

ROVERO TUNNEL GREENHOUSES

## SUPER STRONG AND SUPER TRANSPARENT EVO AC® FILM

HIGH-QUALITY TUNNELS SINCE 1968.

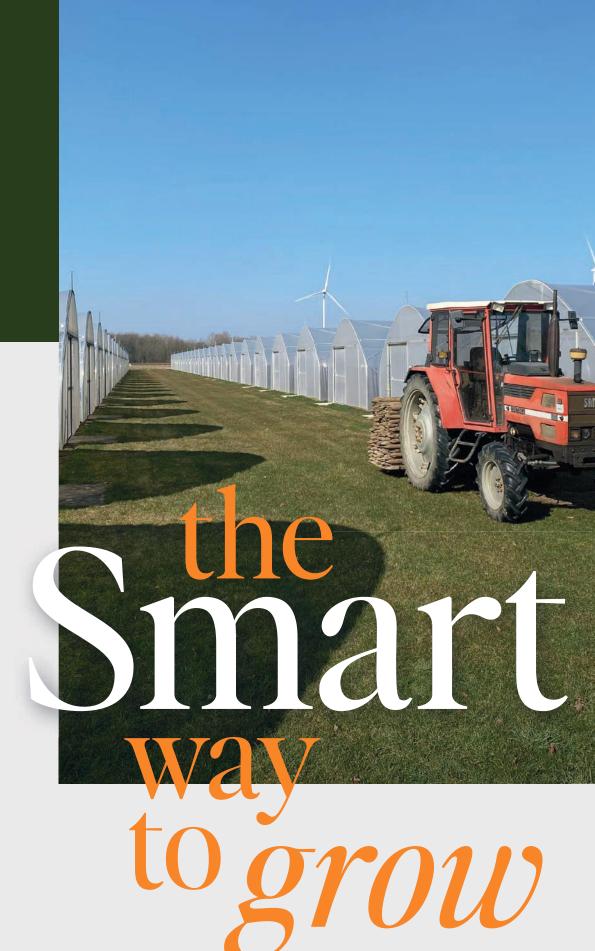
**ROVERO HAS BEEN PRODUCING** 

Netherlands. Thanks to large stocks, fast delivery

times are possible.

The entire production takes place in the

The tunnels of Rovero are equipped with an 8-layer film that features an anti-drip coating.







# Cultivating in a foil greenhouse extends the growing season up to two months.

The film cover provides a beautiful, diffuse light that the crop finds very comfortable. This is beneficial for both growth and the color and quality of the product. The side walls can, if desired, be fully open as well. Film tunnels not only extend the growing season but also result in a cleaner product compared to outdoor cultivation. This makes an investment in tunnels quickly profitable.

Rovero, the smart way to grow.







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### Discover the innovations of our new polyfilm

It has been six years since the EVO AC® film has been tested. According to the team, EVO AC, short for Evolution in Anti-Condensation, is the longest-lasting anti-drip film in the polyethylene greenhouse film market. Now that the film has been in use for several seasons, growers see how the film sustains the critical anti-drip and anti-mist features over an extended period, far exceeding that of conventional films.

Polyethylene (PE) films have transformed the greenhouse industry due to their superior functional properties, the lower initial investment, and ease of maintenance, compared to alternatives such as glass and polycarbonate. Despite being the most popular choice for several decades, conventional PE films have fallen short in providing extended Anti-Condensate (AC) (or Anti-Dripping) functionality due to the migratory additive-based composition of materials used. The composition of traditional poly films results in a gradual loss of these features well before the end of the film's lifetime, typically in 18-24 months. To exacerbate matters, conventional AC tends to cause mist (or fog) in the greenhouse during early morning and before dawn when sharp fluctuations in temperature occur.

### Condensation

The negative impact of condensation, dripping, and fog on crops are well-known, as they diminish the quality and quantity of light, harm crops, and create conditions for fungal diseases to develop. This not only leads to reduced yields and slower crop cycles but also poorer crop quality and a greater dependence on pesticides. As a result, farmers frequently replace their films years before their useful lifetime, which serves as proof of the importance of the anti-drip feature

In response to those persistent challenges, the supplier of the Rovero poly film, a leading manufacturer of greenhouse films, has developed a solution using nanotechnology. Their innovative 8-layer EVO AC film provides powerful anti-drip and anti-mist effects with superior mechanical strength and clarity. Most importantly, it maintains these critical features for a much longer period. In many cases, EVO AC was shown to endure for as long as the film itself, even when the film exceeded the guaranteed 4-year lifetime.

### No droplets

Since its launch in 2016, EVO AC has become the film of choice for thousands of professional growers worldwide across a diverse range of crops, from vegetables to flowers and fruits. During a recent interview, Robbie Johnson, General Manager at California Transplants, a large vegetable transplant farm, mentions: "We can't afford to have droplets falling into the greenhouse. They severely affect germination and plant growth. High humidity levels and fog are equally undesirable because they create diseases. With other films, when we noticed droplets after one or two years, we would immediately change the plastic. This meant extra costs to replace the film and a crew to install it. We have now covered all greenhouses in our 3 5mil ft² farms with







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### reat success in North America

Growers in Canada, Mexico, Europe, China, and other areas have been using EVO AC with great success. The benefits described by Mr. Johnson are observed all over the world and under every climate. For instance, in areas with very cold climates, it is known that regular AC can't be effective because when external

temperature drops below 15°F (-10°C), the additives in the film crystallize, and AC becomes ineffective. EVO AC functions effectively down to extremely low temperatures. Paul Dyck, the owner of Great Lake Greenhouses in Ontario, Canada, was one of the first to convert his entire farm to this product in North America. When asked about the topic, he stated that "... condensation blocks valuable light. We need as much light as possible, so we use EVO AC because of the extreme clarity and the effective anti-drip. We have had the same covers for over 4 years, and they work just like day one. Also, it's clearly a much stronger, more rigid film".

### Healthier growing environment

All those characteristics create a healthier growing environment that leads to higher crop yields and earliness. In Türkiye, a tomato farm reported that with the use of EVO AC, they were

able to increase production from 7.5lbs/plant to 1llbs/plant, while trials conducted on cannabis by Prof. Bilalis at the Agricultural University of Athens, Greece, showed that EVO AC UV-open outperformed regular films on crop yield and qualitative characteristics. This is not surprising, given the sensitivity of cannabis plants to humidity and dripping and the need for the highest amount of light at the appropriate periods.

### Rovero & EVO AC

"The development of the EVO AC film has transformed the greenhouse industry by providing the longest-lasting anti-condensation available and enabling more efficient and sustainable agricultural practices across all types of crops," Jacco van Delden, Managing Director of Rovero thinks. "Years ago, PE covers were considered the inexpensive protective solution, but with advancements in materials science, we are able to supply the plastic film an invaluable growth tool for farms around the world. We believe in cutting-edge films that address grower needs and positively impact a farm's bottom line." Along those lines, Rovero will only sell the EVO AC film starting 2024 for there tunnels and HortiHouse. "We can not wait till the next generation of EVO AC products, will be available because this promise to significantly increase the amount of light transmission in the greenhouse. Rovero sells both crystal clear and high-diffusion versions, depending on the type of greenhouse, area, and crop.

### "We need as much light as possible, so we use EVO AC because of the extreme clarity and the effective anti-drip."

PAUL DYCK, GREAT LAKE GREENHOUSES

## Super-strong film makes cultivation easier!

### THE UNIQUE BENEFITS OF HORTIHOUSE EVO AC® FILM

### Superior anti-drip performance

Traditional anti-drip films contain additives that migrate to their surface and gradually deplete within 1-2 years, causing a film to be covered with droplets that reduce light and damage plants. For growers this results in reduced yield, lower crop quality and an increase in pesticide use. In many cases growers replace their films before the useful life is over, solely due to issues caused by droplets.

EVO AC® films are equipped with a non-migrating anti-drip system that lasts much longer - providing a decisive advantage in moisture management and enabling the use of the film for more years.

### No mist

A serious issue with traditional anti-drip films is the formation of mist inside the greenhouse, usually at sunrise and sunset. Mist reduces light and causes moisture to settle on the plants, creating conditions favorable for fungal diseases. Many growers actually avoid using anti-drip films out of fear of mist.



### More light

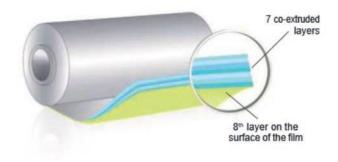
Due to their special composition, EVO AC® films allow more light into the greenhouse. This becomes even more apparent when the light incidence is low.

### Functions perfectly at very low temperatures

In extremely cold climates when the temperature drops below -10°C (14°F) many traditional anti-drip films quickly lose their effectiveness as the anti-drip molecules crystallize inside the film and lose their mobility. EVO AC® films perform excellently at very low temperatures resulting in a crystal-clear, drip-free appearance - as demonstrated by our experience in Scandinavia, Canada and northern China.

### Effective at lower slopes

EVO AC® films are effective at lower roof slope angles than traditional anti-drip films, which require a slope of  $30^\circ$  to perform well.





Traditional film EVO AC® film



Traditional film EVO AC® film

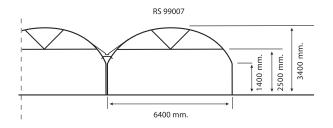


Traditional film EVO AC® film



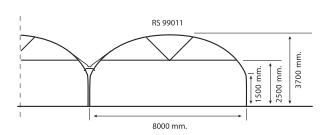
Traditional film EVO AC® film

### Dimensions of tunnel greenhouses



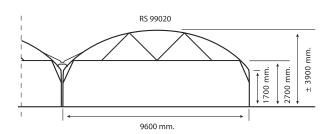
### ROVERO 640 S



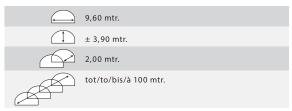


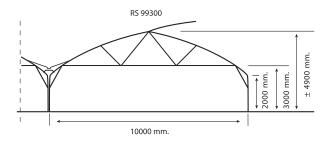
### ROVERO 800 S





### ROVERO 960 S

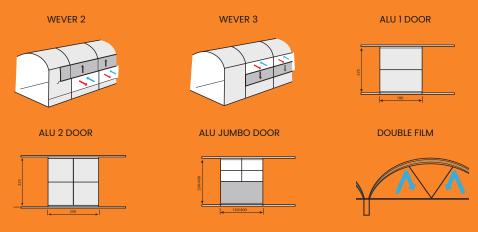




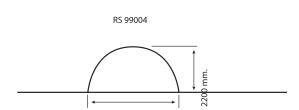
### ROVERO 1000 GOTHIC



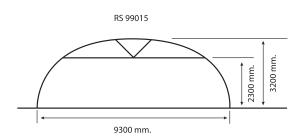
### **ROVERO OPTIONS**



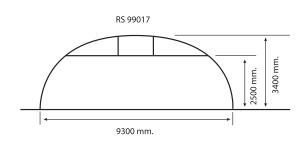


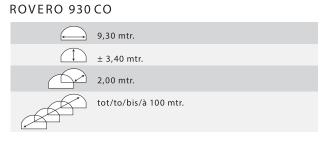




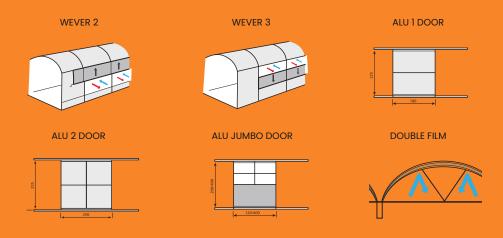




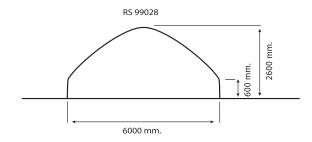




### **ROVERO OPTIONS**

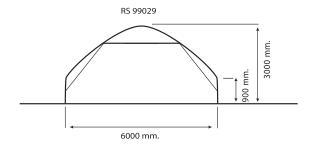






### ROVERO 600 ECO





### **ROVERO 600**



### Higher yield with Rovero tunnels.

# For cut hydrangeas, this greenhouse is ideal

### HYDRANGEA GROWER HENDRIK MUILWIJK FROM STOLWIJK (NL) IS HAPPY WITH ROVERO TUNNEL.

Young hydrangea grower Hendrik Muilwijk bought a small nursery with an old greenhouse in 2018.

A good year later this house went to the ground and, with the help of befriended construction workers he built himself a Rovero arch greenhouse.

hat one suits me very well. From early June to mid-November I cut beautiful, hard branches here. That's thanks to the climate: softer than outside, harder than in a glasshouse. For cut hydrangeas, that's ideal."

That Rovero makes robust arched

greenhouses with high-quality film, the young entrepreneur knew

for some time. His father, who specializes in the outdoor cultivation of Ilex, has been using one for years. So, when Hendrik made the move to his own company in 2018 he knew where to turn.

What immediately stands out are the extraordinary dimensions of the greenhouse built in 2020. 220 meters wide and only 20 meters long is certainly not an everyday occurrence. It has everything to do with the plot structure in Krimpenerwaard, which lies well below sea level. Long narrow plots (or in this case a short, wide plot) are surrounded by narrow ditches, which must guarantee smooth drainage of the polder's drainage system.

### Modest investment

"For a greenhouse the plot is not ideal, but this place is close to my heart," Muilwijk explains. "And I was able to save costs by carrying out the new construction myself with the help of construction friends. The greenhouse skeleton is of well-considered simplicity, so the job was done fairly quickly. That way I could still start my own business responsibly."

### Good first year

In addition to the 4,400 m2 greenhouse, Muilwijk grows another 6,000 m2 of Ilex verticillata outside. He had already learned that trick from his father. In November 2020 he cut the first branches. "The country was still in the middle of the corona crisis but there was a lot of demand for flowers and plants, also abroad," he says. "As a result we did very well in 2021, our first full year."

The cultivation of Hydrangea (Hortensia) is the main sales product despite being the smaller production area, and was already started before the new greenhouse was built. Hendrik had purchased rooted young plants in 2-liter pots, which he transferred to 10-liter pots and further cultivated at a colleague friend's house. "When winter came, the



greenhouse was ready and the plants could go in. Exactly according to plan" he says with a satisfied smile.

### End Gable ventilation and screens

Meanwhile (June 2022) the second harvest season of the cut hydrangeas has begun peaking in August/September. Around mid-November Muilwijk expects to harvest the last branches of the season. After that, the plants are pruned and go into rest.

"Because of the special dimensions and the small volume, ridge ventilation was unnecessary and we can easily suffice with ventilation through the end gables" says Hendrik about the cultivation. "Usually only the leeward side is open, which keeps the greenhouse climate reasonably homogeneous. When the nights get colder, I manually pull the energy screen closed to make it easier to keep the greenhouse frost-free. An automatic screen system remains an option but was initially too expensive for me. Until now I think it works fine like this."

### Grateful for good start

All in all, Muilwijk Cut Flowers had an excellent start. "In terms of price and quality, the greenhouse is exactly what we were looking for" Hendrik summarizes. "My wife and I can make a good living from the business and we are grateful for that now that our first child is on the way. In time, we hope to be able to continue to grow and optimize the business setup. When, where and how? I'm not really concerned with that at this point."

"In terms of price and quality the greenhouse is exactly what we were looking for."

# "What a joy to be able to harvest in this greenhouse"

### ARCHED GREENHOUSES ARE A VALUED FIGUREHEAD OF TUINDERIJ LAND IN ZICHT.

The new, organic horticulture branch of care company Land in Zicht is an enrichment for Amersfoort, in the Netherlands. The company's clients in need of care have a fun, meaningful day out when visiting. And local residents enjoy picking sustainably grown vegetables and flowers for a small fee.









t's a resounding success, thanks in part to those fine greenhouses," says grower Nienke Boone with undisguised enthusiasm. "Those extend the growing season by several months."

Tuinderij Land in Zicht is no ordinary horticultural company. For that, the  $6,000 \, \mathrm{m}^2$  site shows too much variety in vegetable and flower crops. The small-scale and varied set-up makes it clear that yield and profit maximization are not the driving forces. Nevertheless, everything looks well cared for and professional. Not at least because of the four striking arched greenhouses, which can be seen from afar.

### New adventure

"For Land in View, this is a new adventure that I get to lead as a grower," says agronomist Nienke Boone. "I started this with great pleasure and it is even more fun than I had thought beforehand. Every day is different, but always brings me in contact with the people we care for. And with local residents, who knew very quickly that you can buy healthy, tasty and beautiful organic produce here. They have to harvest them themselves first, though. Nice right?"

After studying at Wageningen University, Nienke did development work for an NGO, for which she spent a lot of

time abroad. Back in the Netherlands, she traded her "too boring" office job for a two-year practical course in Biologically Dynamic Urban Agriculture at Stichting Warmonderhof. "There, among other things, I took the course in castle farming and first came into contact with Rovero foil greenhouses," she explains. "I also often heard that name dropped during field trips to horticultural companies."

After completing her education, the brand-new urban farmer was able to start working almost immediately for care company Land in Zicht, which wanted to set up a green branch. Director Yuri Gohen more or less gave her a free hand. "That's how I found my calling after all, and now I get to root in the earth every day," Boone says, smiling broadly. "First, however, plans had to be made, starting with the construction of four greenhouses. After all, a good amount of money has to be invested in into the greenhouse. I seriously looked into that and it finally led me to Rovero's arc shaped greenhouses."

They may not be the cheapest, but you buy a greenhouse for the long term. Then you have to factor in things like expected lifespan, annual costs for interest, depreciation and maintenance, and total cost of ownership. Boone: "What I see as a real advantage for Rovero is the solidity of the construction. The greenhouses are not only well braced but also anchored in concrete. You don't see that very often with foil greenhouses. In addition, the foil is of very good quality. Both aspects make the greenhouse storm-proof, which is no luxury in the Netherlands. We have four of them of 19 meters long, equipped with one-sided side ventilation on the lee side and wide rolling doors in the end walls."

### Heavily loaded tomato plants

With a small, supervisory team from Rovero, colleagues from the care company and a large group of enthusiastic volunteers, the four 930R greenhouses were built in early spring. A week later, the first vegetable crops went planted into the ground, including several types of tomatoes and the tropical crop Malabar, a type of climbing spinach. During this interview, what took place in September, the tomato plants in particular stood out, heavily laden with ripe and ripening fruit.

"Surely this makes you happy," the female city farmer asks rhetorically as she holds up a giant bunch of cherry tomatoes. "What a joy to be able to grow in these greenhouses. And to work in it or take shelter when it rains, because here you are always dry. The temperature can rise considerably, but thanks to the good ventilation, it's not too hot any time soon. Best of all, the greenhouses extends the

### "Childeren who come here believe our tomatoes are the tastiest in the *whole* world."

growing season by months in the spring and fall. That makes it even more interesting for residents to buy a subscription and stop by here every week to harvest some vegetables. It has really strengthened our bond with the residential area next to the farm."

### **Ambitions**

Boone is overjoyed with the garden's flying start. Every week 65 households come to harvest healthy, organic vegetables and flowers, and that may eventually become 200. Plans to expand next year, including an educational school garden and a tea shop, are already in place.

"The lot is exactly 1 hectare, so we can put another 4,000 square meters into use," says the urban farmer proudly. "Socially involved companies help us invest in it, because financially it's really challenging."

The involvement of the next generation will not be lacking. Boone: "Many children are not fond of vegetables, but for the children who come here regularly - usually with their parents to pick something themselves - that does not apply. They think our tomatoes are the tastiest in the whole world."





## We can design the tunnel the tunnel customization is always possible Would you prefer your tunnel a little higher or lower? Let us know. Because we produce everything to measure, a lot is possible without major additional costs. completely according to your wishes

### **FILM**

The tunnels with both round and straight sidewalls are supplied as standard with crystal-clear Solar EVA film. Additionally, the use of diffused film or double film is possible.

### **CHOICE OF DOORS**

Various types of doors are possible in the tunnel greenhouse. The door is placed in an aluminum frame with a built-in film click profile. The door guidance is provided by rails and plastic top rollers. The doors are covered with reinforced film developed by Rovero, also known as Rovero Netfilm.

### **WEVER 2 SIDE VENTILATION SYSTEM**

The Wever 2 side ventilation system is mounted on the side walls. The ventilation opens from bottom to top and is attached at a height of approximately 125 centimeters on the arches. The ventilation film is made of reinforced, Rovero-designed Netfilm. The Wever 2 side ventilation is operated per wall with a manually operated winch. The opening is infinitely adjustable.

### **TOPMOVE**

The topmove ridge ventilation is provided along the entire length of the tunnel. The system consists of an aluminum lower frame attached to the arch and the elevated ridge crosspiece. Additionally, we use an aluminum upper frame that hinges on the ridge crosspiece. When closed, the upper frame slides completely over the lower frame preventing drafts or gaps. The air opening is approximately 100 cm.

Growing is great in the *strong* but *lightweight* foil greenhouse.

### **FOUNDATION**

Under each arch, a foundation post with a diameter of  $\emptyset$  54 x 2 mm and a length of 1.5 meters is placed at both ends. This foundation post is anchored into concrete with 70 cm below ground level. The remaining 80 cm section is inserted telescopically into the arch and attached to it.



### Rovero, the smart way to grow.



### CONTACT





