

TECHNICAL BULLETIN

Closed Faced Downspouts vs Open Face (three sided) Downspouts in Colder Climate Regions

In colder climates that are prone to frequent icing, an open face (3 sided) downspout is a favorable and practical design in lieu of closed face (fully enclosed) downspout.

As roof runoff pouring into gutters and scupper heads freeze on colder days, ice formations occur within the downspout tube. During the constant cycle of freezing and thawing, a solid ice formation may be created within the downspout tube blocking passage of runoff, much like a clogged kitchen sink drain. When this occurs within a fully enclosed downspout, runoff is trapped and backs up into the gutters or scupper heads, eventually backing up onto the roof. This back-up has the potential to create pools of water and ice on the roof, thus creating many issues related to roof failure due to improper drainage. Expansion and contraction as well as the weight of the of the ice block within the downspout can also cause damage to the downspout itself, creating rips in the material, stress on the downspout and gutter or scupper head due to the weight of the ice block, or even failure of mechanical fasteners at the joints and outlets, thus causing the downspout system to fall.

Utilizing an open face (3 sided) downspout design minimizes the chances of ice damming within the tube as it is exposed as the sun and salt (lower region near parking lots). Should any sort of ice formations occur, runoff still has a route around the ice block preventing, back-up into the gutters or scupper heads, and onto the roof.

The NRCA provides a short recommendation on this subject in their Roofing and Waterproofing Manual - 5th edition, page 500, 2.3.4 Downspouts. It states, “Three sided downspouts are suggested in regions where ice formations may block and/or damage fully enclosed downspouts.”

Metal-Era supplies both open and closed faced versions of downspout, and can be sized to meet specific project requirements.