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HENKEL TECHNOLOGY SUPPORTS COMPLETION OF THE SAGRADA FAMILIA'S CENTRAL TOWERS

The Structural Adhesive of the Sagrada Familia: How the collaboration between the Sagrada Familia and Henkel has made the tallest basilica in the world possible

Timeline
From Vision to Reality

The history of the Sagrada Familia is that of a project conceived to transcend generations. Construction began in 1882. In 1926, following the death of Antoni Gaudí, the work remained unfinished, yet deeply defined by his vision. For decades, the project progressed gradually, incorporating new technical capabilities that made it possible to bring to life a work far ahead of its time.

In 2015, a key turning point took place: The search began for a technical solution to address the structural bonding between stone and steel in the central towers. From that moment on, an analysis and validation process was set in motion, lasting more than eight months and marking the beginning of a collaboration of over ten years between the Sagrada Familia and Henkel.

Subsequently, the integration of the structural adhesive enabled the implementation of a modular construction system, significantly accelerating the execution process and allowing progress at a rate up to ten times faster than traditional methods.

In 2020, the pandemic forced a temporary halt to the project. Finally, in 2026, the central towers were completed, coinciding with the centenary of Antoni Gaudí's death. On June 10, 2026, exactly 100 years after Gaudí's passing, Pope Leo XIV blessed and inaugurated the Tower of Jesus Christ, marking a historic milestone in the completion of the work.

Introduction
The Invisible Adhesive

The Sagrada Familia is one of the most ambitious works ever built and, at the same time, one of the most complex architectural projects in contemporary history. More than a century after Antoni Gaudí conceived its design, the basilica remains a unique symbol of innovation, vision, and generational continuity.

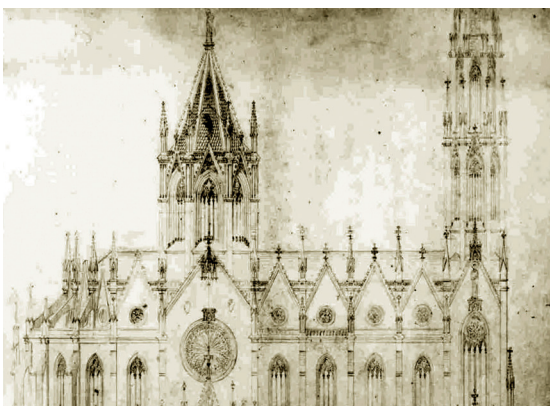

Figure 1. Original design of the Sagrada Familia, created by architect Francisco de Paula del Villar under Neo-Gothic principles, before Antoni Gaudí took over the project and profoundly transformed it.

On June 10, 2026, coinciding with the centenary of Gaudí's death, a historic moment took place: the blessing and inauguration of the Tower of Jesus Christ by Pope Leo XIV. With this act, the six central towers were blessed and inaugurated, and the Sagrada Familia officially became the tallest religious temple in the world and the highest point on Barcelona's skyline.

Following this milestone, one of the most significant and previously unrecognized factors enabling this construction achievement is revealed: **the role of structural adhesives in bonding key materials.**

Because behind the visible grandeur of the basilica lies an essential element that cannot be seen. A silent, yet critical component: the one that **bonds stone and steel and turns both materials into a single structure.**

That element is the adhesive

A hidden component that has been decisive in the construction of the central towers and that represents the true **"invisible hero"** of this project.

The Challenge
Building What Gaudí Envisioned, Using Today's Means

When Antoni Gaudí designed the central towers of the Sagrada Familia, he knew they could not be built in his time.

He was aware that the structural complexity of his vision exceeded the technical capabilities of the era. For this reason, he conceived his project with a clear purpose: that future generations would find the solutions needed to bring it to life.

The completion of the six central towers was of such magnitude that it constituted the greatest structural challenge in the entire history of the Sagrada Familia's construction.

Figure 2. View of the six central towers of the Sagrada Familia, with the Tower of Jesus Christ at the center, crowned by the cross, a structural milestone that has made the basilica the tallest religious temple in the world.

To achieve this, the Sagrada Familia's technical team developed an innovative construction system based on prestressed stone. This modular, precise, and highly efficient approach allows the structure to rise level by level through the integration of carefully engineered stone elements and duplex stainless-steel components, but it also introduced a fundamental challenge: **how to reliably bond stone and steel so they could perform as a single structure.** In **2015**, the team set out to find a solution.

This was not simply about joining two materials, but about ensuring that the entire assembly could withstand extreme loads, accommodate movements caused by temperature variations, resist shear stresses, and maintain its structural integrity over time.

All of this, moreover, within the particularly demanding environment of Barcelona, characterized by its proximity to the sea, high humidity, thermal variations and constant urban vibrations.

Within this context, the prestressed stone system introduced a third essential, yet invisible, element into the structural equation: the **adhesive**. In essence, it is this material that bonds, seals and ensures the structure behaves as a single, solid, and stable whole.

The Search
Defining the Ideal Material

Faced with the complexity of the structural challenge, the Sagrada Familia's engineering team launched a market research process to identify the most appropriate solution. To this end, they developed a detailed technical brief, which was shared with leading companies specializing in materials and structural bonding.

This brief defined, with precision, the performance requirements of the adhesive: it had to be applied in controlled thicknesses of up to 5 millimeters, withstand service temperatures of up to 70°C, maintain a very low coefficient of thermal expansion, and deliver outstanding mechanical performance in both strength and deformation.

Based on these requirements, epoxy resins were identified as the only viable solution. This type of material stands out for its high dimensional stability, chemical resistance, and structural performance – features that make it the ideal choice for bonding applications under extreme conditions such as those of the Sagrada Familia.

However, the project's demands extended beyond identifying a technically suitable material. What was required was a rigorous validation process and, above all, a partner capable of guaranteeing not only the product itself, but also the necessary technical expertise, long-term supply capacity, and support throughout the construction process.

In this context, the proposal presented by Henkel stood out as the most comprehensive solution to meet the project's needs.

The Solution
Henkel's Contribution

Henkel responded to this challenge by leveraging its global expertise in adhesive technologies and its extensive portfolio of solutions under the **LOCTITE** brand.

Based on the Sagrada Familia's technical brief, Henkel's teams analyzed their portfolio of technologies to determine the most suitable adhesive for the project. The objective was not simply to achieve high strength, but to develop a solution capable of delivering balanced performance under real operating conditions.

To better understand this process, it is useful to consider the different ways in which adhesives are classified according to their behavior:

Fundamentals of Adhesive Bonding

Classification of Adhesives for Structural Bonding

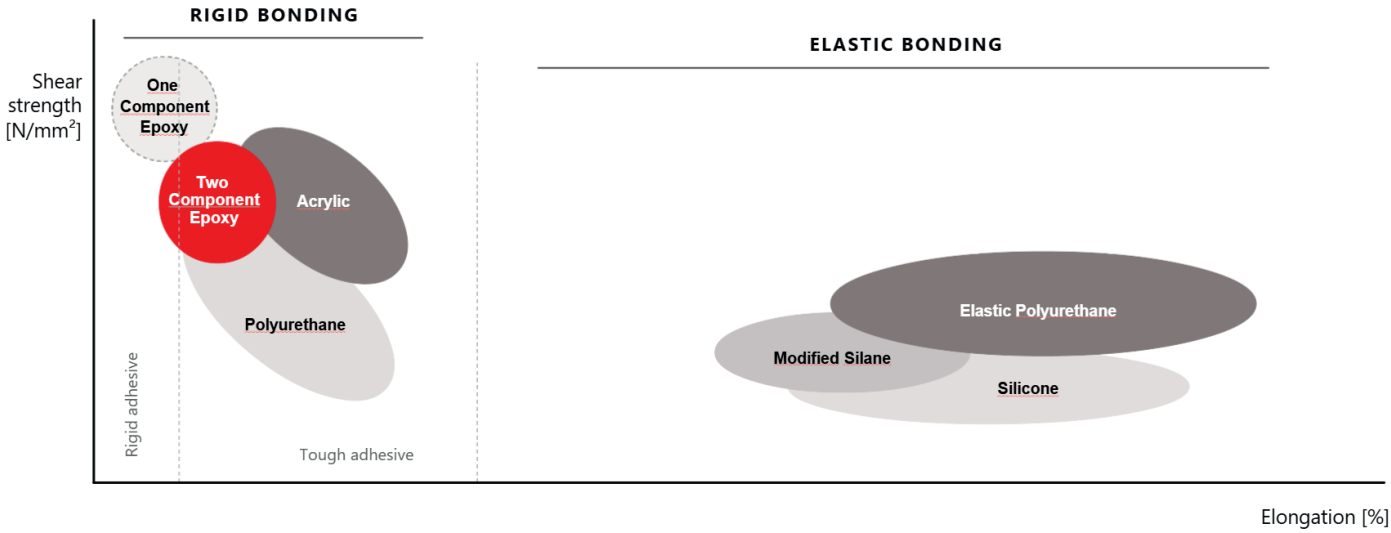

Figure 3. Classification of adhesives according to their strength and deformation capacity. The solution selected for the Sagrada Familia falls within the two-component epoxy (2K EP) segment, combining high structural strength with adaptability.

- On the vertical axis are rigid joints, used where components must remain fully bonded, with virtually no relative movement. These joints are designed to withstand high loads, typically with thin adhesive layers and stresses concentrated at the edges.

- On the horizontal axis are more flexible joints, such as silicones used in window or bathroom sealing, which accommodate movement and absorb deformation, adapting to variations in temperature or humidity without failure.

The challenge in the construction of the towers of the Sagrada Familia required a solution that was as strong as an extremely rigid joint, while at the same time capable of absorbing small movements without breaking. This was essential, as stone and steel respond differently to temperature, humidity, and vibrations.

Based on this analysis, Henkel's teams determined that the solution should fall within the category of two-component epoxy (2K EP), one of the most advanced systems in structural adhesives. The choice ultimately led to a toughened formulation capable of balancing strength and adaptability.

Thanks to its extensive portfolio, Henkel was able to identify several alternatives that met these requirements. In an initial phase, two potential candidates were selected and evaluated in detail, considering key variables such as viscosity, curing behavior, structural strength, and their application under real construction conditions.

After this entire process of analysis and validation, the solution became clear.

The selected product: LOCTITE® EA 9497™

A two-component epoxy solution designed to meet the most demanding challenges, which would ultimately become one of the true invisible heroes of the construction, enabling stone and steel to function as a single structure.

The selection of the product was supported by an extraordinarily rigorous validation process. For more than **eight months**, the adhesive underwent intensive testing at **Henkel's laboratories in Montornès del Vallès, Barcelona (Spain), and in Germany**, as well as independent external validations.

This timeframe is particularly significant when set against typical industry benchmarks: In a standard customer project, the evaluation and validation phase usually lasts between one and two months. In this case, the process extended to **over eight months – four to eight times longer, representing an additional effort of up to 700% beyond standard practice.**

All of this took place even before the project had been awarded. During this time, Henkel invested technical resources, laboratory capacity, and specialized teams to demonstrate the performance of its solution, without the certainty of ultimately being selected as the partner.

The tests included not only validation against standard specifications, but also **characterization** testing, in which the material was subjected to conditions more demanding than those defined in the technical datasheet. In other words, the product was pushed beyond its limits to ensure its performance under real construction conditions.

The results confirmed that the adhesive not only met, but exceeded the requirements defined by the Sagrada Familia, establishing itself as the ideal solution for the construction of the central towers.

A Strategic Partner Beyond the Product

Henkel's selection as a partner in this project was based not only on the suitability of its product, but also on its ability to integrate technology, expertise and service throughout the entire construction process.

Figure 4. LOCTITE® EA 9497™, the two-component epoxy adhesive selected for the structural bonding between stone and steel in the central towers.

Henkel brings **extensive experience in bonding solutions** applied to some of the most demanding architectural projects in the world. Its technology has been used in major international infrastructures such as the **Burj Khalifa in Dubai, the tallest building in the world**, the Elbphilharmonie in Hamburg, the Atomium in Brussels, the Great Wall of China, and the Olympic Stadium in Munich. This accumulated experience is critical in projects where structural precision and durability are essential.

As a **global leader in adhesives**, Henkel operates in more than 800 industries and offers the broadest portfolio on the market, enabling it to address highly specialized applications in sectors such as construction, automotive, electronics, and advanced engineering. This scale translates into strong innovation capabilities and access to a global network of experts who work directly alongside customer technical teams.

In the case of the Sagrada Familia, this collaboration has been structured through a perfectly coordinated international model, where each location has played a specific role:

- **Development, validation, and technical support:** conducted at Henkel's center in **Montornès del Vallès, Barcelona (Spain)**, and its reference centers in **Germany**, with the involvement of a **team of more than 20 specialists** dedicated to testing, validation and ongoing technical support.

- Adhesive production: conducted at Henkel's plant in **Casarile (Italy)**, an industrial site specialized in technologies such as epoxy resins, silicones, and coatings, employing more than 110 people and managing over 2,200 product references.

- **Logistics, supply, and local service:** managed from the facility in **Montornès del Vallès, Barcelona (Spain)**, ensuring flexible delivery tailored to the specific needs of the construction works.

This approach has made it possible to guarantee one of the most critical aspects of the project: the **continuity of supply of the same product over time.**

In a project like the Sagrada Familia, whose construction spans decades and depends on non-linear progress – largely determined by funding from visitor ticket revenues – planning does not follow a conventional industrial logic.

This means that purchasing capacity varies over time, depending on the resources available at each phase of the project.

In this context, Henkel's adaptability has been key. Over more than ten years of collaboration, the company has not limited itself to supplying product but has continuously **adjusted both production and logistics to the project's real needs.**

This approach relied on careful coordination of supply in line with purchasing constraints at any given time, with volumes, delivery schedules and planning continuously adapted to ensure uninterrupted progress without placing undue pressure on the project. It also required close collaboration between both parties, underpinned by flexibility and mutual trust. Henkel has aligned product availability with the project's execution capacity, while the Sagrada Familia has adapted its planning to its available resources.

Even in exceptional situations, such as the **temporary shutdown of construction works during the COVID pandemic**, this adaptability made it possible to maintain the continuity of the project.

In addition, Henkel has provided **continuous technical support** at every stage, from initial product validation to on-site application, including dosing processes, curing, and quality control. This constant support has made it possible to adapt the solution to real execution conditions and ensure its long-term performance.

Trust in the brand has also been a key factor. LOCTITE, Henkel's adhesive brand, is the most recognized worldwide in high-performance solutions, with a reputation built on reliability, quality, and the ability to perform under extreme conditions.

Ultimately, **Henkel has contributed not only an adhesive, but a combination of technical expertise, industrial capacity, international experience and continuous service – establishing it as an essential strategic partner in delivering a project on the scale of the Sagrada Familia.**

How It Works
From Liquid to Structure

To understand the role of the adhesive in the construction of the Sagrada Familia, it is essential to grasp a key aspect: in this project, **the product's viscosity was as important as the structural strength it would achieve once cured.**

In other words, it was not enough for the adhesive to be extremely strong in its final state. It also had to exhibit perfectly controlled flowability to ensure correct application at every joint.

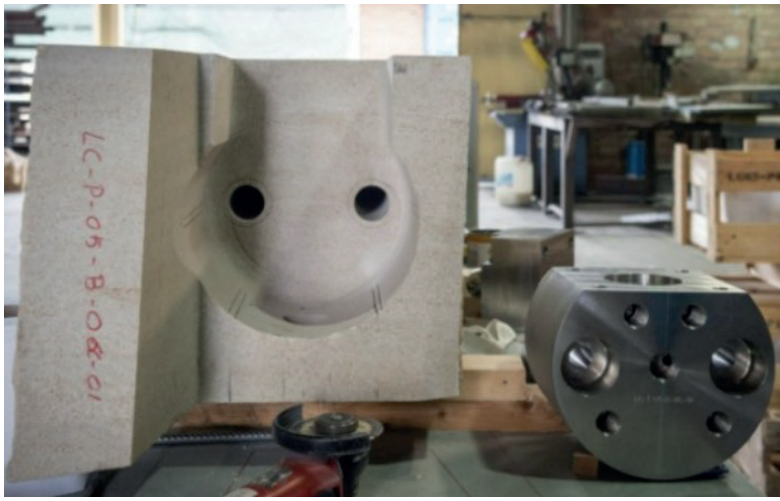

Figure 5. Machined stone pieces and steel elements designed for structural integration prior to adhesive application.

The process begins at the quarry, where each of the elements is prepared. The two-component epoxy adhesive is applied using a **dosing system consisting of two drums, corresponding to components A and B.** Both components are conveyed from the drums through hoses to a mixer, where they are combined in a controlled manner to ensure a homogeneous mixture.

Once mixed, the adhesive is **dispensed in liquid form, allowing proper application and enabling it to fill cavities and adapt to the contact area between the stone and the metal elements, thus ensuring an effective structural bond.**

Thanks to this controlled viscosity, the adhesive completely fills the joint area, ensuring continuous surface contact. This feature is **critical**, as **it allows loads to be evenly distributed and prevents the formation of weak points within the structure.**

Once applied, **the adhesive begins its curing process.** For **approximately 24 hours**, the components are kept under controlled temperature conditions. To ensure optimal performance, Henkel recommended the installation of a **dedicated curing space** at the quarry, allowing constant conditions to be maintained year-round and preventing external factors such as winter cold or summer heat from affecting the process.

This control is essential to ensure that the adhesive consistently **develops its optimal properties, regardless of environmental conditions.**

After this initial curing stage, an additional **thermal post-curing** process is carried out, also under controlled conditions. This second step enhances the material's performance under structural loads and long-term temperature variations, further improving its performance and durability.

Figure 6. Dosing unit with adhesive components A and B, used to ensure a homogeneous mixture.

Figure 7. Adhesive dosing and application under controlled conditions during the preparation of components at the quarry.

Overall, the adhesive completes a transformation **cycle of approximately two days, transitioning from a liquid state to a solid material with structural capacity, capable of fully integrating stone and steel into a single resistant unit.**

From there, at the quarry itself, these units are assembled into complete structural panels, ready for transport.

The panels are then transported to the Sagrada Familia, where the

Figure 8. Image of the curing area where the bonded components, stone and steel, are kept at a stable and controlled temperature for 24 hours thanks to the adhesive.

next phase begins and the construction system comes into its full scale.

Assembled level by level, following a precise modular logic akin to large architectural "building blocks", each element fits into the next, allowing the tower to rise in a controlled manner up to its final height.

By separating these two processes – manufacturing at the quarry and on-site assembly – quality, control and execution times are optimized, reducing complexity within the construction environment.

Each stage, from the initial flowability of the adhesive to its final behavior as a structural component, forms part of a highly technical and carefully coordinated process.

A process in which **the adhesive not only bonds, but ensures that everything functions as a single system, making it possible for Gaudí's vision to endure over time**, even if its role remains invisible.

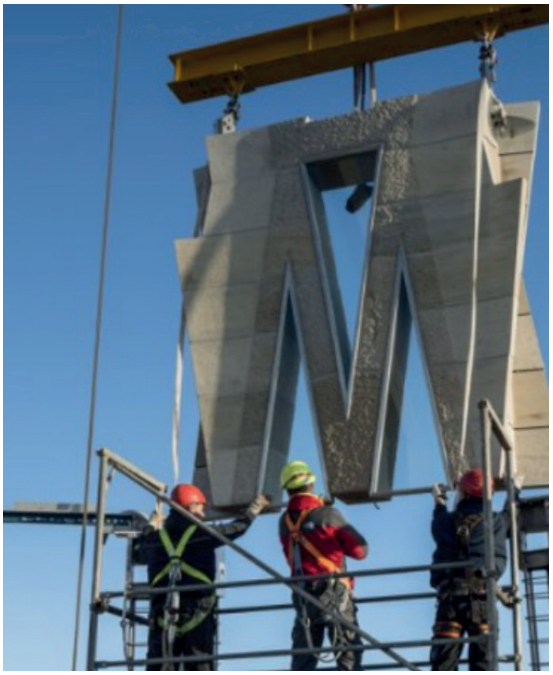

Figure 9. Assembly of structural panels at height, where the elements assembled at the quarry are integrated into the tower.

The Result
Pushing Engineering to the Limit

The scale of the project is reflected in the figures: more than **24 tons of adhesive have been used to assemble 826 panels and over 2,100 stone elements, with an average consumption of approximately 30 kilograms per panel.**

The result is a single, solid structure where **stone and steel, materials with fundamentally different behaviors, perform as a unified system.**

From a structural standpoint, this posed an extraordinary challenge. Stone responds rigidly under load, while steel exhibits more flexible behavior. When both materials are subjected to stress, **lateral sliding forces, known as shear stresses**, arise, acting to move them in opposite directions.

It is at this point that the role of the adhesive becomes critical. The material not only bonds the two elements but also **absorbs stresses and prevents any relative movement between them, even under high loads or dynamic forces**. In essence, it enables stone and steel to perform as a single structural component.

The resulting performance reaches exceptional levels of strength. **The bond is capable of withstanding the equivalent weight of up to 100,000 adult people per square meter**, a magnitude that illustrates the extraordinary compressive capacity of the system.

These structural demands are combined with a particularly challenging environment. The Sagrada Familia is located **approximately 2.5–3 kilometers in a straight line from the Mediterranean Sea**, resulting in constant exposure to a **marine environment**. This proximity leads to the continuous presence of salt particles in the air, which can penetrate materials and accelerate degradation processes, particularly corrosion.

In addition, Barcelona experiences high **humidity** levels throughout much of the year, with average **relative humidity ranging between 65% and 75%.** This combination of persistent humidity and proximity to the sea creates a highly aggressive environment for materials, where **corrosion resistance** becomes a critical factor.

Thermal conditions introduce an additional layer of complexity. Within the same structure, materials may experience temperatures close to 5°C in winter and exceed 30°C in summer, resulting in **variations of more than 20°C** and continuous cycles of expansion and contraction.

This behavior is comparable to that of more extreme climates, but with the added challenge of occurring in a humid and saline environment, which further intensifies internal stresses between materials.

In this context, **the adhesive plays a fundamental role**. Its formulation enables it to absorb temperature variations while maintaining the stability of the structural bond, preventing expansion and contraction from causing cracks or loss of adhesion. As a result, the system retains its integrity even under continuous thermal cycling, ensuring long-term performance.

The urban environment also introduces an additional challenge: vibrations. The metro line running alongside the basilica generates continuous micro-vibrations which, although imperceptible, are constantly transmitted to the structure. These dynamic stresses must be absorbed without compromising the stability of the system over time.

In this context, **the adhesive provides the necessary balance between rigidity and flexibility, absorbing movements, distributing loads, and preventing stress concentrations. At the same time, it acts as a barrier against moisture ingress and external agents, protecting the joint against corrosion.**

The result is a structural system capable of simultaneously withstanding extreme loads, humidity, salinity, temperature variations, and continuous vibrations, while maintaining its long-term performance without compromising its integrity.

This level of performance has also made it possible **to accelerate the construction process by up to tenfold, enabling the completion of the central towers in alignment with a historic milestone: the centenary of Antoni Gaudí's death in 2026.**

This leap forward has been made possible by the development of a modular construction system, enabling progress through the use of large structural blocks rather than the traditional piece-by-piece approach. The process shifts to a "building block"-type assembly model, in which each panel integrates several stories, significantly optimizing execution timelines.
I
n practical terms, **what has been built in approximately eight years would have required several decades – between 50 and 60 years – using traditional methods**, demonstrating the transformative impact of this construction approach.
Within this system, the adhesive plays an essential role, as it enables the structural integration of stone and steel within each module, allowing the entire assembly to function as a single unit and making this new way of building possible.

The Final Milestone
The Star That Makes the Invisible Visible

Thanks to the structural stability achieved, it has been possible to complete the Tower of Jesus Christ, the central and most emblematic element of the Sagrada Familia.

Standing at **172.5 meters tall, it becomes the highest point in Barcelona and establishes the basilica as the tallest religious temple in the world**, surpassing Ulm Minster in Germany, which reaches approximately 162 meters.

The tower is crowned by a monumental cross, the highest point of the entire structure. At approximately 17 meters in height, it ranks among **one of the largest architectural crosses ever built**, placing significant additional structural demands on the tower that supports it.

This milestone adds to another already iconic element of the ensemble: the twelve-pointed star of the Tower of the Virgin Mary, measuring around 7.5 meters in diameter and visible from much of the city. Both elements now define the **new silhouette of the Sagrada Familia** and reinforce its unique character worldwide.

From 2027 onwards, **the Tower of Jesus Christ will also be accessible as a viewpoint**, allowing visitors to admire Barcelona from its highest point and offering a new perspective on the urban skyline.

This achievement also carries deep **symbolic meaning.** Antoni Gaudí designed the Sagrada Familia under the principle that **no human work should surpass divine creation.** For this reason, he set the height of the basilica so that it would not exceed Montjuïc hill, which reaches approximately 177 meters above sea level. The central tower deliberately respects this natural limit.

Although the cross, like the star, does not incorporate adhesive, its stability depends entirely on the robustness of the structure that supports it. It is precisely the developed structural system, based on the integration of stone and steel as a single unit, that makes it possible to support not only this large-scale element, but the entire tower and the spaces accessible to the public.

This milestone marks a turning point in the history of the Sagrada Familia. It not only completes one of the most complex phases of the project, but also definitively transforms Barcelona's skyline and brings to life a vision conceived more than a century ago.

Conclusion
The Visible and the Invisible

The story of the Sagrada Familia is not only one of architecture or symbolism. It is also the story of engineering, innovation, and collaboration across disciplines.

It is the story of what cannot be seen. Of the elements that, without apparent prominence, make everything else possible.

Of adhesives. The true invisible heroes of this construction.

But this achievement cannot be understood through technology alone. It is also the result of **extraordinary collaboration.**

All stakeholders involved in the project have played a vital role: the distributor, the engineering and construction partners, the quarry specialists and, of course, the Sagrada Familia teams.

In particular, the contribution of the **distributor and engineering partners** has been decisive in enabling the collaboration between Henkel and the Sagrada Familia:

- **The distributor, General de Adhesivos, SLU (now Bodo Möller Chemie)**: a company specialized in technical distribution and advisory services in adhesive solutions. Throughout the project, it acted as the product distributor, managing its procurement and supply to the teams responsible for its application. The Spanish company General de Adhesivos was integrated into the international Bodo Möller Chemie group in 2022, strengthening its technical capabilities and global reach.

- **The engineering partner, ROLEN Technologies & Products, S.L.**: a Barcelona-based engineering company with which Henkel has worked directly on the project, providing technical development capabilities and solution integration, as well as coordination in the implementation of structural bonding systems.

Henkel has acted as a technological link, integrating the bonding of the fundamental materials. But the success is, without a doubt, collective.

It is this collaboration, together with other suppliers and the exceptional Sagrada Familia team, that has allowed our generation to contribute to making Gaudí's dream a reality.

Because ultimately, what matters most is not always visible.
Sometimes, what matters most...
is not what we see.
But what makes it possible.

WE** MAKE IT **HAPPEN

Figure 10. Henkel, a global company leading industrial and consumer solutions.

ABOUT *HENKEL*

Global Innovation with Real Impact

Henkel is a global company headquartered in Düsseldorf (Germany), founded in 1876 by Fritz Henkel. With more than 150 years of history, the company has established itself as an international leader in both industrial and consumer markets, thanks to a strong legacy of innovation, responsibility, and long-term vision.

Today, Henkel operates on a global scale, with **around 47,000 employees** representing more than 120 nationalities and a presence in **over 100 countries**, a reflection of its global reach and cultural diversity.

The company structures its operations into two complementary business units:

- **Adhesive Technologies**, where Henkel is a global leader in bonding, sealing, and functional coating solutions applied across multiple industries, with well-known brands such as LOCTITE, Pattex, and Pritt.

- **Consumer Brands**, which includes everyday products such as detergents, home care products, and hair care, with iconic brands such as Persil and Schwarzkopf, present in millions of households worldwide.

Thanks to this model, Henkel's technologies and products are part of both large-scale industrial developments and consumers' daily lives, combining technical innovation with accessible solutions across multiple fields.

In 2025, the company achieved global sales of approximately **€20.5 billion** and operates a network of **165 production sites in 53 countries**, reinforcing its position as a key player in the global industry.

Henkel's purpose, **"Pioneers at heart for the good of generations"**, reflects its commitment to developing solutions that improve people's lives, today and in the future. This vision is brought to life through a global strategy focused on purposeful growth, underpinned by a strong product portfolio, a clear commitment to innovation, digitalization and sustainability, and a collaborative, people-centered culture.

150 Years of Henkel Shaping the Future for Generations

In 2026, Henkel celebrates its **150th anniversary**, a milestone marking a journey that began in 1876 with the company's founding by Fritz Henkel. Since then, the company has evolved into a global leader with a presence in more than 100 countries, integrating industrial innovation and consumer products into the daily lives of millions of people.

Figure 11. Henkel celebrates its 150th anniversary under the motto "Future? Ready!", reaffirming its commitment to innovation and the future.

Throughout these 150 years, Henkel has built its story on a constant principle: the ability **to anticipate the future**. From the launch of one of the first branded detergents in the 19th century, which already introduced pioneering concepts such as standardized packaging and manufacturer recognition, to the development of adhesive technologies that today lead key industrial sectors, the company has consistently demonstrated a strong commitment to innovation.

This trajectory is reflected in milestones that have shaped the evolution of different industries and categories:

- The creation of **Persil, the world's first self-acting detergent**, which revolutionized home laundry

- The launch of the world's **first powder shampoo under the Schwarzkopf brand**

- The development of adhesives during a period of supply shortages between the two World Wars, which gave rise to a business in which **Henkel is now the global leader**

This capacity to innovate, adapt, and evolve is captured in the motto chosen for this anniversary: **Future? Ready!**

This slogan clearly expresses that Henkel does not look back to celebrate its past, but instead reaffirms its readiness for the future. After 150 years, the core message is that the company's **ambition to innovate, evolve, and face future challenges remains as strong as ever.**

In this sense, the **collaboration between Henkel and the Sagrada Familia is a tangible example of this vision: a project conceived more than a century ago that finds in today's technology and innovation the tools needed to become a reality.**

A historic legacy directly connected to the future.

Henkel's 150th anniversary therefore brings together two key ideas: **pride in a legacy built over generations and a determined, optimistic attitude towards what lies ahead.**

The completion of the central towers of the

Sagrada Familia coincides with the centenary of Gaudí's death and also with Henkel's 150th anniversary. This is no coincidence. More than a century ago, two men envisioned something that would outlast their time.

Antoni Gaudí dreamed of elevating his work towards the sky. He knew he would not live to see the completion of the project he had designed for the Sagrada Familia, but he conceived and structured it in such a way that future generations could bring it to life in line with his vision.

Fritz Henkel believed in the power of innovation to transform the world and to create solutions capable of enduring over time. One hundred and fifty years later, his pioneering spirit converges with Gaudí's vision.

Today, both legacies converge at the highest point of Barcelona's skyline, where Henkel's innovation has helped make possible the construction of the central towers and the completion of the Sagrada Familia, establishing it as the tallest religious building in the world.

A dream conceived for the future, built generation after generation.

Two visions united across time.

Fritz Henkel
The Origin of a Pioneering Spirit

Fritz Henkel (1848–1930) was the founder of Henkel and the origin of a pioneering spirit that continues to define the company today. In 1876, at just 28 years of age, he founded the company in Germany with only three people, with the aim of developing a more effective detergent that would revolutionize the washing process.

From the very beginning, he stood out for his ability to see opportunities where others saw limitations. Just two years later, he achieved his first major success with **Henkel's Bleich-Soda, one of the first branded detergents**, which introduced innovative concepts for its time and laid the foundations for the company's future development.

Fritz Henkel was not only a driving force behind technical innovation, but also a pioneer in the way businesses are managed. He broke new ground in areas such as product development, marketing, and brand building, helping to transform the daily lives of thousands of people through his solutions.

His vision extended beyond business, reflecting a deep commitment to both employees and society, and anticipating principles that are now integral to responsible business practices. A focus on long-term impact and future generations was at the heart of his approach. Today, Henkel remains a **family-influenced company**, with the **fifth generation** in leadership and holding more than 50% of its shares, listed on **Germany's DAX 40 index.**

More than a century later, this entrepreneurial spirit and forward-looking mindset continue to underpin Henkel's global development.

Figure 12. Fritz Henkel, founder of Henkel in 1876 and the origin of the pioneering spirit that continues to define the company today.

Henkel Production Site in Casarile (Italia)

The adhesive used in the Sagrada Familia project is manufactured at Henkel's plant in Casarile (Italy), a site specialized in the production of high-performance industrial adhesive solutions, particularly in technologies such as **epoxy resins**, which are key for structural applications.

The Casarile plant, operational since 1966 and part of Henkel since 1988, employs around **110 people** and manages more than **2,200 references**, including finished products, raw materials, and technical solutions.

Its multi-technology capabilities cover the development of **epoxies, polyamides, silicones, and coatings**, used in demanding industrial sectors such as energy, electronics, and machinery.

Figure 13. Henkel production plant in Casarile (Italy).

Henkel Production Site in Montornès del Vallès, Barcelona (Spain): An Industrial Benchmark Supporting Major Projects

e Sagrada Familia project is also supported by Henkel's industrial and technological capabilities in Spain, specifically at its production site in Montornès del Vallès (Barcelona), **one of the most advanced plants within the Henkel Group globally and a benchmark in Industry 4.0 and sustainability.**

With more than **60 years of history**, the facility covers an area of **180,000 m²**, with an annual production of around **200,000 tons, exporting to more than 60 countries**. It employs over 500 people, approximately half of Henkel's workforce in Spain, and stands out for achieving **gender parity at leadership levels.**

The Montornès plant is one of the few Henkel facilities worldwide that integrates production for both of the Group's major business units: **Adhesive Technologies** and **Consumer Brands**. On the industrial side, it produces adhesives for key sectors such as automotive, aerospace, and DIY, in formats ranging from **15-gram packages to large 24-ton tanks.**

Spain, as the second-largest automotive producer in Europe, makes this plant a **strategic hub for the production of and expertise in adhesive technologies, particularly epoxies for the automotive industry**, enabling Henkel to stay close to its customers and deliver highly specialized solutions.

At the same time, the site also manufactures consumer goods such as **detergents and cleaning products, with 6 packaging lines, more than 90 formulas, 20 different formats, and around 200 product references across multiple categories, including detergents, fabric softeners, laundry additives, and cleaning products.**

In addition, the plant stands out for its high level of automation, including pioneering automated

Figure 14. Henkel production site in Montornès del Vallès (Barcelona).

warehouses in Spain, and was recognized by the **World Economic Forum** as the **first Global Lighthouse in Spain, a distinction awarded to the most advanced factories in the world in Industry 4.0.**

Although the specific adhesive used in the central towers of the Sagrada Familia was manufactured at Henkel's plant in Casarile (Italy), the Montornès site has played a fundamental role in the development of the project.

From its laboratories, **testing and validation processes** were conducted prior to certification, ensuring that the product met the demanding technical and safety requirements of a project of this scale. Its expertise in **adhesive technologies, particularly in epoxies**, has been instrumental in confirming the suitability of the solution.

In addition, Montornès has served as a **logistics coordination and technical support center,** managing product supply and adapting to the needs of the project and construction works throughout the ten years of collaboration.

LOCTITE
Innovation That Connects Industry and Everyday Life

LOCTITE is the **world's leading brand in adhesives, sealants, and surface treatments**, with revenues exceeding €3 billion and a presence in more than 130 countries. Under this brand, Henkel offers solutions used in both large-scale industrial applications and in the daily lives of millions of consumers.

The name **LOCTITE originates from the English expression "Lock Tight"**, reflecting its value proposition: to ensure secure, strong, and durable bonds. Over the past decades, this concept has become synonymous with performance and reliability across multiple sectors.

LOCTITE technology dates **back to 1953**, when **Dr. Vernon Krieble** developed the first solution based on anaerobic technology, designed to secure fastenings and prevent the loosening of mechanical components. This innovation represented a decisive breakthrough in the industry, **enabling safer and more reliable joints in demanding environments.** Over time, the brand established itself as a benchmark in the industrial field and, following its integration into Henkel in 1997, expanded its global reach and accelerated its technological development, becoming an international leader.

One of the key factors behind its leadership is its **constant capacity for innovation**, which has enabled the development of solutions for a wide range of applications. Today, LOCTITE technologies are present in **more than 800 industrial segments**, from automotive and electronics to aerospace and manufacturing.

In the **industrial field**, LOCTITE positions itself as a technical partner that goes beyond the product. Its solutions support applications such as mechanical assembly, structural bonding, surface protection and process automation, enhancing efficiency, durability and reliability across production systems.

At the same time, the brand also has a strong presence in **consumer markets**, offering instant adhesives, multi-purpose solutions, and specialized products that millions of people use in their daily tasks. In this way, LOCTITE combines a **unique dual dimension**: being a benchmark both in high-demand industrial environments and in household applications.

Its technology is integrated into some of the most advanced systems in the world, from bonding lightweight materials in vehicles and electronics to applications in the aerospace industry, where **the highest standards of performance and safety apply.**

Figure 15. First LOCTITE products that marked the beginning of its development in fastening, sealing, and bonding solutions.

This level of demand has led to remarkable technical achievements and global milestones. Among them, the Guinness World Record for lifting a vehicle weighing more than five tons using only a few drops of LOCTITE cyanoacrylate adhesive stands out as a powerful demonstration of its extraordinary strength.

The brand has also conducted high-impact **demonstrations, such as pulling a train weighing over 200 tons using only an adhesive bond, as well as initiatives like the "Hanging Man", in which several people were suspended using adhesive applied solely to the soles of their shoes.** Together, these initiatives offer a compelling illustration of the **performance, reliability and innovative** capacity that define the brand.

Beyond the product itself, LOCTITE represents a way of understanding innovation: developing solutions that make it possible to **bond, protect, and enable what was previously not possible**, supporting its customers as a technological partner in increasingly complex challenges.

LOCTITE® EA 9497™ Bonding Technology for Structural Applications

For the construction of the central towers of the Sagrada Familia, the adhesive **LOCTITE® EA 9497™** was used, a high-performance epoxy solution developed for industrial applications requiring strong, durable, and reliable bonds under demanding conditions.

It is a **two-component adhesive**, composed of resin and hardener in a defined mixing ratio, which cures at room temperature. This technology enables the creation of high-quality structural bonds between different materials, making it a versatile solution for complex applications.

Among its key characteristics, the following stand out:

- **The ability to bond a wide range of materials,** including metals and other common substrates used in construction environments.
- **High resistance to mechanical stress,** with excellent tensile and compressive strength
- The capability to maintain performance under **demanding thermal conditions**, making it suitable for applications requiring heat resistance.
- Its contribution to the **structural stability** of bonded elements, even under prolonged exposure to adverse environmental conditions

Figure 16. LOCTITE "Hanging Man" demonstration, showcasing the strength performance of its adhesive solutions.

The product is particularly suitable for applications such as bonding metal components in high-temperature environments or encapsulating components, where a combination of mechanical strength, thermal stability, and long-term durability is required.

In addition, its performance allows it to achieve a high level of strength after the curing process, ensuring the reliability of the bond in applications where precision and safety are essential.

In the context of the Sagrada Familia, these properties have been key to ensuring the correct bonding of the different structural elements, contributing to the stability and durability of a project designed to endure for generations.

Figure 17. LOCTITE® EA 9497™ with mixing nozzle, used in structural applications in industrial environments.

Figure 18. Begoña Cantera, Project Lead Engineer at Henkel and technical lead of the adhesive project.

Begoña Cantera
Engineering Applied to Innovation

Begoña Cantera, **Project Lead Engineer at Henkel** within the Adhesive Technologies business unit, has over **25 years of experience** in industrial adhesives.

She holds a degree in Chemistry and began her career in the sector following an internship at Dow Chemical. She later joined National Starch, a company specializing in adhesives, where she developed both her laboratory and commercial expertise. Following the integration of the company into Henkel in 2008, she has continued her career within the organization, progressing through a range of technical roles.

Over the years, she has worked in customer management, key accounts, and new market development, combining this with delivering technical training and participating in European projects related to sustainability and the development of value-added adhesive solutions.

In this context, **she has been the technical lead of one of Henkel's most distinctive projects: the collaboration with the Sagrada Familia**. In this role, she has led the development and validation of the adhesive solutions required to meet the demanding structural requirements of the project.

ANTONI GAUDÍ, THE **SAGRADA FAMILIA** AND A LEGACY THAT *THAT TRANSCENDS GENERATIONS:*

Gaudí Centenary
Barcelona, World Capital of Architecture

The year 2026 marks the **centenary of Antoni Gaudí's death**, a pivotal figure in global architectural history. To commemorate this milestone, the Basilica of the Sagrada Familia has launched **Gaudí Year 2026**, a program featuring more than 30 events between October 2025 and December 2026, positioning Barcelona as the **world capital of architecture.**

In this context, Henkel is also participating as a **collaborating company in the centenary**, reinforcing its commitment not only to the technological contribution to the project, but also to its cultural and social significance.

The central moment of this commemoration took place on **June 10, 2026**, coinciding with the 100th anniversary of Gaudí's

Figure 19. Interior of the Sagrada Familia, an example of Gaudí's architecture based on organic geometries and forms inspired by nature.

death, with an event that culminated in the blessing and illumination of the Tower of Jesus Christ by Pope Leo XIV. This architectural milestone has made the **Sagrada Familia the tallest religious temple in the world** and symbolizes the union of technological innovation and artisanal excellence.

The Sagrada Familia
A Universal Icon of Architecture

The Basilica of the Sagrada Familia is one of the **most iconic and widely recognized architectural projects in the world.** Construction began in 1882 and reached its highest expression under Antoni Gaudí, representing the **ultimate manifestation of modernism** and a unique work of global recognition. Gaudí developed a radical reinterpretation of architecture based on forms found in nature. Its structures are inspired by **organic geometries**, such as tree-like columns, ruled surfaces, and solutions based on ellipses, hyperboloids, and paraboloids, which pioneeringly combine aesthetic beauty with structural efficiency.

With more than 140 years of history, the Sagrada Familia is now one of the **most visited monuments in Europe and worldwide**, attracting millions of visitors each year, mainly from Europe, the United States, and Asia. Its uniqueness also lies in its **funding model**: it is built entirely through contributions from visitors and private donations, reinforcing its collective character and its strong connection with society, as well as its social and economic impact on the local environment.

The completion of the Tower of Jesus Christ, at 172.5 meters in height, marks a definitive turning point, making it the **highest point in Barcelona** and creating a **new skyline** for the city. The tower is expected to open to the public as a viewpoint in 2027, offering a unique experience over the city. With this, the Sagrada Familia is consolidated as **the tallest basilica** in the world. In line with Gaudí's vision – who believed that no human work should surpass natural creation – its height does not exceed that of Montjuïc hill.

Antoni Gaudí
Vision, Nature and the Future

Antoni Gaudí (Reus, Spain, 1852) **took over the Sagrada Familia project in 1883** and transformed it into a unique work, based on the observation of nature, the use of innovative geometries, and a deeply symbolic conception of architecture. He devoted more than **40 years of his life to the temple**, almost exclusively during the last 15, making it the central project of his career.

During his lifetime, Gaudí only saw the completion of the Nativity Façade, the only part fully finished under his direction, which today remains a direct testimony to his artistic and constructive vision. From the outset, **he was aware that he would not see the basilica completed, and therefore conceived it as a project for future generations**, leaving behind a legacy of plans, models, and architectural principles that would allow others to faithfully continue his original idea.

Figure 20. Antoni Gaudí, architect of the Sagrada Familia and creator of a vision conceived to transcend generations.

His architecture integrates form, structure, and meaning, incorporating advanced solutions for its time and inspired by nature, which has made his **work a universal reference**.

Gaudí tragically died on **June 10, 1926**, after being struck by a tram in Barcelona. **This very date, almost a century later, was symbolically chosen** for the blessing and illumination of the Tower of Jesus Christ, as a tribute to the man who envisioned a work destined to transcend time.

Jordi Faulí
Continuity and Adaptation of a Legacy

Today, the construction of the Sagrada Familia is led by Jordi Faulí, Chief Architect since 2012, after succeeding Jordi Bonet i Armengol. Faulí joined the temple's team in 1990, meaning he brings **more than 30 years of involvement in the project** – an exceptional trajectory that has enabled him to gain in-depth knowledge of each phase of its evolution and to ensure the rigorous continuity of Gaudí's legacy.

One of the main challenges has been to faithfully interpret the original vision based on the available information – plans, models, and historical documentation – and adapt it to current technologies and regulations. In this process, the Sagrada Familia has also become a **benchmark for innovation**, combining artisanal heritage with the use of advanced digital tools, such as 3D modeling, which allow the complex geometries envisioned by Gaudí to be developed and executed with precision.

Figure 21. Jordi Faulí, Chief Architect of the Sagrada Familia and responsible for the continuity of the project today.

The construction of the central towers has represented a particularly significant technical challenge. Among the solutions developed is the use of prestressed stone systems, combined with steel and concrete structures, ensuring the stability and feasibility of the overall structure. In this context, materials and bonding technologies have been decisive. The selection of epoxy adhesives has made it possible to achieve a reliable bond between the stone and the metal structure, enabling an innovative construction solution aligned with the original vision.

For Faulí, the Sagrada Familia is, above all, a project of continuity:

"When we create something, we must think about those who will come after us and those who have contributed before. It is a long-term project, built generation after generation."

The completion of the Tower of Jesus Christ thus represents not only an architectural milestone, but also the realization of a vision shared over time, where tradition, innovation, and global expertise coexist.