

Insulation Fasteners

When you're using insulation fasteners there are so many choices and decisions to make. Will you be fixing insulation in the field? Will you be applying insulation in the fab shop? Will you use adhesive pins? Will you use a mechanical attachment method? Will you weld? If you're welding, will you weld before or after the insulation is applied? Which weld pin tip style is best for welding? Will you use an automatic machine?

All of these questions, and more, are important when it comes to choosing the appropriate insulation fastener. This edition of Tech Tips will focus on the different options available and the key points to consider when making your decision.

Insulation Fastener Types

Welded fasteners

- Weld on after insulation is attached
 - Weld-Ons: spherical weld tip with flat or cup-style washer that is welded on after insulation attachment
- Weld on before insulation is attached
 - Spot-Ons: weld pin that is welded on before insulation is attached, with a washer that is installed after insulation attachment

Mechanical fasteners

- Grip-Ons: labor-intensive process used with hammer to drive double-claw nail tips through insulation to sheet metal, which will fold back to securely grab the sheet metal duct surface

Adhesive Fasteners

- Stik-Ons: 2" x 2" base with adhesive to attach to duct surface prior to insulation being attached – labor intensive due to cleaning surface and removing backing paper prior to applying to duct surface

Weld-Ons™

Weld-Ons are predominantly used in a fabrication shop setting. The flat and cup-style washer head lend these styles ideal for use with automated weld-pinning equipment. The Weld-Ons can also be used manually with a portable welder.

The Weld-Ons have several key design features that are important to appropriate weld strength and balance of productivity.



Carbon alloy steel

- Weld-Ons are manufactured from carbon alloy steel, an alloy that quickly hardens from the heating and cooling during the weld process. This gives a quick, strong weld, which allows for faster manufacturing speed.

Sharp spherical point

- Weld-Ons are manufactured with consistently sharp spherical points to ensure positive contact when welded to sheet metal. The point of the welding pin is hardened in a unique cold-form process that gives the point a steel temper, which, unlike other welding pins, will not blunt or flatten when applied. The sharper point of contact results in easier penetration through the insulation material, a better weld, a consistent welded length, and creates fewer sparks to ignite adhesives or burn substrates.

Spherical versus chisel point

- The spherical sharp point allows the heat from the welding process to be focused into as small an area as possible. This gives a solid weld without inducing excess heat around the weld area and minimizes the impact to the duct sheet metal without blowing through the metal or causing deformations. The chisel point weld pins can have a ridge to weld in place of the point. This broadens the welding area and requires more heat, which can cause burn-through and deformation of the duct sheet metal.

Washer

- Weld-Ons are manufactured with either a flat or cup-style washer head. The size and placement of the washer gives positive contact with the insulation and is large enough to keep the insulation from pulling loose at the weld pin locations. Additionally, the cup-style washer is designed to sufficiently depress the insulation surface without tearing it.

Spot-Ons™:

Spot-Ons can be used in a fabrication shop or on the jobsite when replacing missing fasteners or damaged or worn insulation. Spot-Ons and companion clips are a convenient, proven method for fastening insulation blanket or board to sheet metal. Spot-Ons are ring-shanked pins, made of 14-gauge low carbon steel, annealed and zinc-plated. Spot-Ons can accommodate ½"-2½"-thick insulation.



Grip-Ons™:

Grip-Ons can be used in a fabrication shop or on the jobsite when replacing missing fasteners or damaged or worn insulation. Grip-On pins are made with nail tips that have a double claw which, once pierced through the sheet metal duct, will fold back to securely attach to the duct. The nail tips are hardened but yet soft enough to perform the appropriate attachment without shattering.



Stik-Ons™:

Stik-Ons can be used in a fabrication shop or on the jobsite when replacing missing fasteners or damaged or worn insulation. Stik-Ons are 14-gauge steel insulation pins that are permanently staked through 2" x 2" galvanized steel base plates. A pressure-sensitive adhesive backing provides a permanent bond between the pin and sheet metal duct. Stik-Ons can be used to hold all low- and medium-density insulation and insulation board in applications where the temperature will not exceed 180°F (82°C). Stik-Ons utilize a companion clip that attaches over the pin to hold the insulation.

Summary:

Weld pins, whether they are Weld-Ons or Spot-Ons, require investment in the appropriate welding equipment. However, the speed of application and quality of installation with weld pins are unsurpassed. Mechanically attaching insulation fasteners, whether they are Grip-Ons or Stik-Ons, do not require investment in welding equipment but the speed of application will be longer. Therefore, when deciding which insulation fastener is right for your job, consider the combination of installation quality, speed of application and cost to determine your best option.