TAPE INNOVATIONS

How to master your lead time while procuring die-cut gaskets and custom components

Die-cut adhesive-backed gaskets have turned the impossible into reality.

Over the decades, innovations in tapes, foams and film have translated into untold billions in savings for OEMs. Just to name a few, these materials have taken the place of screws, welds and fasteners, enabled designers to significantly reduce the volume and mass of finished products, shorten assembly times and reduce the dependence on highly skilled labor.

The search for the right gasket materials and the process to die-cut them can take you down the information rabbit hole. Rather than losing hours poring over technical data sheets, you can spend your time preparing your project for a technical review at Tape Innovations.

In the following we'll walk you through what to expect with die-cutting flexible materials, and how we designed our tried-and-true approach to die-cutting flexible materials to help you minimize lead times without sacrificing quality.

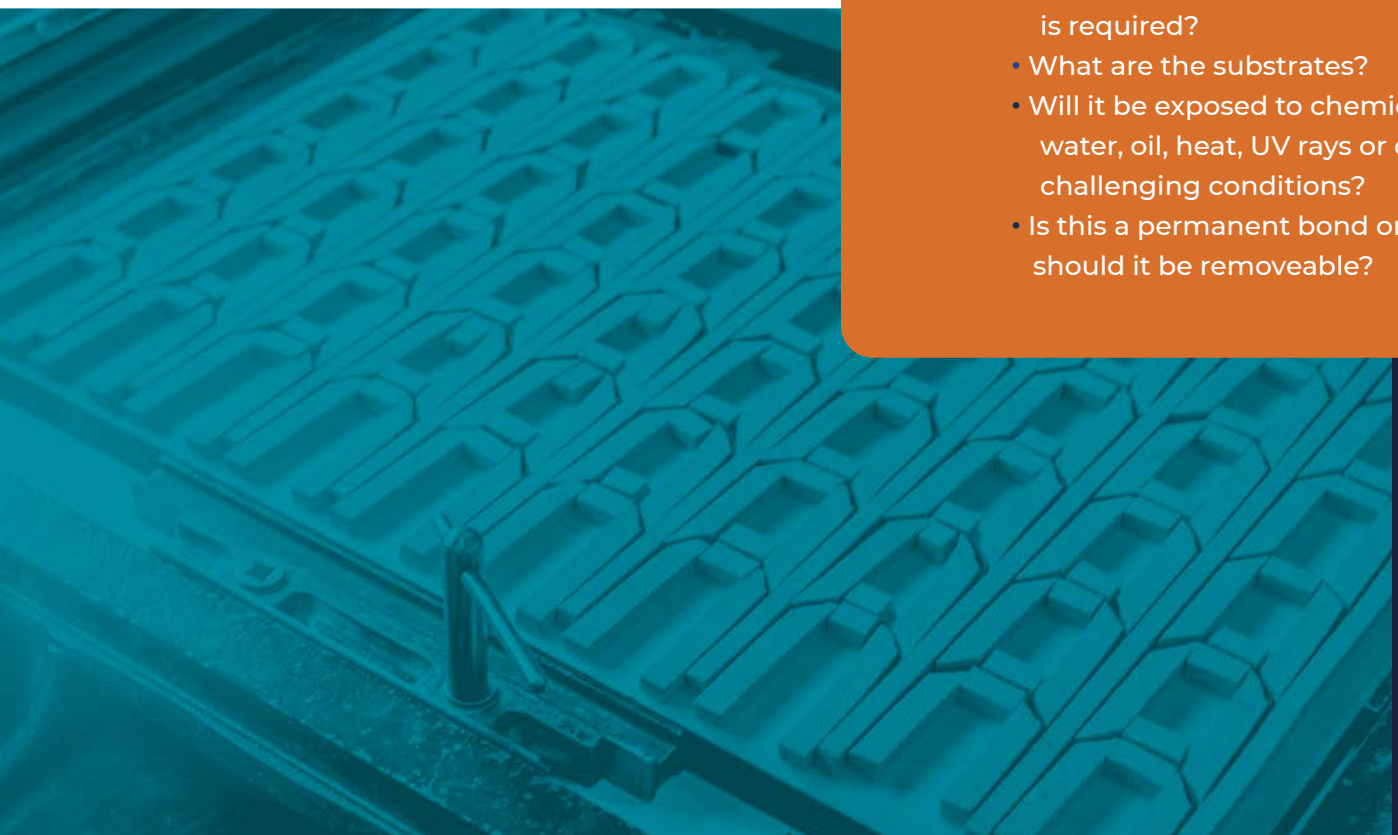
1. Expert technical review

Before we choose the material and the die-cutting process, we begin with a diligent technical review to ensure it checks the boxes of all performance requirements.

Why? Precision in material selection is crucial at this step, because even the smallest miscalculation can significantly extend your lead time — that's an outcome we strive to avoid.

Key data points for our technical review:

- What problem is the component solving?
- Key factors for foam selection:
  - What should this material shield against and to what extent?
  - Moisture, vibration, heat, UV rays, impact and dust.
- Key factors for adhesive selection:
  - What level of bond strength is required?
  - What are the substrates?
  - Will it be exposed to chemicals, water, oil, heat, UV rays or other challenging conditions?
  - Is this a permanent bond or should it be removeable?



2. Resourcefulness: Our suppliers and top brands
Stumped by a tricky design? When you partner with Tape Innovations, there's little that comes our way that is entirely new to us. And even when it does happen, that's not a problem.

When a problem exceeds our abilities, we tap into our network of resources willing to help us zero in on the exact materials that will deliver the performance your product demands.

Preferred partnerships with top brands like 3M, Rogers and Laird provide us access to material engineers who have answers to your most demanding design requirements. We'll set up a conference call to talk through your project and potential solutions.

3. Setting the right priorities
Part of our process is drilling down on your top priorities for the project. Consider areas where there's room for efficiency and what requires maximum diligence. These are valuable opportunities to save time and cost on your project.

As you review various priorities, identify which are critical and what has room for flexibility:

- lead time
- material performance
- production requirements
- quality standards
- tolerance range
- overall budget

4. Tolerance requirements: A less obvious way to unlock efficiency
Engineers and product developers have a healthy appreciation of how small details can have a big impact on cost and production.

To master your lead time for custom converted components, one small detail worthy of your attention is tolerance requirements.

As you know, tolerance defines the range of acceptable dimensions for your custom die-cut shape. Tight tolerances are regarded as a standard of quality, which is why engineers as well as automated design software will often default to the narrowest range.

Challenge:

However, when die-cutting flexible materials, adopting a wider, more generous tolerance range can help you achieve significant savings in lead time and your overall costs. For example, the water-jet method can cut intricate shapes that fit extremely tight tolerances. But when a tight tolerance doesn't have an impact on product performance, this method isn't cost-effective.

Solution:

Tape Innovations' expert design review can help.

To reduce your lead time, come prepared to review tolerance specifications. At Tape Innovation, our engineers will calculate the optimal range for your product, to help us identify the most efficient die-cutting method.

That's how we can save time and reduce your overall costs.

5. Sourcing materials

Sourcing materials is the most critical aspect of reducing lead time — we were all reminded of this reality during the material shortages during the pandemic.

At Tape Innovations, our relationships with multiple brands and suppliers equips us to source your needed materials quickly and efficiently. Again, our Preferred Partnership passes some key advantages on to you. Our access to priority shipping and best-in-industry pricing saves you both time and material expenses.

6. Die-cutting methods: Production perfection

For projects that call for one-of-a-kind shapes, the machining methods we choose will have a significant impact on production time. As we select from our many capabilities, we must also take into account how well it can produce a part that meets your requirements. To demonstrate, we'll run through a quick comparison of die-cutting with software guided methods like water jet and laser cutting.

Software-guided die-cutting (water-jet and laser)	Die-cutting
Minimal lead time to commence production	Requires lead time and upfront expense to source customized die tool
Achieves extremely tight tolerance ranges	Increased material displacement during production, particularly in thicker materials
Increased post-production finishing (i.e. slug removal)	Reduced need for post-production finishing
Reduced overall production throughput	Higher output during a production run
Best ROI: Small batch runs, intricate shapes, tight tolerance requirements as well as samples and prototypes.	Best ROI: Large batch production runs and recurring projects

Entrusting your die-cutting needs with Tape Innovations offers advantages:

Experience: Tape Innovations' engineers have extensive knowledge of materials and how they respond to die-cutting methods to make highly accurate recommendations on the best die-cutting method.

Resources: For custom die-tooling, we have longstanding relationships with top tooling companies that excel in designing and producing top-quality parts.

Broad capabilities: We offer first-article testing to demonstrate our capabilities to produce components as specified.

7. The power of partnership: Our value is always rising

Establishing a long-term relationship with Tape Innovations generates the most value to you. Our business practices are built around the goal of evolving to meet your needs today and well into the future.

Evolution: Our team thrives on creative and technical challenges, while staying abreast of new materials and applications.

Investment: We enhance our production capabilities because we recognize the long-term value of investing back into the company.

Continuous improvement: We systematically review our products, services and processes to identify opportunities to raise our performance. The longer you work with Tape Innovations, the more efficient we become.

Optimized fulfillment: Tape Innovations uses Kanban and efficient vendor inventory management practices to streamline procedures and minimize labor and warehousing expenses. We focus on optimized order fulfillment by synchronizing the arrival of materials with your production requirements. We work hard to support your recurring projects efficiently and effectively. That's why we're an ideal partner for your ongoing custom converting needs.

Conclusion

Die-cut gaskets and tape materials have the power to transform the overall look, design and functionality of your product.

When it comes to achieving your desired results within an acceptable lead time, your choice of custom converter absolutely matters.

At Tape Innovations, building our expertise and focusing continuously on quality and efficiency is how we do business. We designed our process around the goal of making the most of your time.

Unlock the full efficiency of die-cutting and request a quote today.

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