

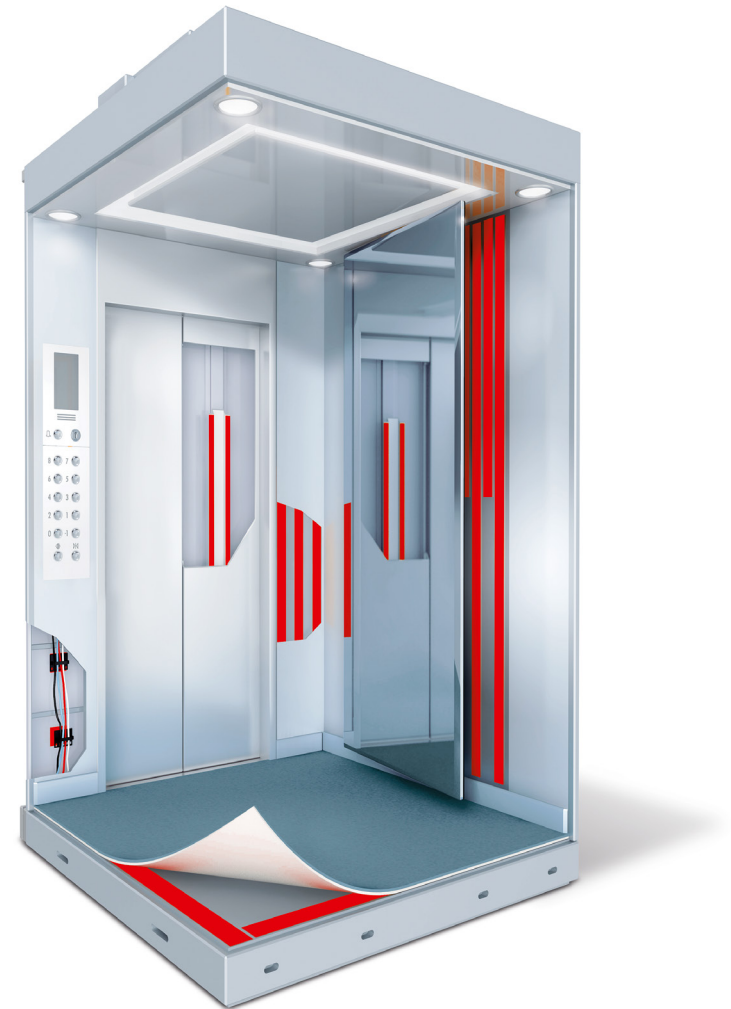
A low-angle, upward-looking photograph of a modern glass elevator shaft. The shaft is cylindrical, constructed from dark metal frames and large glass panels. The interior of the shaft is visible, showing a dark ceiling with several recessed circular lights. The shaft is surrounded by a complex network of metal beams and glass panels, creating a sense of height and architectural detail. The background is a clear blue sky.

# Uplift: Modern Elevator Design Innovation

The biggest trends in modern  
elevator design and engineering

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# Introduction

Elevators are a symbol of progress and innovation, heralding the age of skyscrapers and economic growth. While the underlying concept is relatively simple – moving people or objects from one level to another – the technology that makes modern elevators possible is nothing short of extraordinary.

The tallest elevator in the world, at the [Mponeng Gold Mine in South Africa](#), travels over 2 kilometres into the earth. While an engineering marvel in its own right, such an elevator is far from the public eye and can sacrifice aesthetics and comfort for sheer scale and performance.

Passenger elevators, like those in modern skyscrapers, require mastery of engineering as well as design.

When you step into an elevator today, there is a certain expectation of speed, convenience, and delight – over and above a baseline of safety and functionality. Innovation is essential to meet these expectations.

Thankfully, while the core concept of elevator mechanics remains largely the same, plenty of room for innovation remains. But this requires many factors to align: creativity, engineering

expertise, viable application, financial feasibility, and a reliable supply chain.

Great examples of modern-day innovation in elevator design can be found in leading companies like ThyssenKrupp and Schindler. [ThyssenKrupp's MULTI elevator](#) is a prime example of thinking beyond traditional constraints to house multiple elevator cabins in a single shaft – facilitating shorter wait times, increased capacity, and horizontal travel.

Let's take a closer look at the most exciting trends in modern elevator design and engineering.



# Trends In Elevator Design

## Elevator speed

As buildings get taller, optimising elevator speed will remain a key engineering and design trend. After all, anyone who lives or works in a skyscraper stands to save a significant amount of time over the course of a year if the building's elevators are optimised for speed. But as tempting as it may be to create ever-faster elevators, speed must always be balanced with engineering limitations and the quality of passenger experience. In other words, elevator speed is limited by the passenger experience.

Take Shanghai Tower, for example, which has one of the fastest elevators in the world reaching speeds of up to [20.5 metres per second](#). This speed is only possible on the ascending trip, as the human body reacts differently depending on whether it's going up or down. Any descending speed surpassing 10 m/s will cause rapid pressure changes in the ear canals of the passengers, leading to uncomfortable and potentially painful ear popping.

This leads us to an important insight. As there are limitations around rapid acceleration and deceleration, we need a more sophisticated and holistic approach to elevator speed. Not to maximise, but to optimise.

Optimising speed therefore includes the entire passenger experience: doors opening and closing, acceleration and deceleration, the time it takes for the elevator cabin to arrive once the button has been pressed.



# Trends In Elevator Design

## Elevator fire safety

Passenger safety is integral to every elevator design, but in addition to keeping people safe inside the elevator cabin, the broader elevator system can improve overall building safety. This is because, in the event of a fire, elevator landing doors play a crucial role in preventing the fire from spreading across floors via the elevator shaft. The stiffener bars in landing door must therefore be capable of withstanding immense heat and stress, to retain their shape and structural integrity in the extreme conditions of a fire emergency.

The tesa® 45001 flame retardant foam tape is an optimal adhesive solution to secure stiffener bars in place, helping your building comply with fire protection guidelines. Every component of tesa® 45001 FR tape has fire retardant characteristics: the release liner, the acrylic adhesive, and the foam backing.

The flame retardant acrylic adhesive and flame retardant PE-foam offer excellent bonding strength and great labour productivity compared to alternative adhesives like liquid glues. Furthermore, there is also no risk of physically damaging the stiffener bars or landing doors, which can unfortunately happen with rivets and welding alternatives. The tape is also extremely lightweight compared to alternative flame-retardant bonding products and offers superior shock absorption properties.



[Click here to learn more about tesa® 45001 FR PE foam tape](#)



# Trends In Elevator Design

## Elevator glass interior

Glass elevators offer passengers an experience like no other, offering unobstructed views of a building's interior or the outside environment. One of the most impressive exterior glass elevators is expected to be complete in 2022: [ascending 83 storeys](#) along a corner of the Aon Center in Chicago. Glass elevator projects of this scale will only continue, driven not only by the demand for scenic elevator experiences, but also by advances in elevator engineering, materials, and manufacturing.

Even for elevators in traditional building shafts, without any notable vistas, glass offers a range of aesthetic and functional benefits. This is because glass interiors allow for many unique and creative elevator designs, giving designers freedom to control light, visibility, and colour with great accuracy.

As Caleb Morrison, Vice President of elevator manufacturer [SnapCab](#), [has noted](#), “[Glass] is a beautiful material with a clean, elegant, high-end look. It allows designers and architects to create a lobby or elevator interior that is durable and scratch resistant with incredibly vibrant images, patterns, and colors.”

[Kone's scenic elevators](#) are a great example of glass being used for sophisticated elevator design that amplifies environmental architecture and aesthetics. Encompassing glass cars and hoistways, as well as interiors and accessories, these designs continue to be a force to be reckoned with in the world of elevator design.

This trend is especially relevant today given how accessible glass has become for various elevator designs. This is due in large part to developments in adhesive technology, which facilitate secure long-term bonding for glass panels and accessories. For example, tesa double-sided adhesive tape is a trusted solution for bonding decorative glass panels, with excellent bonding performance on critical surfaces, high initial adhesion, and excellent holding power at elevated temperatures.

At tesa, we have experience helping clients from various industries with their glass positioning and fixation needs. We have a range of [high-performance bonding adhesives](#) that are suitable for this type of application and material, which can be customised for your exact requirements.

[Contact us to find the solution that best suits your needs.](#)



# Trends In Elevator Design

## Touchless technology

Touchless elevator technology has seen increased attention over the last few years as global events placed renewed focus on public health and safety. Many elevators are used by hundreds of different people every day, so without regular sanitation they can serve as a hotbed for interpersonal transmission of viruses and bacteria. Elevator design is therefore adapting to this “new normal” by introducing features that help reduce physical contact with any buttons or components.

The touchless elevator button, for example, has seen development from various players in the industry. Schindler’s touchless button, known as [CleanCall](#), functions as a motion sensor that can replace any touch-based button. OTIS, on the other hand, has taken a different approach with [eCall](#) – a smartphone app that can call and direct any elevator in their Gen2® line. Then there is Thyssenkrupp’s [touchless call and elevator pass](#), which allows passengers to call and interact with elevators using QR codes visible outside each cabin.

An especially innovative addition to the touchless technology landscape comes from hand tracking and haptics software company [Ultraleap](#). They have pioneered a [touchless elevator technology](#) called “Air Push” that lets users navigate and interact with a digital interface using hand gestures, allowing far more control than a basic sensor, without requiring a smartphone.

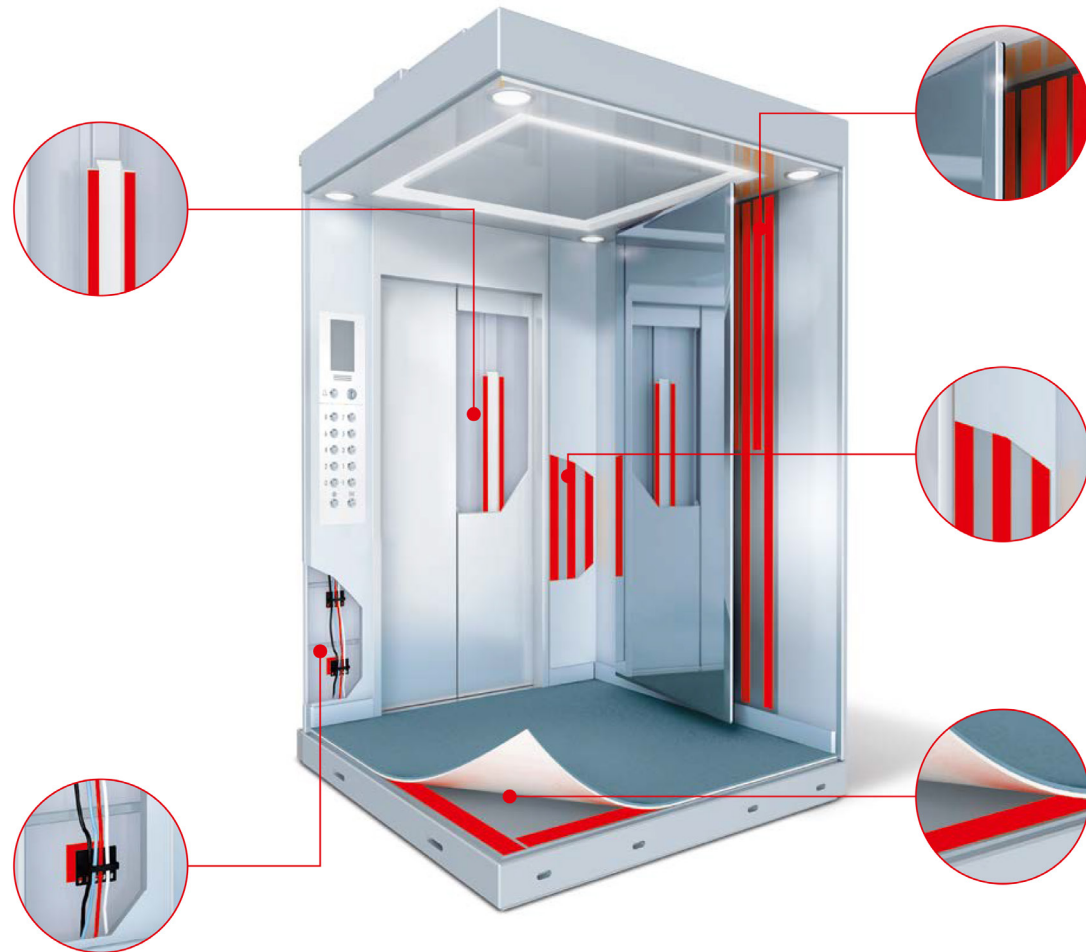
Incorporating touchless technology requires high-performance adhesives that can secure components over a long period of elevator use. Effective display mounting requires robust and reliable adhesive technology, such as that found in tesa double-sided adhesive tapes.

At tesa, we have experience with the [assembly and mounting of all kinds of displays](#). [Contact us to find the solution that best fits your exact needs](#).



# Elevate your design with tesa

At tesa, we're looking to partner with designers and manufacturers who want to take their elevator concepts to the next level. Our double-sided adhesive tapes outperform alternative adhesives, such as liquid glue and mechanical fastening, in areas of design, assembly time and labour, and product quality. For instance, our tapes offer best-in-class performance for shock absorption, noise dampening, speed of application, and stress dissipation, to name a few. Optimal application areas include the mounting of reinforcement bars, mirrors, cable clips, decorative panels, and floor components.
















# Elevate your design with tesa

So how can tesa “elevate” your design?  
The answer lies in two important advantages that we bring to your elevator design and manufacturing process: **production efficiency** and **customisation**.

Using adhesive tapes allows for faster, more **efficient production** processes. This is because, unlike liquid glues, tapes do not need time to dry. This translates into a significant amount of time saved at an industrial scale. Adhesive tapes also do their job without damaging the substrates involved – unlike screws and rivets.

From a **customisation** perspective, tesa has the capability and expertise to provide custom solutions for specific client requirements. This means that, no matter your materials or design, we can create a perfect adhesive solution for your needs.

			Double-sided tapes	Liquid glue	Mechanical fastening (e.g. rivets, screws, nails)
Design		Improved visual appearance – no damage to the material	••••	•••	•
		Invisible fastening – mounting of transparent materials	••••	•••	•
Assembly		Fast application process – elimination of curing time and reduction of complexity	••••	•	••
		Healthy working environment and clean production sites	••••	••	••
Quality		Compensation of irregular or uneven surfaces – gaps between bonded surfaces are eliminated	•••	••••	•
		Compensation of tension and stress dissipation – single bonding point with mechanical fasteners can lead to material breakage	••••	••	•
		Noise-dampening properties – sounds caused by vibration are eliminated	••••	•••	•
		Shock absorption	••••	••	•
		Sealing function – tape seals and protects against dust and moisture	••••	••••	••
		Reduced risk of corrosion	••••	••••	•
					

•••• Very good ••• Good •• Medium • Low

# Let's work on something great

If you have an elevator design challenge, our team of experts can help you solve it. We take great pride in being a partner that brings expertise, quality, and reliability to every business relationship. And with our ongoing support services, you're guaranteed value at every step of the engagement.

If you would like to take your elevator design to the next level, get in touch with a member of the team using the link below. We're ready to help you with a custom best-fit solution for your situation.

[CONTACT US](#)

