



4 METHODS TO IMPROVE SEAL & GASKET INSTALLATION

COOPER STANDARD
INDUSTRIAL & SPECIALTY GROUP

INTRODUCTION

When it comes to seal and gasket installation, there are many techniques that can be used to promote efficient assembly.

Cooper Standard Industrial and Specialty Group (ISG) offers a wide range of capabilities to increase efficiency and throughput, including mechanical connections, adhesives, corners & frames and coatings.

This e-book explores several manufacturing processes that can help optimize seal and gasket installation in a variety of applications.

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MECHANICAL CONNECTIONS

Dual-Durometer Extrusions



A dual-durometer extrusion can provide a seal with excellent compression set and a dense base that allows it to be easily inserted into a channel. Cooper Standard Industrial and Specialty Group (ISG) co-extrudes EPDM, silicone and plastic into a variety of shapes to form a consistent cross section.

Push Pins



Push-pin seals provide an alternative to standard laminated seal methods. Pins are spaced according to customer design requirements allowing for a quick and efficient installation process.

iDea® Seal



Cooper Standard ISG's proprietary co-polymer design features a custom or standard EPDM bulb bonded to a rigid plastic base. The result is a seal with strong performance properties that will easily slide into a channel and will not stretch.

Plastic Extrusions



In some designs, a rigid plastic extrusion may be affixed to a seal allowing it to clip or grip on to a component during installation. This can improve ease of assembly and reduce the need for adhesives.



ADHESIVE OPTIONS

In most cases, the use of adhesive tapes can eliminate mechanical fastening systems (staples, nails or retaining clips) and the inherent problems associated with them, i.e. cost, weight and breakage. They can improve productivity during the final assembly process by providing a faster, more efficient way of attaching seals and gaskets to your product.

Pressure Sensitive Adhesives (PSA)

There are three primary PSA joining systems used most widely today: double-coated paper and film tapes, double-coated foam tapes and adhesive transfer tapes. Each system offers specific benefits depending upon the surfaces to be joined, the strength of the bond required and environmental factors such as temperature, ozone/ weathering and chemical resistance.



Extrusions that use adhesive tapes

Learn more about adhesives in our [Sealing Design Guide](#).

Types of PSA Adhesives



— Adhesive
— Carrier
— Adhesive
— Liner

DOUBLE-COATED PAPER & FILM TAPES

Made up of a layer of adhesive, a paper or film carrier, another layer of adhesive and a release liner.

Benefits: Ideal for high-volume assembly processes and can be configured to be used on opposing carrier surfaces to join different materials.



— Adhesive
— Liner

ADHESIVE TRANSFER TAPES

The same capability as a double-faced product, but does not have a carrier.

Benefits: Without a reinforcing carrier, the adhesive is extremely pliable and can be used on substrates that are conformable.



— Adhesive
— Foam
— Adhesive
— Liner

DOUBLE-COATED FOAM TAPES

Composed of a layer of adhesive, a foam carrier, another adhesive layer and a release liner.

Benefits: These tapes are conformable and can join irregular surfaces. They dampen sound and provide impact resistance.

Heat-Activated Tape

Heat-activated tapes are constructed by layering materials together that include: an OEM-applied heat-activated adhesive, an acrylic foam core, a high-performance acrylic adhesive and a polyolefin release liner.

These tapes feature a heat-activated adhesive layer that provides a secure and durable bond to the extruded profile and adheres to a wide range of materials.

Gaskets utilizing these tapes provide excellent performance at both high and low temperature conditions. The tapes are high-performance formulations designed to meet a variety of requirements, including holding power, UV light stability, moisture resistance, salt spray resistance and more.



— Heat-activated adhesive
— Acrylic foam core
— High-performance acrylic adhesive
— Polyolefin liner



LOW FRICTION COATINGS

Low friction coatings can improve part installation and enhance aesthetics. **Assembly aid coatings** reduce friction during installation processes. They are applied as a thin film as part of the extrusion process and are an efficient way to add value.

Assembly aid coatings contain a low solids content, are available in clear only and are not intended to resist abrasion.

Performance coatings contain a higher solids content, which provides abrasion resistance and can extend part life. Cooper Standard ISG's performance coatings provide balanced properties suitable for a variety of applications and are available in clear and black.

Cooper Standard ISG has the ability to coat an entire part or a localized area. Our coatings contain no free silicone that could affect paint systems.



An extrusion with assembly aid coating



CORNERS & FRAMES

By installing a seal or gasket as a single component, you may be able to significantly reduce the need for splicing and adhesives during the assembly process. This saves time and helps eliminate the potential for leaks.

Corners can be fabricated into a variety of configurations through molding. **Transfer molded corners** yield the ultimate performance. Rubber is injected under high pressure to connect two pieces into a complete corner. This creates a strong bond and superior sealing performance.

Custom molded details can enhance the functionality, performance, appearance and longevity of products as well as reduce shock and vibration, dampen sound, provide insulation and improve chemical/UV resistance. Proper tooling enables this complex process to work for tight tolerance requirements.

Available in custom or standard profiles, **continuous corner seals** are designed with the flexibility to wrap a corner and compression properties that require minimal closing force.



Transfer molded corners



Molded end details



Continuous corner seals

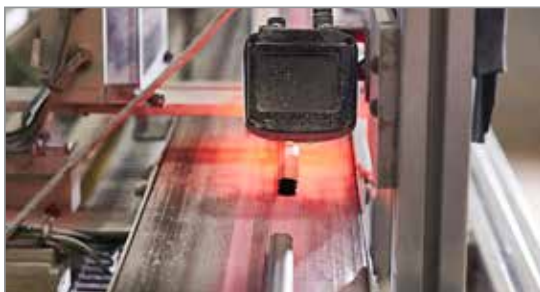


PROMOTE EFFICIENT INSTALLATION

Rely on Cooper Standard ISG's versatile manufacturing capabilities and design expertise to develop seals and gaskets that promote efficient installation. Our application and process engineers can help determine an appropriate installation method for your end-use application and manufacturing requirements.

For more unique installation solutions, check out the below case studies.

The Need for Precision Marking



[READ CASE STUDY](#)

Designing a Custom Curtain Wall Gasket



[READ CASE STUDY](#)



LEARN MORE

From selecting materials to part design, Cooper Standard ISG's engineers work directly with you to solve problems. Get in touch to learn how you can improve your next project.

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