The 7 strengths of stone wool growing media

Grodan®

Part of the ROCKWOOL group

The 7 strengths

A uniform growing medium

Water saving properties

Respect for biodiversity

A bountiful natural resource

Transparency and proximity

100% recyclable

Food safety compliant

Introduction

How the natural attributes found in rock can benefit plants.

Stone and the cultivation of plants go perfectly hand in hand. Transforming and utilising an abundant natural resource to benefit humanity is something we find rather magical and exciting. With Grodan stone wool growing media growers cultivate fresh produce that contribute to the health of consumers around the world.

Our research is aimed to further explore the possibilities of stone wool growing and to create solutions to respond to the biggest challenge faced by the world today: to a stark population increase and growing economy, both of which cause a rise in demand for healthy, fresh food. All while caring for the future of our planet. With a projection of 10 billion inhabitants in 2050 the world's population is set to increase by 2 billion from now creating a 70% rise in demand for food and consequently, a need for more agricultural land.

As part of the ROCKWOOL Group, the market leader in stone wool insulation, we benefit from the considerable resources of a global organisation. Each of our innovations rely on the power of stone. We spent the last 50 years to innovate growing media solutions. Thanks to our curiosity, our passion and our expertise we continue to innovate every day to further build upon the 7 strengths of stone wool growing.

Each of our products consolidates these 7 strengths into one goal: to reduce our impact on the environment while preserving the wellbeing of the world's population. Even after 50 years of research as experts in stone wool, we are conscious that the potential improvements are huge. We still have so much to learn, and each one of future innovations will open new perspectives capable of rising to the challenges of tomorrow.

Despite our 50-year history, we are just at the beginning of our story.

Sander van Golberdinge
Public Affairs Manager

Reading tip:

→ Grodan 50 years booklet

“A uniform substrate leads to precise plant behaviour and excellent root zone management”

A uniform growing medium

The quality and properties of Grodan stone wool growing media is always consistent thanks to a perfectly controlled manufacturing process. The stable quality results in a uniform substrate that leads to precise plant behaviour thanks to an excellent root zone management. This is the basis for an extremely consistent growing season.

It’s one of our primary research objectives to achieve a more even distribution of water and nutrients in stone wool. The latest generation of stone wool fibres, NG2.0 Technology creates optimal growing conditions for a whole season and allows roots to make even better use of the entire substrate. Uniformity is also an advantage to achieve an optimal connection between block and slab. The use of stone wool blocks in combination with Grodan slabs helps to avoid over-irrigation without the risk of drying out the blocks.

Finally, in combination with our innovative GroSens system the grower has 24/7 real-time insight into the WC, EC and temperature of the stone wool substrate. The new software platform e-Gro, provides smart recommendations based on the root zone, climate, crop and harvest data allowing our growers to further improve yield and quality of their crops.

Reading tip

→ Learn all about our NG2.0 Technology
→ Learn all about data driven growing

Water saving properties

Water management is a major topic in greenhouse cultivation. Over the last 50 years, we have been playing our part in improving water resource optimisation through our investments in research and development.

To remain at the forefront of the latest innovations we work together with scientists from Wageningen University & Research (WUR). WUR has set up the greenhouse of the future, a complex consisting of 7500 square meters of glass covering ninety departments used for research purposes. Together with WUR we have been working on an emission-free greenhouse. We use what we learn here to advise the growers.

Stone wool is an inert medium and the water including nutrient solution that it holds is in its entirety available to the plants. We advise our growers to collect the waste water, filter it and reuse it. To bring this a level further, we have also developed tools and software that enables growers to collect data from sensors within the root zone area, so that they can adapt their water and nutrient supply based on the amount the crop needs.

One of the tools we've developed is a calculation tool, allowing us to see the water savings achievable by growing on steerable stone wool growing media. Our goal is to demonstrate the positive impact our method of cultivation has on worldwide water, fertiliser and land consumption.

These insights, developments and innovations have their impact! Today, it is possible to produce one kilo of tomatoes while using only four litres of water in a high-tech greenhouse compared to at least sixty litres when grown in soil.

Reading tip

- → Learn more on water management
- → Learn how to make better use of your water
- → Read our blog on drought and preserving water
- → Download the ROCKWOOL Group's sustainability report

Respect for biodiversity

At a time when biodiversity is under threat, we are proud to be contributing to the safeguarding of our ecosystems. By significantly increasing yields per square meter, crops grown on stone wool growing media are a means of supporting the planet's growing demand for food by using a smaller surface area. Furthermore, areas that have been released from agriculture can be given alternative uses, such as being returned to nature, where biodiversity is at its best. Nevertheless, greenhouses are protected areas too — mini ecosystems where bees can pollinate undisturbed, where water and other inputs are used accurately and sparingly, and where the rules of a circular economy are continuously respected.

Further upstream, stone wool itself is also manufactured in way that is respectful towards nature. We are committed to only extract basalt from non-protected areas and our extraction sites conform to the EU Ecolabel requirements, which also guarantees the protection of Natura 2000 designated areas. The EU Ecolabel is an important measure to demonstrate how we contribute to sustainability and transparency and is the ultimate quality check on our way of working. It underlines our drive to continuously reduce our environmental footprint and acknowledges our contribution to the sustainable production of fresh produce.

Reading tip

→ Download our Food Forward paper on biology lessons in the greenhouse

"By significantly increasing yields per square meter, crops grown on stone wool growing media are a means of supporting the planet's growing demand for food by using a smaller surface area."

A bountiful natural resource

The horticultural sector is well on its way to making the transition to a circular economy. The focus here is not on the production of large and cheap quantities of food, but rather on the sustainable use of natural resources. Such as soil, air, water, and residual flows (e.g. waste).

Every year the earth produces 38,000 times more basalt than ROCKWOOL uses to produce stone wool. In addition, stone wool can be recycled and by reintroducing recycled stone wool into the production process, the need for raw materials is reduced. By optimising the output of our production lines, 1 m^3 of basalt is enough to produce 50 m^3 of stone wool that can supply a city of 40.000 inhabitants with fresh tomatoes, cucumbers and sweet peppers!

Reading tip

→ Download our Food Forward paper on circularity

"Every year the earth produces 38,000 times more basalt than ROCKWOOL uses to produce stone wool."

Production sites in Europe

Transparency and proximity

By setting up factories close to horticultural areas, we maintain proximity to our customers as well we reduce our transport-related carbon footprint. Grodan factories operate in accordance with the highly stringent European regulations for working conditions and product quality. Our production lines respect strict rules around traceability, enabling us to identify the exact origin of our products at any point. With each delivery, customers receive a retrieval code, which allows us to identify the source of any potential issue.

Our factories are ISO 14001 certified which means we comply to the international standard that specifies requirements for an effective environmental management system. We have set five operational goals across energy, climate, water, waste and safety to track our performance and keep us accountable to our customers, colleagues and communities. These have been designed to drive progress on the United Nations Sustainability Development Goals (UNSDG) by reducing the negative impact from operations on material issues.

Grodan is proud to be the first and only manufacturer of stone wool growing media to be awarded the EU Ecolabel. As market leader, our ambition is to set the example for other manufacturers to commit to this same path, and to work together towards the future of our planet. By renewing the European Ecolabel certification, we demonstrate our ability to be transparent about our sustainable development policies.

Reading tip

→ Learn more about our factories and the EU Ecolabel
→ Learn more about how we source our factories

“Grodan reduces its transport-related carbon footprint.”

"Grodan stone wool growing media are 100% recyclable."

100% recyclable

Grodan stone wool growing media are 100% recyclable. The recycling solutions that we offer benefit the environment, our customers' business and society. They are more economical than using landfill sites and, at the same time, reduce waste production and logistical burden. On top, these enable growers to improve their sustainability profile and earn credibility with consumers searching for products that are more environmentally conscious.

The latest version of the EU Ecolabel requires that we offer access to recycling solutions for 70% of our volume sold across EU member states.

Meanwhile, the manufacturing process must integrate a minimum of 30% recycled materials. Used stone wool growing media are reused in new stone wool products as well as input material for the manufacturing of bricks, reducing the requirement to extract raw materials. The plastic foil is reused in new plastic applications and the organic material gets a new life as an ingredient in compost and soil enrichment products.

We are constantly on the look-out for new solutions for recycling of growing media at the end of a growing season as well as we strive to offer recycling services in all markets where we operate.

Reading tip

- → Learn more about Grodan recycling services
- → Read our blog on recycling
- → Seven things you should know about plastics
- → Why are we awarded the EU Ecolabel?

Food safety compliant

The production process of our stone wool has a positive impact on food safety. Stone wool is processed at 1500°C which eliminates any risk of contamination by fungal, bacterial or other pathogens. Our growing media are inert, this means that the water and nutrients supplied to the substrate are entirely for the benefit of the plants. On top, the growing media are also completely free from pesticides.

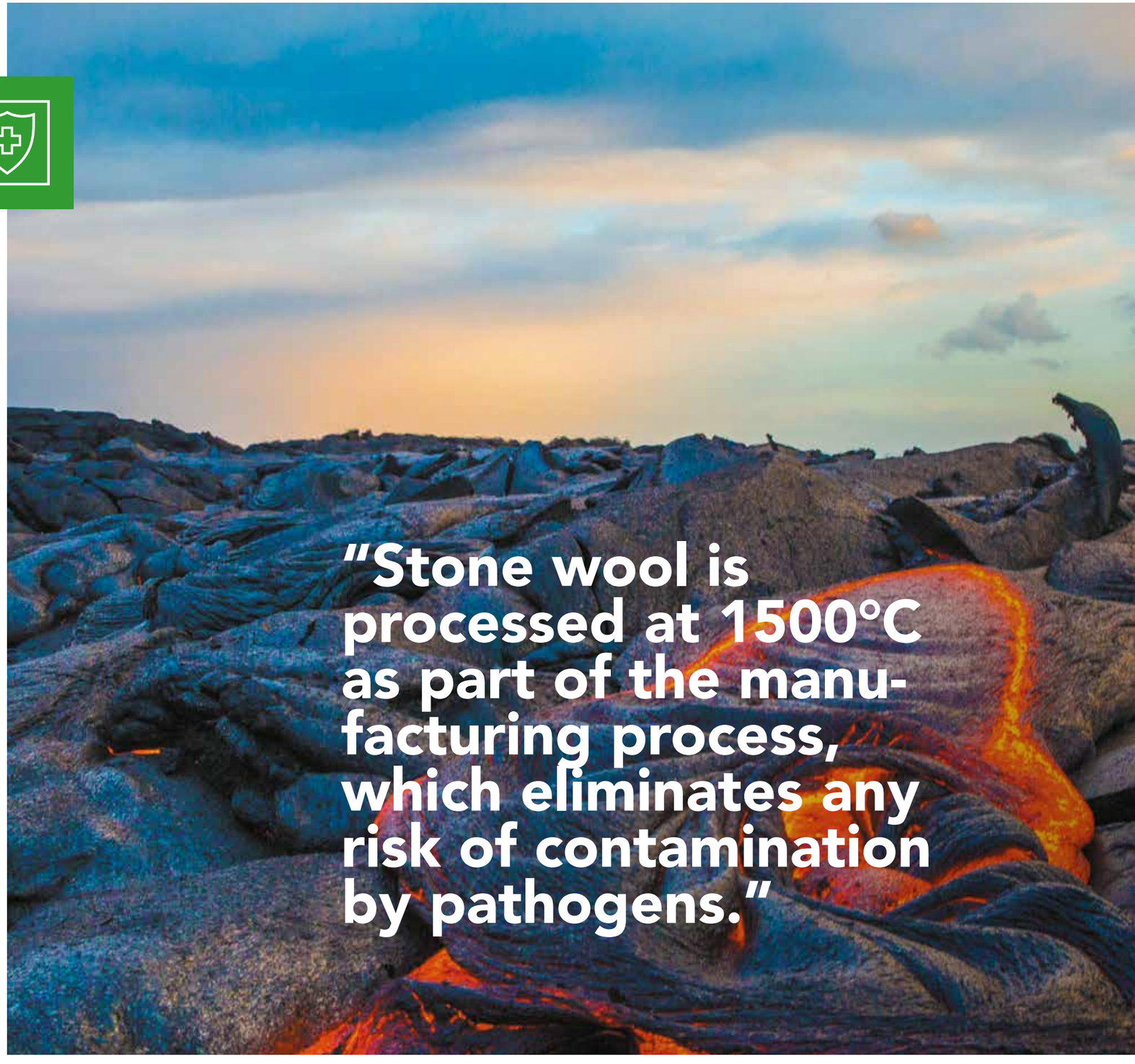
Next to ISO 9001 and ISO 14001 certification and the EU Ecolabel our growing media are RHP-certified. RHP-certified substrates meet the quality requirements for, for example, water absorption, air content, pH, EC and nutrients ensuring an optimal start of cultivation. Due to the RHP certification, KIWA (the certification body) ensures that our products do not pose any threats to either humans and/or the environment. The RHP quality mark not only applies to the final substrate but also to the raw materials used.

Finally, Grodan is also an associate member of the GLOBAL G.A.P., the globally recognized standard for the agricultural sector that enables producers to certify their activities in the areas of food safety, quality and sustainability.

Reading tip

→ Our certificates

EU Ecolabel: NL/048/001



Sources

A uniform substrate
In a joint trial at the Delphy Improvement Center (IC) in Bleiswijk, entitled "Reduction of Irrigation and Emissions", the GT Master slab with NG2.0 technology was used in comparison to several other watering regimes, and a water saving of 15% was demonstrated. Greater precision is possible during watering, especially over the winter months.

Respecting water
Water management
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Nutritional value
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Respect for biodiversity
https://www.un.org/sustainabledevelopment/biodiversity/

https://www.unep-wcmc.org/news/predicting-the-impact-of-land-use-change-on-biodiversity

An abundant natural resource
ISO 9001

Transparency and traceability
EU ecolabel
https://ec.europa.eu/environment/ecolabel/index_en.htm

Grodan supplies innovative and sustainable stone wool growing media solutions for the professional horticultural sector, based on Precision Growing principles. These solutions are, amongst others, applied for the cultivation of vegetables and flowers, such as tomatoes, cucumbers, sweet peppers, egg plants, roses and gerberas.

Sustainability plays a prominent role within Grodan, from the manufacture of stone wool substrates to end-of-life solutions. Grodan is founded in 1969 and active in more than seventy countries worldwide. The head office is in Roermond, the Netherlands.

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Grodan is the only stone wool substrate with the European Ecolabel.

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