

ZENDA

(JBS)

# NAPA VEGGIE

A photograph of a brown leather sofa, possibly a sectional, surrounded by a dense arrangement of lush green tropical plants. The plants include large Monstera leaves with characteristic holes and various types of palm leaves. The lighting is soft, highlighting the textures of the leather and the vibrant green of the foliage.



## Sustainable Leather

### 1) Bio-based Finishing

- Bio-based finishing products

### 2) Veggie Crust

- Ecotan tanning technology
- Ecotan re-tanning technology

### 3) KIND Leather

# Stahl Ympact<sup>®</sup>

Mayo 2021

**GREEN FINISHING**

# Stahl Ympact®

*Leather Chemical Solutions made with renewable feedstocks*

As part of the Stahl Ympact® concept and as a first step, Stahl introduces in the following its first product portfolio of renewable carbon polyurethanes for base- and topcoats in leather finishing

Between 25% and 70% of the content of these solutions is renewable, since it comes either from biomass feedstock or carbon-captured CO<sub>2</sub>

[stahl.com](http://stahl.com)

# Stahl Ympact<sup>®</sup>: Value Proposition



***Stahl Ympact<sup>®</sup> reduces the environmental footprint without compromising on quality and performance of the leathers***



High  
Renewable  
Carbon\*  
content



Low  
VOC



Excellent  
performance



Highly  
recommended  
for automotive  
leathers



Suitable for finishing all  
types of leathers,  
especially crust with  
Stahl EasyWhite Tan™

[stahl.com](http://stahl.com)

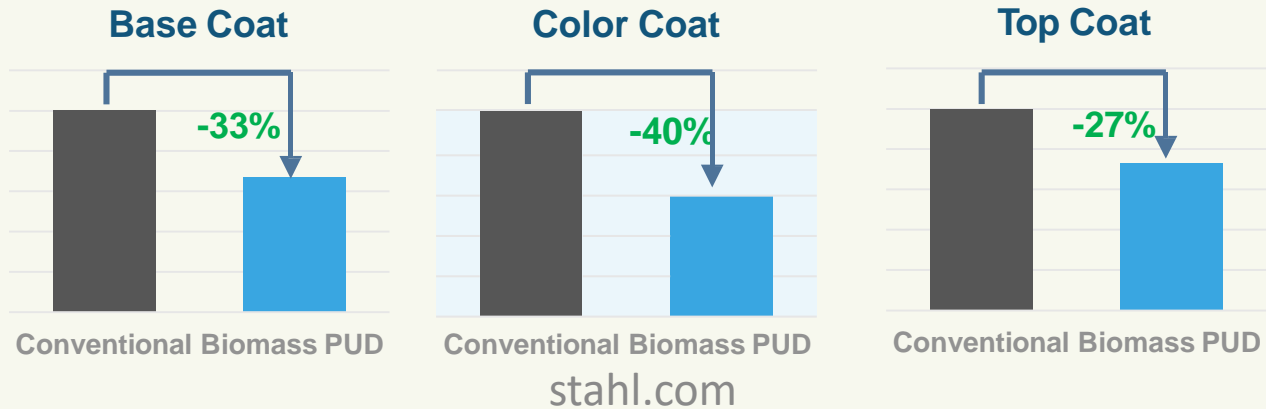
***Stahl Ympact<sup>®</sup> delivers an equal or improved functional performance to conventional alternatives without retooling or requalification***

\*measured by ASTM D6866

# Stahl Ympact<sup>®</sup>: Carbon Reduction



*Predicted Fossil Carbon Reduction in Automotive Basecoat, Color-coat and Topcoat*



## FOSSIL CARBON REDUCTION IN APPLIED DRY FINISH COATS

Calculation based on exchange of primary PUDs in the Finish Coats

## Shift to Bio-circular

Ecotan is an innovative technology developed by Silvateam to produce a new kind of leather that has excellent performance standards, is safe for all and is a truly circular material.

Tanned with natural tannins, Ecotan leathers are free of hazardous substances, creating a naturally healthy environment for the end user. At the end of their useful life, they can be recycled into organic fertilizers.



The Ecotan leathers are free from chrome, metals, glutaraldehyde and other hazardous substances.

This will permit:

1. to recycle the leathers at the end of their useful life but also leather cuttings resulting from leather production as well as the final product
2. to positively answer to legislators in EU, USA and in many countries around the world that are making very strict regulations about the potential use of harmful substances.



# The Ecotan Project

Nature is our Partner, not the Enemy

*It's time for something different that's  
better for us and the planet.*



Today consumers rank sustainability as a key factor when buying most products by giving preference to items that are harmless, durable and reusable.

In a circular economy the value of products and materials is maintained for as long as possible. What was previously considered waste is now a valuable resource to be reintroduced into the production cycle.

Bio-circular thinking takes this a step further by employing materials designed to start and end with nature.



## 1. Birth

Ecotan formulations start with nature using plant-based tannins that are grown, harvested, then processed sustainably. Silvateam has applied human ingenuity to combine renewable **natural tannin** sources with **harmless man-made additives** to create something entirely new.



## 2. Life

Ecotan's nature-based approach results in leathers that match the performance bar set by chrome and glutaraldehyde tanning while avoiding dangerous ingredients. The result is a tanning system that is **safe, green and clean**. Nature, improved.



## 3. Next life

Ecotan tanning formulations are bio-circular. They and the leather they've been combined with are designed for a next life as a **superior organic fertilizer** and so are returned to nature, enriching it instead of creating problems for us and the planet.

# 1 Birth

## Sustainable and Harmless Raw Materials to Create an Entirely New Leather

- Tannins have been protecting the plants for million of years
- Prevent Leather from descomposing, once established, their bond remain in place for the entire life of the Leather article
- Are sourced from different plants: Chestnut and Quebracho Wood, Tara pods and Gallnuts.
- Ecotan tannins have undergone an **LCA** (Life Cycle Assessment), a cradle-to-cradle analysis technique to assess environmental impacts associated with all the stages of a product's life.



*Chestnut tannin is the primary ingredient in all Ecotan products.*

Silvateam is the first company offering leather tanning products to be rewarded with the forest certification PEFC for its production. This certification is proof of the company's commitment to the protection of forests in compliance with strict local forestry regulations and of the communities that rely on those same forests for their livelihood.



# 2Life

Better for Us and the Planet



- Silvateam tannin extracts are harmless to humans and are produced to food grade standards.

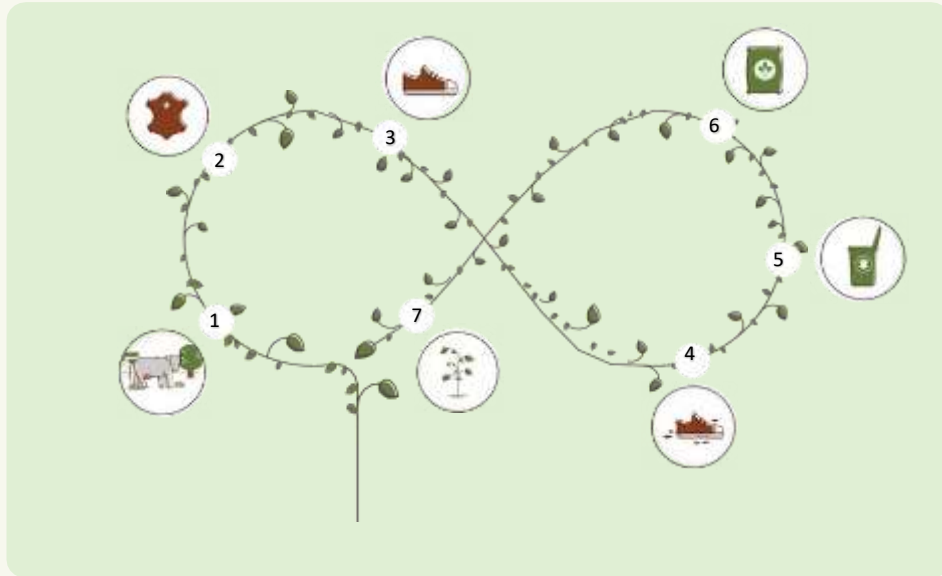
Silvateam's tanning system is paired with other inputs, like oils, colors, finishing waxes and pigments to create finished leather made to this new standard.

## 3. Next Life

### Bio-circular Products

Ecotan leathers are made of natural, sustainable materials and can be re-used in a new product.

Products designed to be fully circular are the necessary next step if we are to preserve our planet and ensure a future for our children.



Ecotan leather can be transformed into valuable fertilizers used by crops grown to certified organic standards.

Leather scraps and used Ecotan articles are given a new life as a plant fertilizer that releases back to nature the nutrients originally taken 'on loan' from the hide.

The result - protein hydrolysate - is used to make a granular fertilizer, that contains organic substances, nitrogen and phosphorus, engineered for use in organic agriculture.

Untanned leather (raw hide) is of course biodegradable and therefore bio-circular.



### This Fertilizer:

- **Is organic farming compliant.**
- **Is released slowly over time** reducing the overall quantity of fertilizer needed to grow crops.
- Is high in organic nitrogen and carbon content.
- **Improves soil fertility** by stimulating the activity of soil microorganisms.

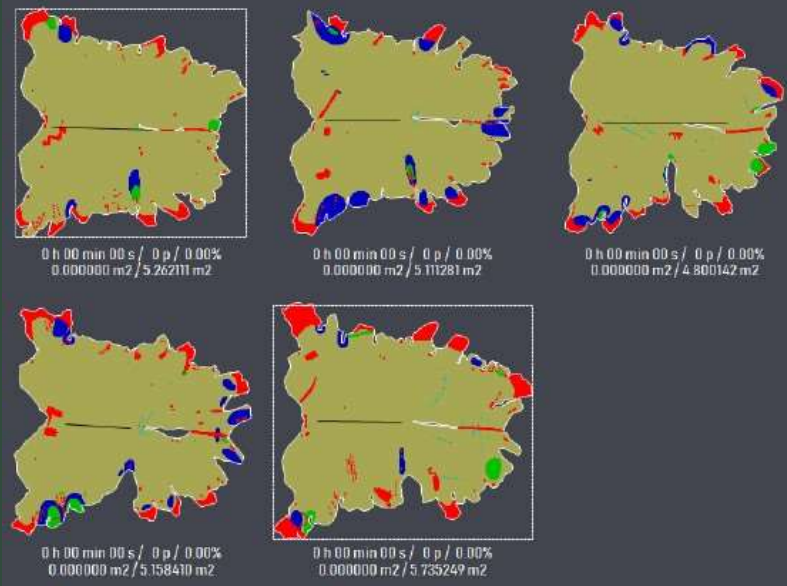




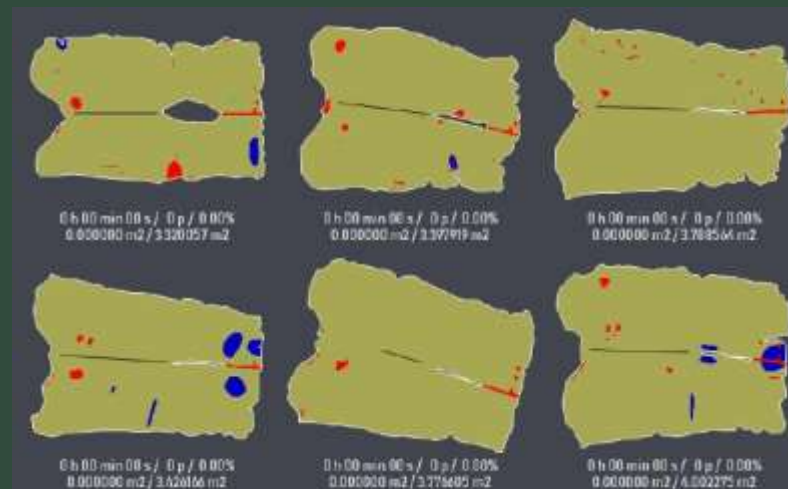
KIND  
LEATHER®

# KIND LEATHER

BEHIND THE CONCEPT



Regular Leather



Kind Leather







# KIND LEATHER® Life Cycle Assessment (LCA)



Sustainability | Progress | Innovation | Network



## Based on high quality data

- **Recognized Standards (ISO 14040, 14044)**
- **Supported by proved evidence**
- **Most updated** category rules (Finished Bovine Leather Product Category Rules Version 3.01)
- Includes **primary farm data**, which provides unique precision to the assessment.
- **200 variables** considered.



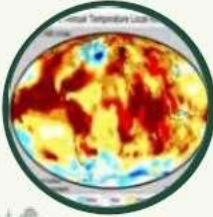


## Impact Categories

ACIDIFICATION



GLOBAL WARMING POTENTIAL



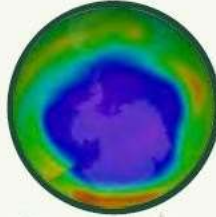
EUTROPHICATION



PHOTOCHEMICAL OXIDATION



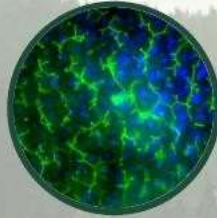
OZONE LAYER DEPLETION



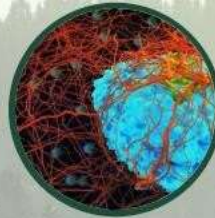
ABIOTIC DEPLETION



WATER USE



HUMAN TOXICITY (NON-CANCER)



HUMAN TOXICITY (CANCER)



FRESH WATER ECOTOXICITY



WATER CONSUMPTION



Spin360

Sustainability | Progress | Innovation | Network



*Overall results per impact category (referring to 1 m<sup>2</sup> of both products)*

| IMPACT CATEGORY               | UNIT         | FUNCTIONAL UNIT | KIND LEATHER | FULL SUBSTANCE | VARIATION |
|-------------------------------|--------------|-----------------|--------------|----------------|-----------|
| Climate change                | kg CO2 eq    | m <sup>2</sup>  | 1,224E+01    | 2,139E+01      | -42,77%   |
| Climate change - Biogenic     | kg CO2 eq    | m <sup>2</sup>  | 3,276E+00    | 5,392E+00      | -39,24%   |
| Ozone depletion               | kg CFC11 eq  | m <sup>2</sup>  | 6,985E-07    | 1,064E-06      | -34,38%   |
| Human toxicity, cancer        | CTUh         | m <sup>2</sup>  | 6,181E-09    | 9,344E-09      | -33,85%   |
| Human toxicity, non-cancer    | CTUh         | m <sup>2</sup>  | 2,345E-07    | 3,920E-07      | -40,18%   |
| Particulate matter            | disease inc. | m <sup>2</sup>  | 1,539E-06    | 2,678E-06      | -42,52%   |
| Ionising radiation            | kBq U-235 eq | m <sup>2</sup>  | 1,057E+00    | 2,711E+00      |           |
| Photochemical ozone formation | kg NMVOC eq  | m <sup>2</sup>  | 3,475E-02    | 5,954E-02      | -41,63%   |
| Acidification                 | mol H+ eq    | m <sup>2</sup>  | 2,146E-01    | 3,568E-01      | -39,86%   |
| Eutrophication, terrestrial   | mol N eq     | m <sup>2</sup>  | 8,300E-01    | 1,397E+00      | -40,58%   |
| Eutrophication, freshwater    | kg P eq      | m <sup>2</sup>  | 2,481E-03    | 4,266E-03      | -41,85%   |
| Eutrophication, marine        | kg N eq      | m <sup>2</sup>  | 8,243E-02    | 1,384E-01      | -40,43%   |
| Ecotoxicity, freshwater       | CTUe         | m <sup>2</sup>  | 1,843E+02    | 3,437E+02      | -46,36%   |
| Land use                      | Pt           | m <sup>2</sup>  | 3,646E+02    | 6,059E+02      | -39,83%   |



## Comparison Results



IMPACT  
INDICATORS

|                                  |        |   |
|----------------------------------|--------|---|
| EUTROPHICATION                   | -42.1% | ↓ |
| GLOBAL WARMING POTENTIAL         | -43.6% | ↓ |
| ABIOTIC DEPLETION (FOSSIL FUELS) | -41.6% | ↓ |
| WATER USE                        | -35.0% | ↓ |
| HUMAN TOXICITY (CANCER)          | -44.4% | ↓ |
| HUMAN TOXICITY (NON-CANCER)      | -39.9% | ↓ |
| FRESHWATER ECOTOXICITY           | -37.2% | ↓ |
| WATER CONSUMPTION                | -17.0% | ↓ |





# global warming POTENTIAL

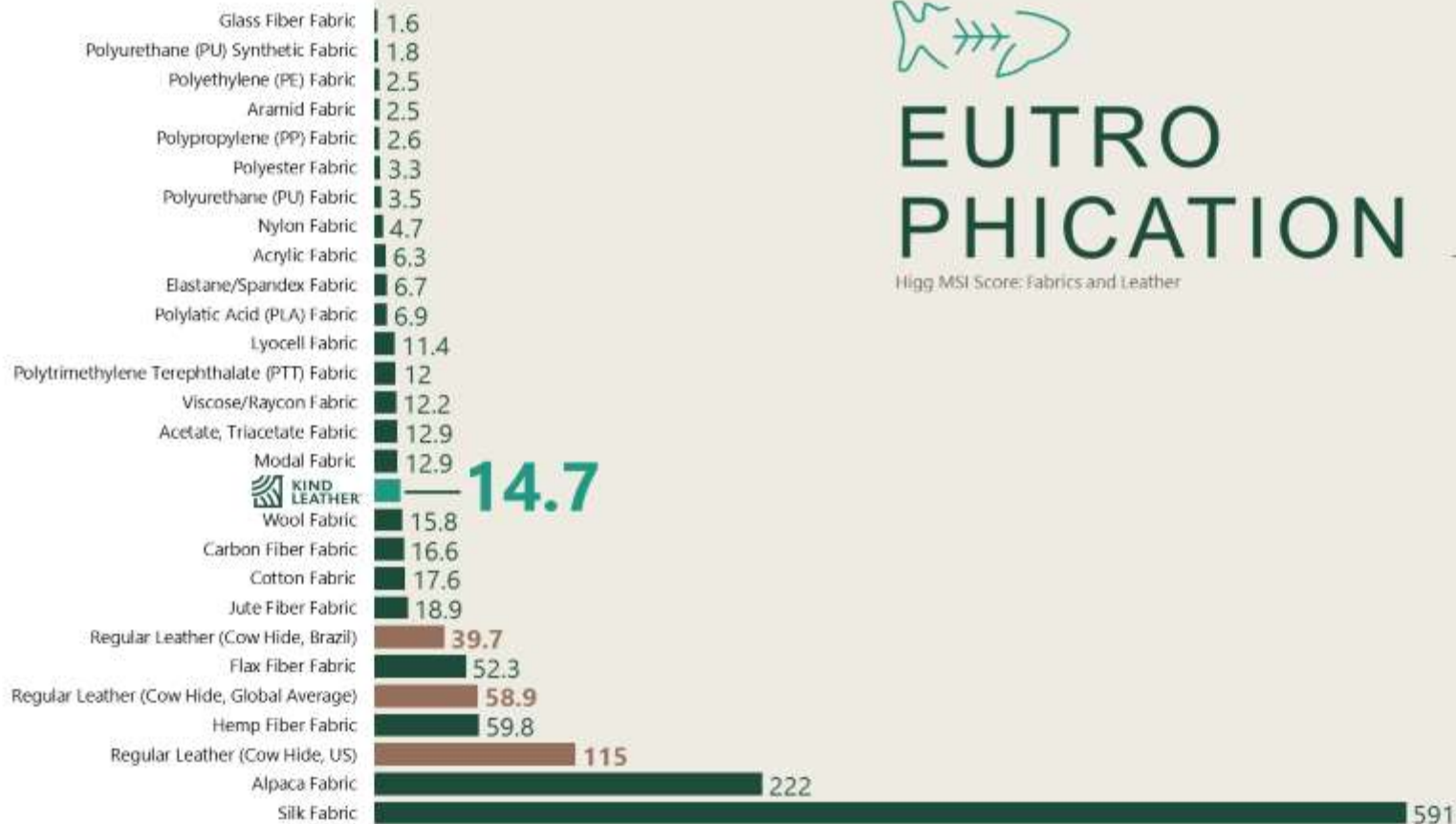
Higg MSI Score: Fabrics and Leather





# EUTROPHICATION

Higg MSI Score: Fabrics and Leather





water

# SCARCITY

Higg MSI Score: Fabrics and Leather



**BE KIND, BE LEATHER**

