

The ultimate guide to supply chain transparency



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Renewable solutions, greater transparency

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“Welcome to **Stahl’s ultimate guide to supply chain transparency**. As a company, we’re committed to ensuring that supply chain risks such as **deforestation** and **human rights** issues are mitigated—reassuring brands and customers with **clear sourcing information** on every raw material we use. Only then can we ensure that our sourcing of raw materials is environmentally and ethically responsible.

That’s why Stahl has introduced a **dedicated supply chain** transparency role within **our Environment, Social, Governance (ESG)** department. This is an important milestone in our long-term ambition to examine and report on every aspect of our supply chain, paving the way for a lower-impact chemicals industry. Why now? Companies like Stahl are increasingly transitioning to **products based on renewable feedstocks**, such as biomass, captured greenhouse gases and waste plastic. This is an essential step on the way to **de-fossilizing the chemicals industry**. But we also need to ensure that these materials are sourced according to the highest environmental and ethical standards.

That’s why we’re committed to certifying as many of our raw materials as possible—starting with **the highest priority** renewable raw materials like plant-based biomass. These materials need to be sourced with care, to ensure that the land they are grown on is not subject to supply chain risks. We will continue to expand our scope as the team grows—raising awareness about the importance of supply chain transparency among customers and suppliers.”

Lidia Martínez

Supply Chain Transparency Manager, at Stahl



Beyond “Purpose”

A company is only as ethical as its least ethical supplier

Across both B2B and B2C, customers are keener than ever to buy into brands with strong sustainability credentials. But this requires much more than a “purpose statement”—brands are increasingly expected to show what actions they’re taking to reduce their environmental impact. And it’s not just

about greenhouse gas (GHG) emissions ...

With awareness growing of issues around raw material sourcing, customers expect companies to report on more than just the direct impacts of their activities—taking into consideration the holistic impact their business has on people and the environment.

Definition of supply chain transparency

Supply chain transparency requires a company to have full oversight of its entire value chain, with verifiable ethics and environmental credentials for each of its upstream partners and suppliers. This includes direct (Tier 1) and indirect (Tier 2 and 3) suppliers.

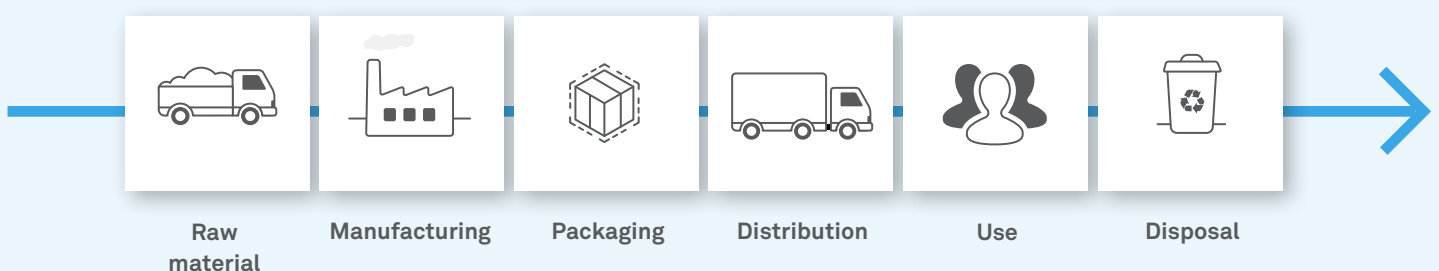


Case study: The big greenwashing sweep

In 2021, the European Commission (EC) conducted a sweep of EU consumer websites to look for brands that were issuing dubious environmental claims. It found that “in **59%** of cases, the trader had not provided easily accessible evidence to support its claim.” A similar report by the International Consumer

Protection and Enforcement Network (ICPEN) found that **40%** of companies globally make misleading environmental claims. It’s part of a wider trend that’s seen governments and regulators cracking down on unevidenced sustainability claims. With companies under increased scrutiny, it’s become clear that consumers and regulators will not accept incomplete or misleading information—making it essential to back up all claims with verifiable sourcing and production information.

Depiction of a transparent supply chain



“Nowadays, purchase decisions are based on much more research into the provenance of products—right down to the raw materials that go into them—as well as the environmental credentials of the company itself. We’re seeing more and more B2B customers behaving like switched-on B2C customers; they will ask for detailed data on emissions and information on what you’re doing to reduce your environmental impact. With effective life cycle assessments and supply chain mapping, we can identify emission hotspots and act with precision.”

Mi Yan

Environmental Impact Manager, at Stahl

¹ Ferroli, J., Kolanko, K. and Wigand, C. (2021) Screening of websites for ‘greenwashing’: half of green claims lack evidence. European Commission - European Commission. Available at: https://ec.europa.eu/commission/presscorner/detail/en/ip_21_269

² Labbé, S. (2022) Global report finds that 40% of companies make misleading environmental claims. Business & Human Rights Resource Centre. Available at: <https://www.business-humanrights.org/en/latest-news/global-report-finds-that-40-of-companies-make-misleading-environmental-claims/>



Going to the source

*Transparency isn't just what you do –
it's where you look*

Previously, ESG strategies have tended to focus on the **carbon footprint** of activities carried out directly by a company, like operating factories. But it's equally important to report on **environmental, social, and governance** (ESG) standards at every stage of the value chain, particularly for upstream activities such as raw material sourcing. This means the accountability journey starts from the very first stages of production, for example when a crop used for biomass in bio-based products leaves the farmer's field.

At Stahl, we're thinking **beyond carbon-centric sustainability goals**. To be a **truly responsible business**, we need clarity on where all our raw materials are coming from to ensure they're being produced to the highest ethical and environmental standards. Only by putting **these ESG issues** at the core of our communications with suppliers, customers, and brand owners can we forge a path toward a low-impact chemicals industry.



“End-to-end” transparency

Shining a light on every link in the supply chain

With consumers, brands, and regulatory bodies increasingly concerned about the provenance and environmental impact of products, a holistic approach to supply chain transparency is key to risk management and accountability. This way, companies can give consumers an “end-to-end” insight into exactly where their products came from.



Supply chain risks



Corruption



Deforestation



Chemical
pollution



Human
rights violations



Food
insecurity



Biodiversity
loss

³ 2030 strategy (2022). Better Cotton Initiative. Available at:
<https://bettercotton.org/who-we-are/our-aims-strategy/2030-strategy/>



Case study:

[The Better Cotton Initiative](#)

The Better Cotton Initiative (BCI) is a multi-stakeholder non-profit organization that aims to improve the transparency of cotton supply chains. It includes global brands such as IKEA, H&M, Adidas and Gap. Farmers who sign up for Better Cotton standards commit to higher standards of environmental stewardship (including reduced pesticide use) and ethical working practices. Brands that source their cotton from BCI-certified suppliers are

guaranteeing improved smallholder livelihoods, enriching soil health, and contributing to mitigating the worst effects of climate change. Today, almost a quarter of the world's cotton is produced according to Better Cotton standards, with 2.4 million farmers trained in more sustainable farming practices. Initiatives like this are key for driving positive impact across value chains.

The missing link

Is your company a transparency catalyst?

Supply chain transparency only works if every actor in the value chain plays its part. But due to the complex and interconnected nature of the global chemicals supply chain, it's traditionally been hard to report on the origins of chemical feedstocks with 100% accuracy. So, it's up to brands like Stahl – who are strategically situated within the value chain—to be catalysts for **whole-value-chain transparency** and **enhanced environmental stewardship**. By working as closely as possible with our value-chain partners, companies like Stahl can create a “chain of custody” that offers maximum transparency over the entire product lifecycle, from raw material to end product.

But this can only be achieved through multi-stakeholder engagement on supply chain transparency within your company, including the **Procurement**, **ESG**, and **Compliance departments**:

Sustainability

Drive positive social and environmental impact across the value chain.

Strategy

Create a future-proof strategy built on long- and short-term objectives.

Data & Analytics

Disclose and use real-time and data-driven information to enable decision-making



Procurement

Focus on accurate supplier mapping and assessment

Customer & Innovation

Use innovation technologies for a customer-centric supply chain

Technology Solutions

Integrate and embrace technical capabilities and solutions



What is a chain of custody?

A **chain of custody** provides verifiable proof of origin of any substance or item that requires careful certification regarding its provenance. This can range from priceless artworks to crime scene evidence. The same also applies to raw materials and feedstocks. **In the chemical industry, a chain of custody records the entire sequence of control, custody, and trade in the supply chain—from the extraction of raw**

materials to the sale of the finished product. To achieve this, it is necessary to standardize chain-of-custody models, preferably via independent third-party certification such as **ISCC PLUS** or **REDcert**². Stahl's goal is to have a chain of custody for all its renewable carbon-based strategic products.

Building a low-impact value chain

Context is essential when integrating transparency into your business model

The more brands that successfully engage value-chain partners (including customers and suppliers) in the dialogue around sustainable sourcing, the more benefits will be brought for people and the planet. This way, brands can become catalysts for positive change in their industries, helping to spread responsible sourcing practices throughout their value chains – and building up a critical mass of low-impact suppliers.

All brands have a responsibility to leverage their position in the value chain to encourage greater transparency around raw material sourcing. It's only by working with all our value-chain partners that we can create meaningful and lasting change. But to make these changes effective, it's necessary to embed responsible sourcing right at the start of the product development process.

Stahl's approach to supply chain phasing

1

Mapping out every link in our value chain via collaboration with suppliers and life cycle assessments (LCAs).

2

Carrying out risk assessments and due diligence audits for issues like corruption, biodiversity loss, and human rights violations, to establish a chain of custody built on responsible sourcing practices.

3

Facilitating dialog at various stages of the value chain to encourage suppliers – both direct and indirect – to get certified to standards such as ISCC PLUS. If relevant standards are not met, alternative suppliers should be selected.



Positive impact, certified

*Purpose without a concrete
action plan is all talk*

Across industries, brands are reframing responsible sourcing as a joint goal that can only be achieved through collaboration. This means industry leaders are taking on the responsibility of helping to drive supply chain transparency—supporting all value-chain partners as they take action to certify their raw materials and processes. This will be achieved in partnership with trusted third-party certification bodies such as International Sustainability and Carbon Certification (ISCC) and REDcert².

Site certification

Receiving certification such as **ISCC PLUS** or **REDcert²** ensures that your company has the ability to create products containing renewable feedstocks and accurately measure the amount of renewable feedstock that goes into each product. In 2022, Stahl certified two sites, in

Germany and the Netherlands, with more planned in the coming years. This allows us to produce products based on renewable feedstocks, using a mass balance chain of custody approach. The site certificates are publicly available.

Chains of custody need third party certification



Guarantee
traceability



Good
agricultural
practices



Human rights
are respected



Deforestation
-free



No harming
biodiversity



No greenwashing

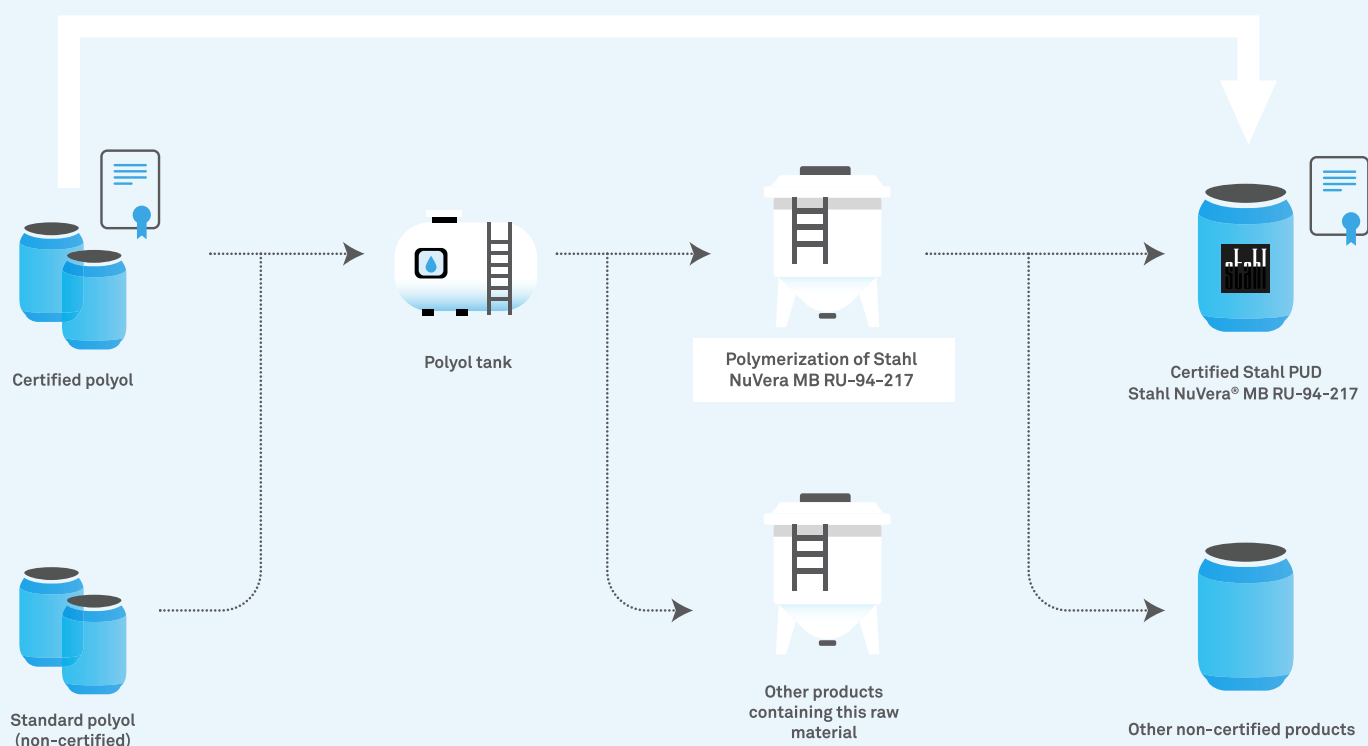
Relevant CoC certifications in
the chemical industry



Mass balance accounting explained

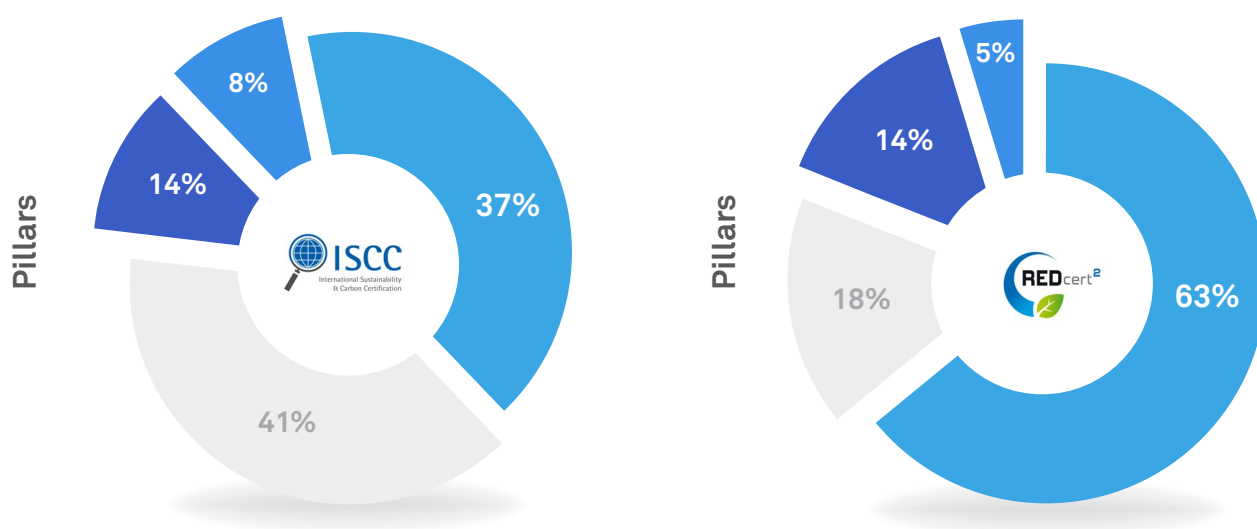
Mass balance is a term for a chain of custody model involving “balanced volume reconciliation.” In the mass balance model, the volume of certified product entering the factory is controlled and an equivalent volume of product leaving the factory can be sold as “mass balance certified.” In the case of bio-based raw materials, for example, some chemical products may contain a mixture of certified biomass (e.g., post-agricultural waste) and fossil-based feedstocks.

Mass balance at Stahl



Provenance standards compared

Different certification standards are used depending on the nature of the raw material under scrutiny and the requirements of your customers. Below is a diagram explaining the relative focus areas of two of the most widely recognized certifications in the chemical industry: **ISCC PLUS** and **REDcert²**.



Source: <https://standardsmap.org/en/compare>



37% Environment

41% Social

14% Management & Ethics

8% Quality

Legend

- Environment
- Social
- Management & Ethics
- Quality



63% Environment

18% Social

14% Management & Ethics

5% Quality



Case study: **Stahl NuVera® MB RU-94-217**

Stahl is in the process of launching its first **REDcert²**-certified coating product: the new water-based PU dispersion **Stahl NuVera® MB RU-94-217**. Stahl NuVera® is Stahl's renewable-carbon range of polyurethanes. By replacing fossil-based feedstocks with renewable alternatives, **Stahl NuVera®** helps **fashion**, **footwear**, and **upholstery** manufacturers to **reduce their environmental impact** – while still providing excellent technical performance. The new **Stahl NuVera® MB RU-94-217** replaces **60%** of the fossil-based raw material content that would otherwise have been required

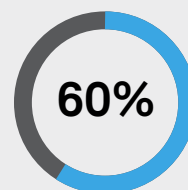
for its production with **REDcert²**-certified sustainable waste biomass. **Stahl NuVera® MB RU-94-217** is a very soft and flexible low-VOC polyurethane resin that can be used as an adhesive or skin layer in transfer-coated garments, or with synthetics. It meets the ZDHC (Zero Discharge of Hazardous Substances) organization's latest restricted substance recommendations, MRS L 3.0. The amount of bio-based content in the product is verified using the mass balance accounting approach (see the infographic on page 19).

"To support the many brands and customers in the fashion, footwear, and synthetics markets that are looking for renewable-carbon-based product solutions, we are committed to continuing the expansion of our Stahl NuVera® renewable-carbon-based polyurethane portfolio. Even though we already have a versatile toolbox of coating products, I'm convinced we have only just scratched the surface of the possibilities offered by more responsible material solutions."

Eric Timmermans

Global Market Manager for Synthetics, Performance Coatings Division, at Stahl

60% of the fossil-based raw materials required to manufacture this product were replaced by sustainable certified biomass.



The letter of the law

There's nowhere to hide unethical business practices

It's not just consumers who are demanding greater supply chain transparency: regulators across the world are also cracking down on opaque sourcing and unethical business practices. In Europe and elsewhere, environmental watchdogs are seeking out and penalizing companies for false and misleading "greenwashing" claims. And with a wave of new ESG regulations in the pipeline, it's never been more essential to have complete, accurate information on every stage of your supply chain.

Get to know existing and proposed supply chain regulations

The proposed [EU Green Consumption Pledge⁵](#) aims to empower consumers with reliable sustainability and durability information to reduce unsustainable practices such as “greenwashing” and “planned obsolescence.”

The EU’s [legislative proposal on the substantiation of green claims⁶](#) has a similar goal, to ensure all brands’ sustainability claims are “reliable, comparable, and verifiable across the EU.”





Available references

⁵ Consumer policy – strengthening the role of consumers in the green transition (no date). European Commission. Available at: https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12467-Consumer-policy-strengthening-the-role-of-consumers-in-the-green-transition_en

⁶ Environmental performance of products & businesses – substantiating claims (no date). European Commission. Available at: https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12511-Environmental-performance-of-products-businesses-substantiating-claims_en

⁷ Just and sustainable economy: Commission lays down rules for companies to respect human rights and environment in global value chains (no date). European Commission. Available at: https://ec.europa.eu/commission/presscorner/detail/en/ip_22_1145

Case study: The EU's Proposal for a Directive on Corporate Sustainability Due Diligence

To address the issue of unethical and unsustainable business practices hidden in companies' supply chains, the European Commission (EC) has created a Proposal for a **Directive on Corporate Sustainability Due Diligence**. This will compel companies to ensure that high environmental and humanitarian standards are upheld throughout their value

chains. The proposed directive aims to impose a corporate due diligence duty on large European companies, as well as corporations from third-party countries operating in the EU. Punitive fines and supervisory authorities would ensure that strict ethical and environmental standards are adhered to at each stage of global value chains, from raw materials to the end product.



If adopted, it will require companies that fall under its scope to:

- 1 Identify actual or potential adverse human rights and environmental impacts
- 2 Prevent or mitigate potential impacts
- 3 Bring to an end or minimize actual impacts
- 4 Establish and maintain a complaints procedure
- 5 Monitor the effectiveness of the due diligence policy and measures taken
- 6 Publicly communicate on due diligence
- 7 Declare a Scope 3 (upstream) emissions target.

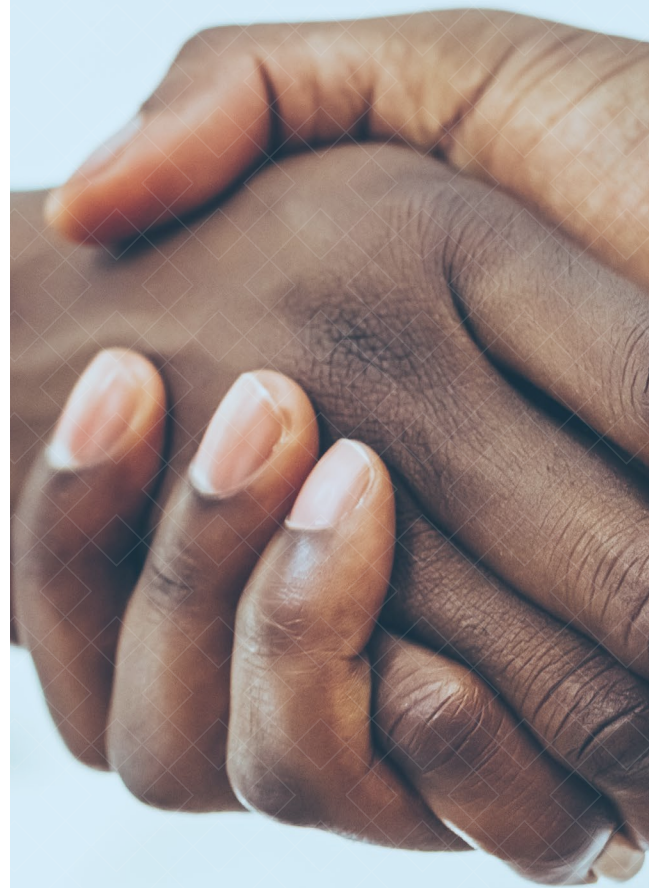
Read more: https://ec.europa.eu/commission/presscorner/detail/en/ip_22_1145



Leader or laggard?

*The business landscape is changing
– and transparency is no longer
optional*

Supply chain transparency isn't just important to get ahead of regulatory changes. Being a supply chain transparency champion will also be a competitive advantage for companies. Those judged to be moving too slowly will be penalized by customers, who are increasingly aware of the impacts their choices have on the environment.



Case study: Blockchain in supply chain transparency

Stahl takes an active role in developing the use of advanced technological solutions such as blockchain to simplify the verification of chains of custody in the chemicals industry. In partnership with blockchain developers, Stahl is creating a blockchain-based ecosystem and suite of tools to enable a more streamlined product certification process. This will be achieved by creating digital “product passports” that contain detailed information about each end product’s makeup and production. This will make it easy to see where the relevant raw materials came from, how they were obtained, and how they were processed. Partners would be able to access and collaborate on a shared ledger that records this information immutably, meaning it cannot be altered or deleted. This will help unlock a new level of transparency in the chemicals supply chain.

“With many brands lagging on sourcing certification, customers will appreciate reliable, verified information on the raw materials that go into products. Now is the perfect time to position ourselves as a frontrunner in value-chain transparency by using advanced technology, such as blockchain, to verify the sources of raw materials.”

Émilie Musso

Digitalization Project Manager, at Stahl



Transparently future-focused

It's time to meet consumers' expectations and planetary needs

“Developing a whole-value-chain approach to supply chain transparency not only means you’re helping to build a more secure future for the planet – but you’re also distinguishing yourself as a frontrunner in responsible sourcing and production methods. Being a leader in this area also makes good business sense. Companies that move proactively will gain traction with increasingly informed buyers, putting them in a great position to innovate for the future.”

Lidia Martínez

Supply Chain Transparency Manager, at Stahl



Want to find out more?

Get in contact with [Lidia Martínez](#) today or review our range of low-impact, responsibly sourced [coating solutions](#).

www.stahl.com

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