From development to finished product

Sustainability in practice

ClickitUp® by ErgoSafe®

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Our choices make a real climate impact

ErgoSafe demonstrates with its own innovation, the ClickitUp® glass balustrade, how sustainable product development and production in Sweden can be implemented in practice and how active choices truly make a difference to our climate impact.

Through local responsibility, material selection, and close collaboration with Swedish partners, we have developed a glass balustrade with significantly lower climate impact than others on the market, without compromising on quality, functionality or design. We meet the sustainability demands of the future by taking responsibility at every stage, from development to finished product.

For ErgoSafe, sustainability means making active choices every day — both big and small — that together contribute to real climate benefits. On the following pages, you will learn how ErgoSafe puts sustainability into practice from both a development and production perspective.

Welcome to discover how we put sustainability into practice!

Halmstad, 30 May 2025

Fredrik Johansson
CEO ErgoSafe AB

Introduction

ClickitUp® is a glass balustrade developed and manufactured by ErgoSafe. We are a Swedish company with production based in Halmstad. In this document, we describe how we actively work to minimise climate and environmental impact throughout our entire process, from design to finished product.

We will go through how ErgoSafe have examined carbon emissions at every stage of our production and the active decisions we have made to reduce our climate footprint. Among other things, we highlight local manufacturing, the use of Hydro REDUXA, collaboration with Swedish suppliers and the use of recyclable materials.

We also present a comparison of the climate impact if our production were instead carried out in Europe or China. To illustrate these differences, we include a diagram and a table focusing on carbon emissions from aluminium production and transport.

Holistic view on carbon emissions in the process

We take a comprehensive approach to our climate impact by analysing and reducing carbon emissions from materials, manufacturing and transport. Since ErgoSafe owns the entire value chain, from product development to aftersales, we have full control over which suppliers and processes are used. When choosing suppliers, we weigh environmental performance equally with price and quality. This often results in selecting Swedish suppliers. Most of ErgoSafe's subcontractors are located in or around Halmstad, which contributes to efficient and low-emission logistics.

Material choices play a significant role in the total climate footprint of ClickitUp®. We continuously analyse how different input materials affect the product's emissions. For example, we realised that the choice of aluminium supplier has a major impact. Each year, we produce around 5,000 ClickitUp® sections, and by switching to Hydro REDUXA aluminium, we reduce carbon emissions by approximately 440 tons per year (calculated against the global average for aluminium production). In a similar way, we have reviewed the climate impact of the glass.

ClickitUp® contains large amounts of glass (we use over 14,000 m^2 annually) and by choosing locally produced glass, tempered with renewable electricity in Sweden, we reduce our carbon footprint by around 130 tons per year compared to imported glass tempered abroad. These figures show that at ErgoSafe, we consider emissions throughout the entire lifecycle, from raw material sourcing to component manufacturing and delivery. By measuring and openly reporting our emission reductions, we show that our climate efforts are systematic and that every part of the process is continuously optimised. This is what we mean when we say our choices make a real climate impact.

Production at our Halmstad factory is driven by environmental priorities. And thanks to Sweden's fossil-free electricity mix, our production results in significantly lower emissions compared to production in countries that rely on coal- or gas-based energy. ErgoSafe's factory is modern and energy-efficient. Managing resources and energy responsibly is a fundamental principle in our daily operations. All staff are involved in finding improvements that reduce our environmental footprint, through information sessions, idea-sharing, and initiatives that make it easier for employees to bike or drive electric vehicles to work.

In summary, our holistic view of *sustainability in practice* runs through the entire business, from how we choose suppliers and materials to how we use energy in the factory and plan our deliveries. Every part is a conscious, deliberate choice with the goal of minimising carbon emissions.

Active choices to reduce climate impact

On the following pages, we highlight the choices that have the biggest impact on reducing the climate footprint related to the development, materials and production of the ClickitUp® balustrade.

Local production in Sweden

As previously mentioned, all development and production of ClickitUp® takes place at our facilities in Halmstad. Our local manufacturing setup offers several climate-related advantages. Firstly, it allows us to ensure the highest quality and long product lifespan, which is sustainable in itself. Products that last longer do not need to be replaced as often. Secondly, it results in shorter transport distances for both raw materials and finished products within Sweden and nearby markets. Local production with short transport routes generates significantly lower CO_2 emissions compared to shipping products over long distances.

We see great value in being able to manage the entire value chain. Most importantly, it gives us the ability to take responsibility for both the environment and people by maintaining full control from factory to customer. Since our

production takes place in Sweden, it is also powered by an electricity mix that is approximately 97 percent fossil-free (hydropower, nuclear and wind), which significantly reduces emissions from energy use compared to foreign alternatives.

Low-carbon aluminium (Hydro REDUXA)

Aluminium is one of the main materials used in the ClickitUp® balustrade. The production of primary aluminium is generally energy-intensive and can result in significant carbon emissions. To minimise this impact, ErgoSafe has made a conscious material choice and switched to Hydro REDUXA, an aluminium produced with renewable energy and therefore featuring a very low carbon footprint. Hydro REDUXA guarantees a carbon footprint of no more than 4 kg of CO_2 per kg of aluminium (compared to approximately 16 kg CO_2 per kg as the global average). This single action reduces ErgoSafe's emissions by approximately 440 tons of CO_2 annually, without compromising product quality.

A key part of ErgoSafe's sustainability journey is the transition to REDUXA, which supports the UN goal for responsible consumption and production. Choosing a supplier like Hydro, with hydropower-driven smelting production, aligns fully with ErgoSafe's ambition to push the boundaries for greener materials without sacrificing quality.

In addition to the reduced emissions from production, aluminium as a material offers the advantage of being fully recyclable. All aluminium in ClickitUp® can be recycled and turned into new products. By investing in high-quality aluminium, ErgoSafe ensures that the balustrades are durable and robust, helping to prevent damage and extend lifespan, which is yet another way to conserve resources over time.

Local suppliers and locally produced materials

ErgoSafe deliberately chooses local suppliers for its key materials, both to support local production and to reduce climate impact. One example is the glass used in ClickitUp®. Instead of importing glass that has been produced and tempered abroad, ErgoSafe has a close partnership with a Swedish glass supplier who processes (laminates and tempers) the glass using green electricity at their facility in Småland. The glass is delivered weekly to ErgoSafe in Halmstad. Through this agreement, ErgoSafe ensures access to locally produced glass with minimal transport distance and low climate impact.

According to a calculation based on data from *Svenska planglasföreningen* (the Swedish association for flat glass) our choice reduces our CO_2 emissions by approximately 130 tons per year compared to importing equivalent laminated and tempered glass. Our glass supplier shares our vision of going against the current. In an industry where many competitors move production abroad, we have together chosen to invest in Swedish production.

Social sustainability

Our view on sustainability has made it natural to collaborate in order to reach our sustainability goals. Another advantage of working with local suppliers is that they more often comply with strict environmental requirements and working conditions in line with Swedish standards.

ErgoSafe sets basic requirements for all suppliers to ensure fair working conditions and collective agreements, which indirectly supports social sustainability alongside environmental efforts. By working with suppliers in our local area, we also avoid long-distance transport, which reduces emissions and saves fuel.

Acting sustainably ourselves is not enough. The choices made by our suppliers also affect our climate footprint. That is why we challenge both existing and new suppliers to continuously improve their sustainability performance. The result of these efforts is a local value chain where materials such as glass and aluminium have lower embedded emissions, and where transport between stages is short and efficient.

Recyclable and sustainable materials

In the product development of ClickitUp®, we have prioritised materials that are recyclable and have low environmental impact throughout their entire lifecycle. Glass and aluminium, which are the two main materials in ClickitUp®, can both be recycled to nearly 100 percent without any loss of quality.

At ErgoSafe, we say that we "*produce sustainable products using fully recyclable materials with respect for natural resources.*" This means that when a ClickitUp® balustrade eventually reaches the end of its life, its components (glass panes, aluminium profiles, fittings, etc.) can be collected and either remelted or reused in new products instead of ending up as waste. Already during production, we make use of all offcuts. All rejected glass from production at our supplier is recycled by a German company into new glass, and aluminium scrap can re-enter the metal recycling loop.

In this way, waste is minimised and circularity is promoted. Since we began producing ClickitUp® in 2014, we have used a unique serial number system that gives us full traceability. We can see the exact dimensions and product data of every section produced. This traceability also creates new opportunities for circular business models, where parts can be reused, upgraded or replaced.

Packaging and other materials are also managed with environmental considerations in mind. Where possible, we use recycled or recyclable packaging for our deliveries. For us, sustainability is an ongoing journey where we are constantly looking for ways to become more resource-efficient and make better environmental choices without compromising on quality or safety. Choosing recyclable materials in our products is a key part of this. It future-proofs the product in an economy that is moving towards increased recycling and reduced need for newly extracted natural resources.

Swedish, European and Chinese production

To clarify the value of ErgoSafe's local and sustainable choices, it is relevant to compare how the climate impact would have differed if ClickitUp® had been produced abroad instead. This section compares a Swedish production model with a hypothetical production in Europe and China, focusing on differences in energy mix, material origin and transport distances.

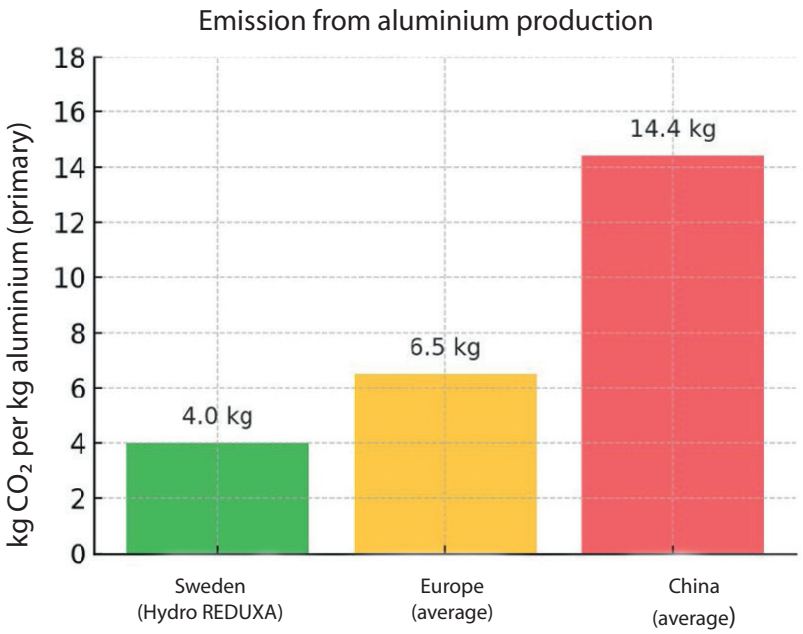
Energy mix and carbon emissions from electricity: A crucial factor is the electricity used in production (for example in aluminium processing, glass treatment and factory operations). Sweden's electricity mix is almost fossil-free and results in only about 0.05 kg CO_2 per kWh of electricity produced. In many European countries, the electricity mix is more carbon-intensive, with the EU average ranging between 0.24 and 0.29 kg CO_2 per kWh (although countries like Norway have even lower levels, close to zero). In China, electricity production is heavily coal-based, with each kWh generating an average of about 0.54 kg CO_2. This means that manufacturing processes outside Sweden generally result in higher emissions, even if the production itself is identical, simply due to the difference in the climate impact of the electricity used. For example, aluminium smelting requires a large amount of electricity. If our aluminium profiles were produced using China's electricity mix, that process alone would generate over ten times more CO_2 emissions compared to using Sweden's fossil-free electricity.

Material carbon footprint and origin: In Sweden, ErgoSafe can choose materials with a low carbon footprint, such as Hydro REDUXA aluminium and Swedish green glass. Had we produced ClickitUp® in another country, the materials would likely have had a higher embedded climate impact. The supplier choices we have made give us the ability to gain insight into how their CO_2/kWh values are calculated – something that is often more difficult with foreign suppliers.

Primary aluminium produced with the EU's average energy mix emits approximately 6 to 7 kg of CO_2 per kg of aluminium, while the global average is around 16 kg CO_2/kg and Chinese primary aluminium emits approximately 14.4 kg CO_2 per kg. This means that Hydro REDUXA, used by ErgoSafe (with a maximum of 4.0 kg CO_2/kg), has up to 75 percent lower emissions than aluminium used in more conventional production. The comparison of carbon emissions from aluminium production in Sweden, Europe and China, as shown in the chart on the next page, illustrates that the differences are significant.

If ClickitUp® had been produced using standard aluminium in China, the aluminium-related emissions per balustrade section would have been several times higher. Even within Europe, a foreign alternative would likely have involved a higher share of fossil energy in material production. The same applies to the glass. If the glass had been sourced abroad (for example from Eastern Europe or Asia), where energy is more fossil-based, its climate impact would have increased. Swedish-produced glass processed with green electricity has proven to generate significantly lower emissions than imported equivalents. ErgoSafe's decision to buy local glass therefore saves tens of thousands of kilos of CO_2 every year, thanks to cleaner energy and shorter distances to the factory.

Transport distances and the logistics chain: The length and method of transport also make a difference. In ErgoSafe's case, deliveries mainly take place within Sweden from local suppliers to our factory. If production were instead located in, for example, Asia, components or finished balustrades would need to be shipped tens of thousands of kilometres. Goods from China to Sweden travel approximately 20,000 km by sea freight, followed by road transport from port to end customer. Even production in other parts of Europe would involve longer road transport (often truck transport across several countries) compared to the domestic distribution ErgoSafe uses today. This affects emissions, as all transport involves the burning of fuel. However, it should be noted that different modes of transport have different carbon efficiencies. Sea freight by large container ships is relatively fuel-efficient per ton of goods transported, while road transport by truck emits significantly more per ton-kilometre.



Carbon emissions per kg of primary aluminium depending on production location. A comparison between ErgoSafe's choice of Hydro REDUXA in Sweden and the average emissions from aluminium production in Europe and China. Hydro REDUXA is produced using hydropower and has approximately 4 kg CO_2 per kg. Europe's primary aluminium averages around 6–7 kg per kg (2023 data), while China is around 14 kg per kg.

The table below illustrates approximate emissions per ton of goods and per kilometer for sea and road transport:

Transport type	**Carbon dioxide emissions per ton·km (grams CO_2)**
Container ship (sea)	**Approximately 3 g CO_2/ton·km**
Truck (road)	**Approximately 80 g CO_2/ton·km**

As the table suggests, ships are highly efficient. Shipping one ton of material 1,000 km by sea can result in emissions of around 3 kg of CO_2, while the same transport by truck can produce approximately 80 kg. However, distance is a key factor. Even with efficient sea transport, long distances can still generate significant total emissions. Importing from China, for example, would involve a sea journey of around 20,000 km, corresponding to approximately 60 kg of CO_2 per ton of goods, not including additional domestic transport.

For a glass balustrade (weighing 50–100 kg including glass and aluminium), transport from China could generate several kilograms of CO_2 in the same order of magnitude, or more, than transport from a European country by truck, and many times more than if the product were produced and delivered within Sweden.

ErgoSafe's model of local production eliminates transoceanic transport entirely. Domestic deliveries within Sweden are relatively short and can often be coordinated. There is also potential to optimise delivery routes and use vehicles powered by fossil-free fuels in the future. Taken together, this results in lower transport emissions compared to a scenario where products are shipped halfway around the world.

Swedish production provides global climate benefits

From a sustainability perspective, ErgoSafe's local and Swedish production model is highly advantageous compared to production in Europe or China. Swedish production results in lower emissions thanks to fossil-free energy and shorter transport distances, and it enables the use of market-leading materials such as Hydro REDUXA, which has an extremely low carbon footprint.

If the production of ClickitUp® had been located in China, the climate footprint would have been significantly higher and the environmental impact considerably more negative. Aluminium-related emissions are up to 75 percent lower and glass-related emissions around 50 percent lower with ErgoSafe's local production. This is in parallel with avoiding long-distance transport, which also reduces a substantial amount of transport-related CO_2.

Even when compared with an average European production scenario, ErgoSafe's Swedish model has clear advantages. Aluminium in Europe has become cleaner (around 6.3 kg CO_2/kg in 2023), but producing in Sweden means maximising the benefits of our almost fossil-free electricity and keeping the value chain short and transparent. Additionally, we avoid the risk that European production may indirectly result in higher emissions through the use of input materials that are themselves imported from countries such as China. Such choices can lead to hidden climate impacts within the supply chain.

ErgoSafe's strategy of owning the production process in Sweden means we have full control over every step and the opportunity to collaborate with the most sustainable partners at each stage. This gives us the right conditions to deliver genuine climate benefits and to create a truly sustainable product.


ClickitUp®
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