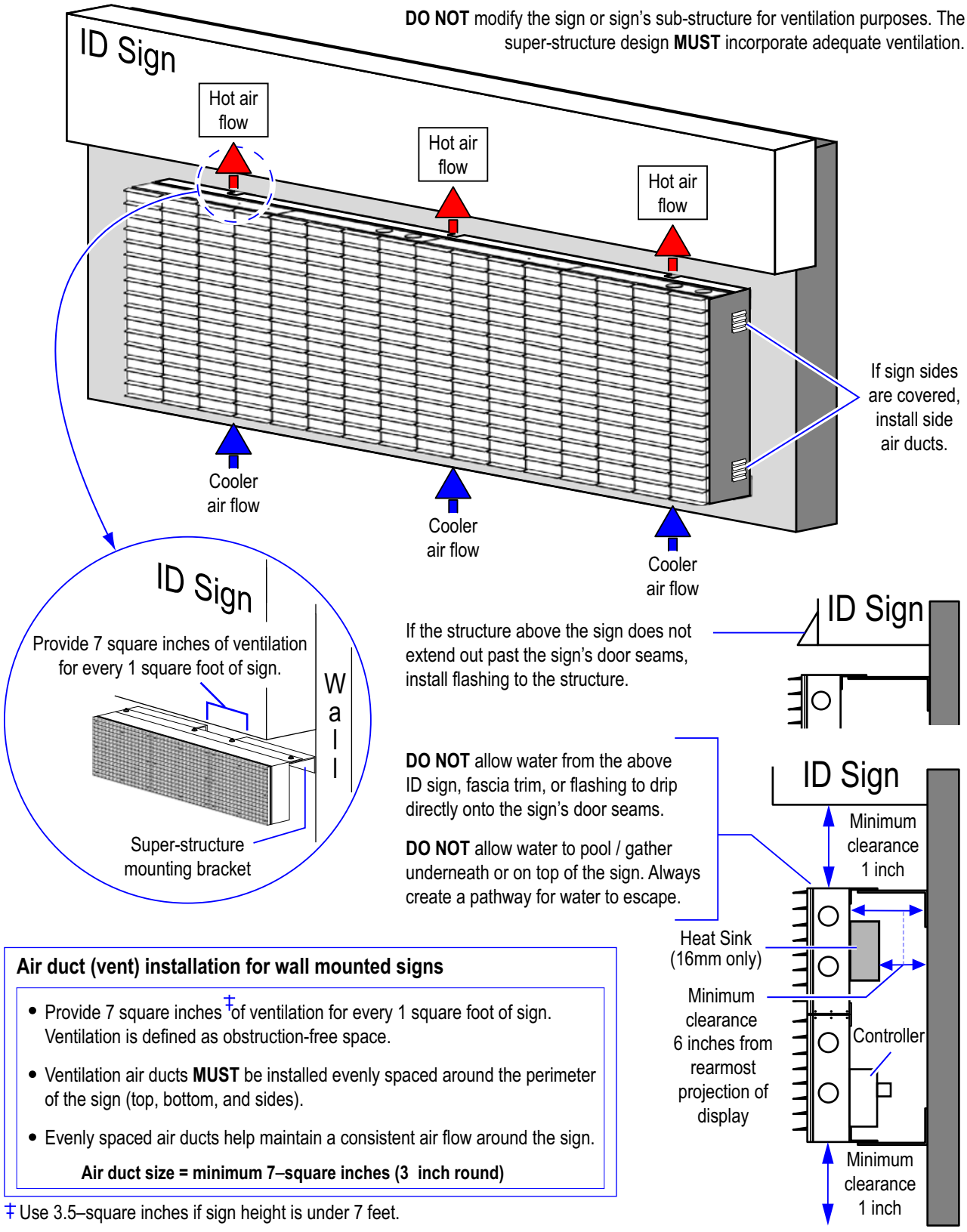
Natural convection is a type of heat transportation. In natural convection, air surrounding a heat source receives heat, becomes less dense and rises. The surrounding, cooler air then moves to replace it. This cooler air is then heated and the process continues, forming a convection current.

For every installation provide adequate ventilation or the sign warranty may be void:

- **DO NOT** mount air ducts (vents) directly to the sign or sign’s sub–structure.
- **DO NOT** modify the sign or sign’s sub–structure for ventilation purposes (see Figure 26 on page 32). The super–structure design **MUST** incorporate adequate ventilation.
- Provide 7–square inches of ventilation for every 1–square foot of sign. For signs under 7–feet in height use 3.5–square inches for every 1–square foot of sign. Ventilation is defined as obstruction–free space.
- Ventilation air ducts **MUST** be installed evenly spaced around the perimeter of the sign (top, bottom, and sides). Evenly spaced air ducts help maintain a consistent air flow around the sign.
- Air duct size **MUST** be a minimum of 7–square inches (equivalent to a 3–inch round air duct).
- If the sides of the sign are covered (enclosed), install a minimum of two air ducts in each side covering.
- Provide a minimum clearance of 1–inch above and below the sign.
- Provide a minimum clearance of 6–inches behind the sign.

Wall mounting

Signs require obstruction-free space for adequate air ventilation between solid mounting surfaces and the top, bottom, and sides of the sign.



Air duct (vent) installation for wall mounted signs

- Provide 7 square inches ‡ of ventilation for every 1 square foot of sign. Ventilation is defined as obstruction-free space.
- Ventilation air ducts **MUST** be installed evenly spaced around the perimeter of the sign (top, bottom, and sides).
- Evenly spaced air ducts help maintain a consistent air flow around the sign.

Air duct size = minimum 7–square inches (3 inch round)

‡ Use 3.5–square inches if sign height is under 7 feet.

Figure 21. Ventilation requirements around a wall mounted sign

Monument Mounting

If there is an obstruction on the outside of the sign (as in a monument-style installation), care must be taken to assure the sign is able to cool. Air ducts **must** be used in the monument to allow air to flow behind the sign. When monument mounting an Excite sign, use air ducts to help hot air escape. For back to back sign configurations refer to “Ventilation diagram for back–to–back sign configurations” on page 89 for details.

Note: Adaptive recommends the installation of fans to force hot air out of the air ducts.

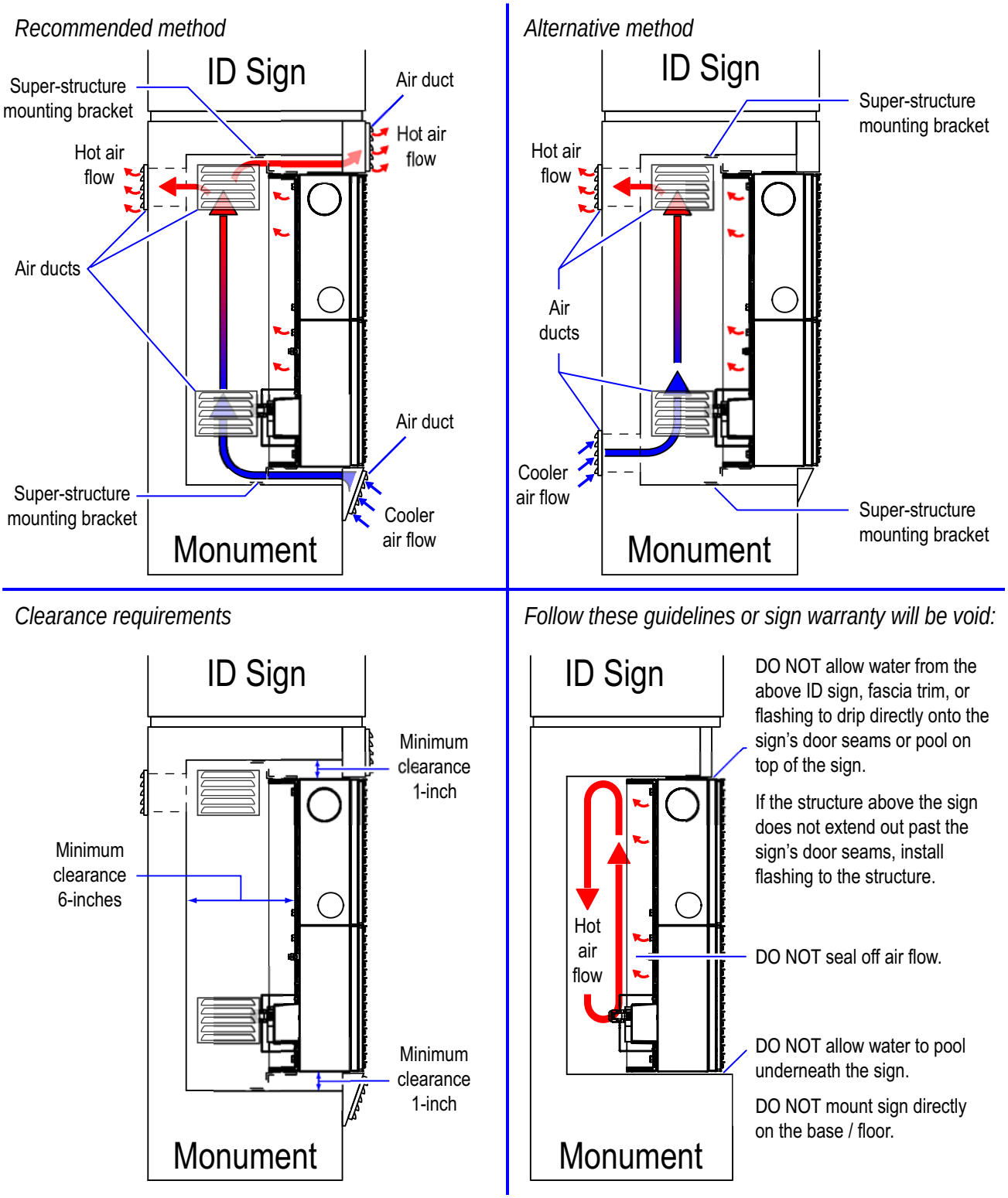


Figure 22. Use air ducts when monument mounting.

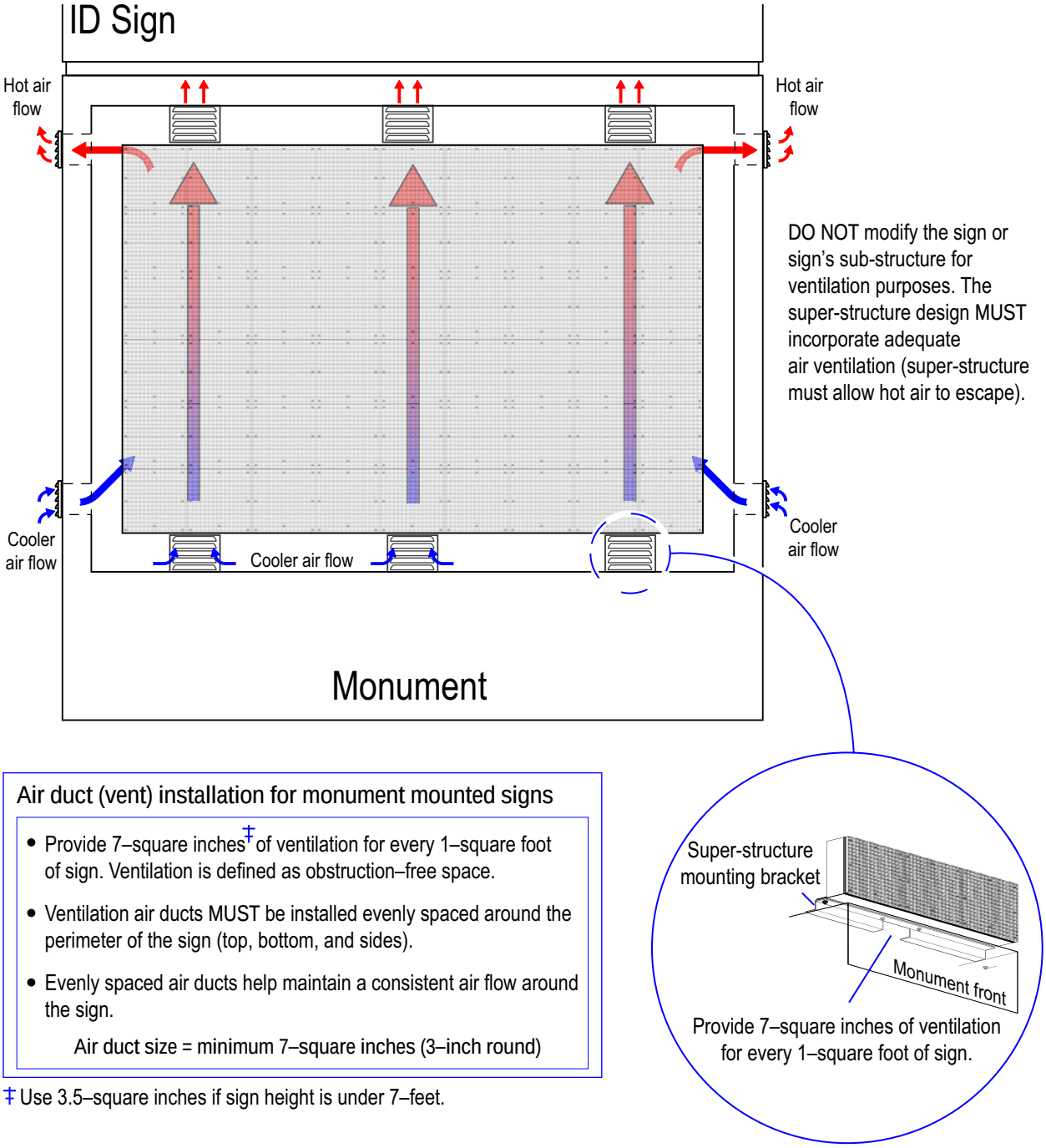


Figure 23. Monument air duct placement.

Pole mounting

Signs require obstruction-free space for adequate air ventilation between solid mounting surfaces and the top, bottom, and sides of the sign.

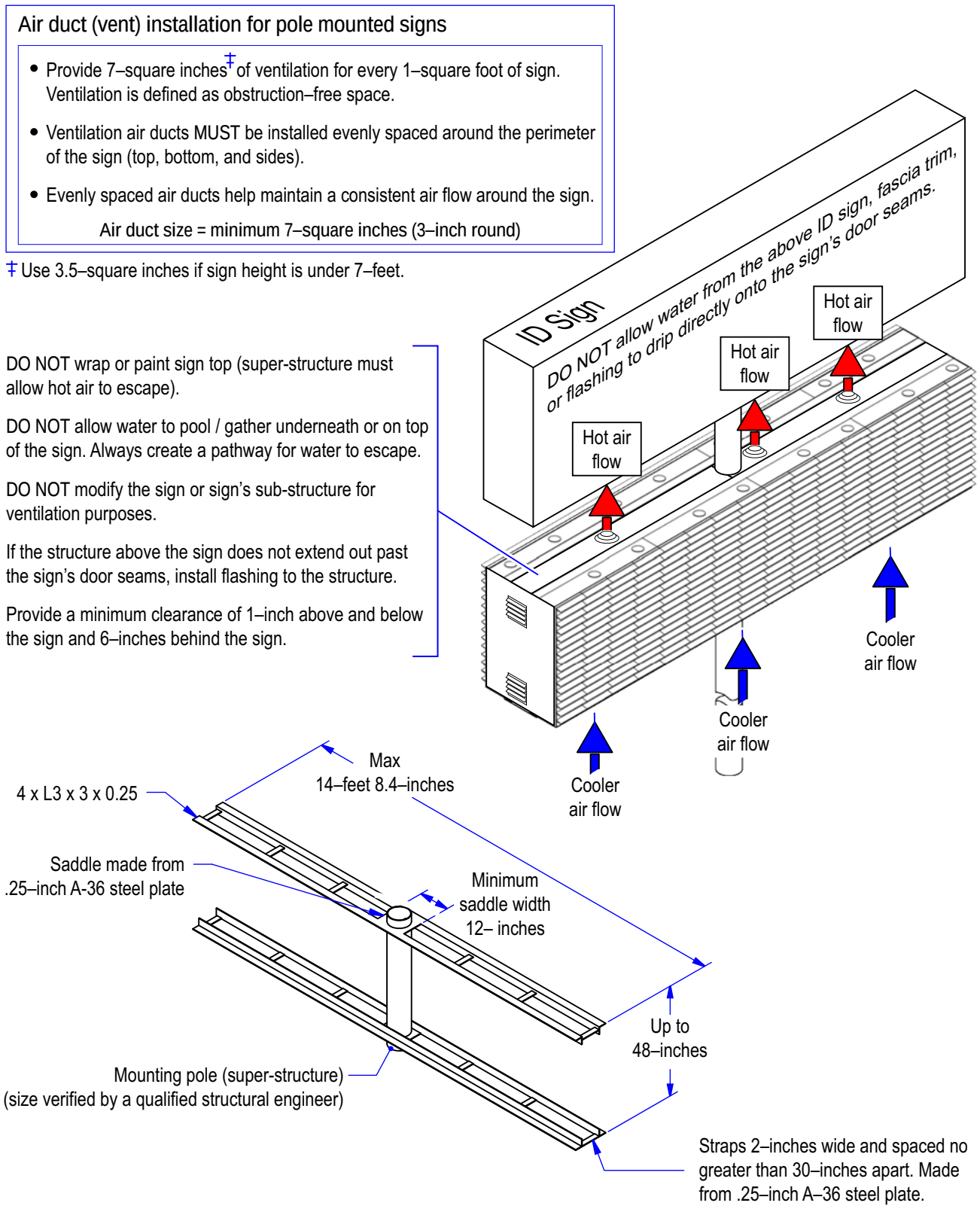


Figure 24. Pole mounting an Excite sign.

Lifting the sign

WARNING! Crush hazard. Improperly assembling or lifting a sign can create a crush hazard.

Do NOT use eyebolts to lift an assembled sign. They are designed only to lift a sign section from its shipping crate.

Lift the sign evenly and level, with no more than a 15 degree tilt.

Use a lifting bar adjusted to the width of the lifting hardware on the sign to raise the shippable section. After mounting the sign sections, remove the lifting hardware or corrosion to the sign may occur. **Failure to follow these instructions will void the warranty.**

1. Lift the sign section up to the super-structure.
2. Position the sign section on the super-structure.

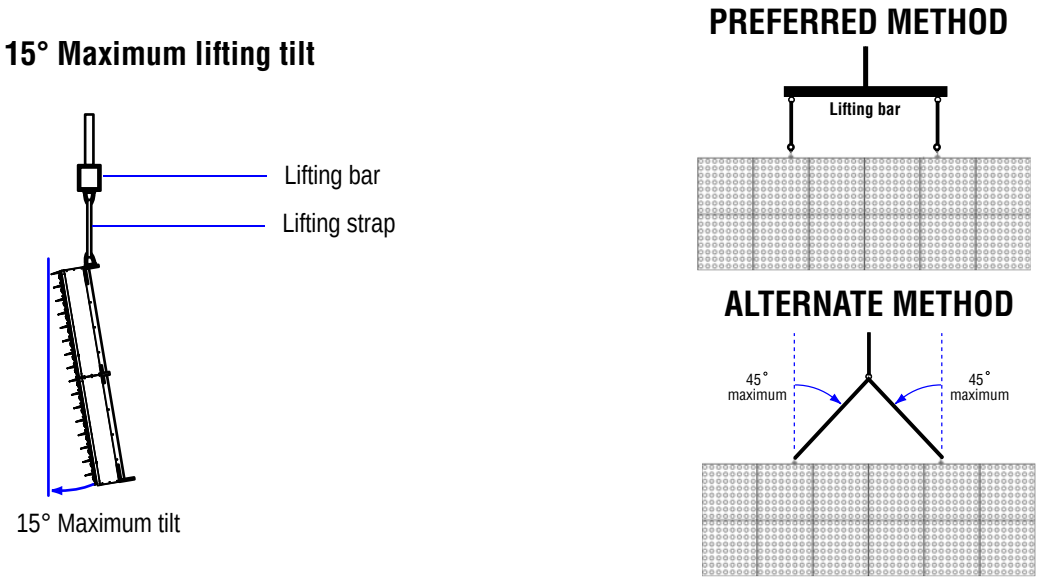


Figure 25. Sign section lifting methods

Mounting the sign to the super-structure

The methods used to mount a sign to a super-structure vary greatly. It is the installer's responsibility to ensure that the installation complies with all national and local codes.

Notice: Drill holes as needed in the sign's sub-structure for fasteners. Only drill holes into the sign when field upgrade instructions or Adaptive's Technical Service Department explicitly states to do so. Drilling holes in the sign under any other circumstance will void the sign's warranty.

When drilling holes or welding the sign's sub–structure, follow these guidelines or the warranty will be void:

- **DO NOT** drill additional conduit holes through the controller plate in the control case.
- **DO NOT** drill additional conduit holes along the bottom of the case, because water may pool there.
- **DO NOT** use the sign's ground-lugs for grounding installation equipment such as welding equipment.
- **DO NOT** weld any part of the sign except for the sign's sub–structure.

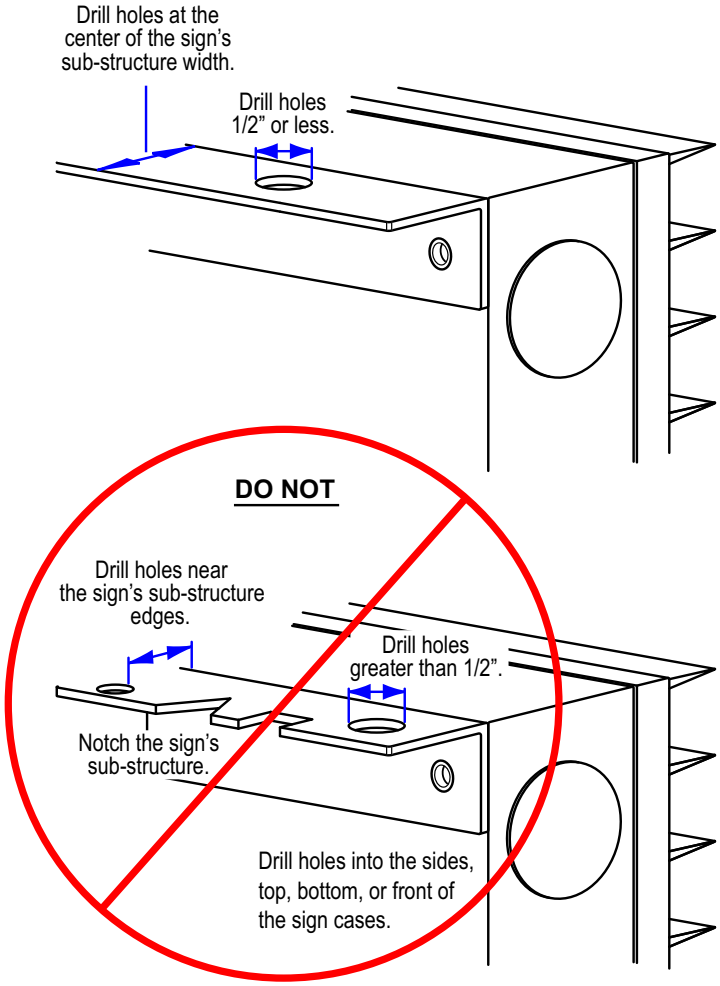


Figure 26. Drilling guidelines

Notice: Dissimilar metals must be isolated to avoid galvanic corrosion.

Any area on the sign's frame from which paint is removed during mounting, must be recoated with paint that is UL recognized to standard UL-1332, category DTOV2. Failure to repaint the area will result in accelerated corrosion of the sign's structure. Adaptive Micro Systems is not responsible for any failure in the sign's structure because of accelerated corrosion. Failure to comply will void the sign's warranty.