

Solar reflectors

Reflective surfaces

Concentrate your energy



With our solar reflecting surfaces, we offer you various products with optimal solar reflection for outdoor applications. Thanks to the perfectly matching properties of the nano-composite layer on top of the anodized aluminium – or on top of PVD-coated aluminium – excellent durability is achieved.

Reflective 85 weatherproof and MIRO-SUN® reflective 90 weatherproof are generally used, for example, as CPC reflectors (CPC = Compound Parabolic Concentrator) in evacuated tube collectors and parabolic trough concentrators (CSP = Concentrated Solar Power).

Your advantages

- 10-year material warranty*
- Weather-resistant*
- Optimized for highest solar reflection
- UV-resistant
- Heat-resistant
- Easy to clean*
- Formable
- Flexible
- Scratch-resistant*
- Environmentally friendly / emission-free manufacturing process

*valid only for the weatherproof products

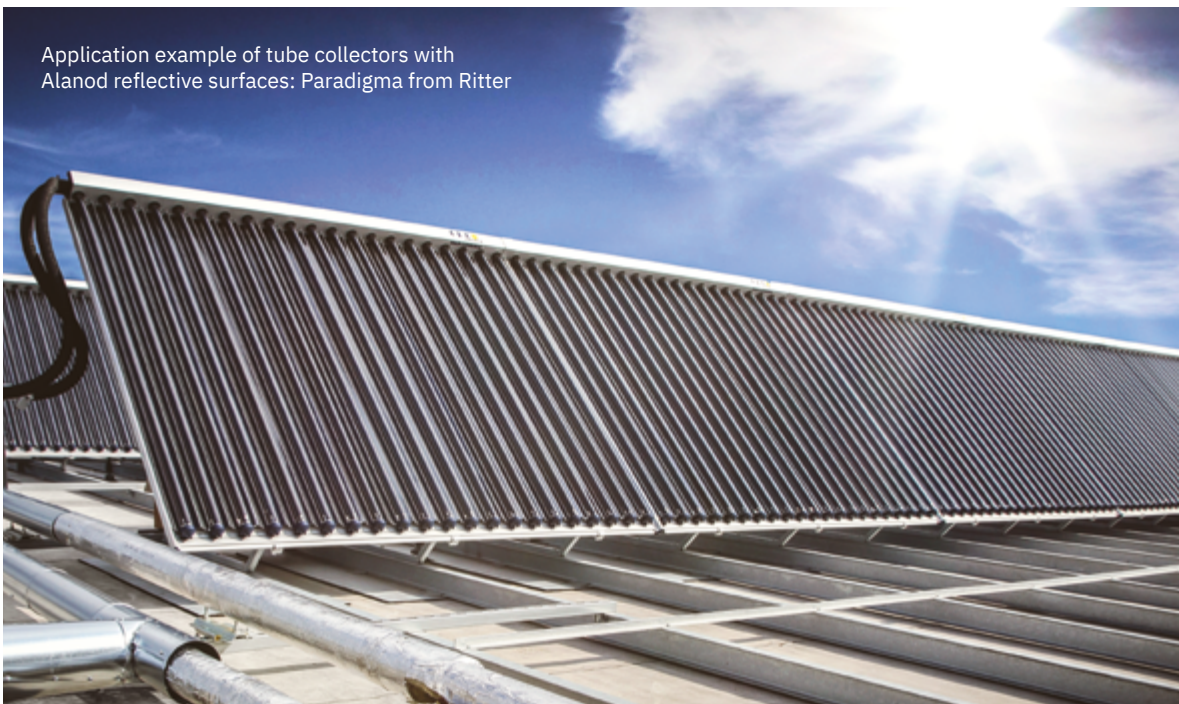


CPC application

Exemplary reflection applications

- Evacuated tube collectors (CPC Compound Parabolic Concentrator)
- Parabolic trough power plants (CSP Concentrated Solar Power)
- Micro parabolic trough (CST Concentrated Solar Thermal)
- Photovoltaics (CPV Concentrated Photovoltaics)
- Solar cookers
- Heliostats

Application example of tube collectors with Alanod reflective surfaces: Paradigma from Ritter





Reflective 85 weatherproof

Reflective 85 weatherproof is a highly reflective surface with a transparent, extra clear nano-composite lacquer, especially developed for high solar transmission, which is resistant against all kinds of environmental influences. Upon request, the surface is available with a similar reverse side lacquer.

Layer structure for Reflective 85 weatherproof



Quick Info

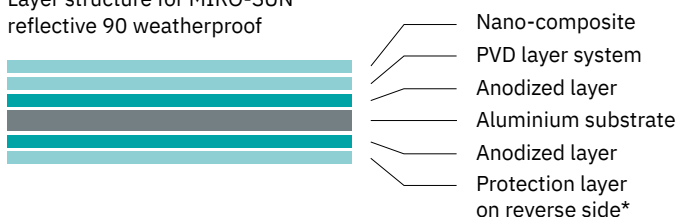
- 86 % total solar reflection
- Lacquer specially developed for solar applications
- 10-year material warranty



MIRO-SUN® reflective 90 weatherproof

Based on our MIRO® product range, we have developed MIRO-SUN® reflective 90 weatherproof specifically for outdoor use. A highly reflective coating (MIRO®) is deposited on anodized coils via a continuous air-vacuum-air PVD (Physical Vapor Deposition) process. A nano-composite lacquer is then applied onto the PVD coated strip using a coil-coating method. MIRO-SUN® reflective 90 weatherproof provides 90 % total solar reflection making it ideal for various outdoor applications.

Layer structure for MIRO-SUN® reflective 90 weatherproof



Quick Info

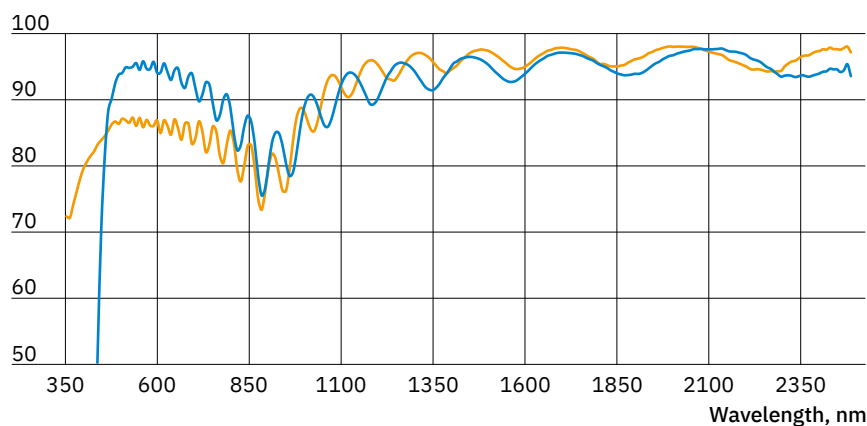
- 90 % total solar reflection
- 10-year material warranty

* upon request



Solar reflectance of Reflective weatherproof products

Total reflectance, %



Typical reflection spectra of Alanod surfaces

- Reflective 85 weatherproof
- MIRO-SUN® reflective 90 weatherproof

Surface and corrosion protection is achieved through a unique nano-composite coating.

Our products are weatherproof and suitable for long-term outdoor use.

Technical specifications of Reflective weatherproof products

	Reflective 85 weatherproof	MIRO-SUN® reflective 90 weatherproof
Mechanical		
Tensile Strength Rm [MPa]	> 100 ¹⁾	> 100 ¹⁾
Yield Strength Rp0.2 [MPa]	> 90 ¹⁾	> 90 ¹⁾
Elongation A50 [%]	≥ 2 ¹⁾	≥ 2 ¹⁾
Bending radius [mm]	≥ 1.5 fold thickness	≥ 1.5 fold thickness
Optical		
Total solar reflectance [%]	86 ± 2 ²⁾	90 ± 2 ²⁾
Solar weighted diffuse reflectance [%]	6 ± 3 ²⁾	10 ± 3 ²⁾
Front side	anodized, lacquered	anodized, PVD coated & lacquered
Reverse side	anodized	anodized
Reverse side lacquered	upon request	upon request
Dimensions		
Thickness [mm]	0.5 ⁸⁾	0.5 ⁸⁾
Width [mm]	max. 1,250	max. 1,250
Delivery		
Coils or sheets with	protective film ³⁾	protective film ³⁾
Inner diameter [mm]	400 or 500	400 or 500
Corrosion, Weather resistance & Warranty		
Corrosion and weather resistance	fit for outdoor use, passed salt spray test ⁴⁾ , ΔT-Test ⁵⁾ , 500 h QUV-B-Test ⁶⁾ , 24 h boiling test ⁷⁾	fit for outdoor use, passed salt spray test ⁴⁾ , ΔT-Test ⁵⁾ , 500 h QUV-B-Test ⁶⁾ , 24 h boiling test ⁷⁾
Warranty	10 years	10 years

¹⁾ EN 485-2, ²⁾ ASTM G 173, ³⁾ We guarantee for a period of 6 months after delivery, with appropriate storage (15 – 25 °C and rel. air humidity of not more than 60 %), a constant film adhesion and the residue-free removal of our protective films. It is necessary to protect the goods from sunlight and other sources of heat. The protective films are not UV resistant, ⁴⁾ DIN 50 021, ⁵⁾ DIN 50 928, chapt. 9.5, ⁶⁾ DIN EN ISO 4892-3, ⁷⁾ GSB guideline, ⁸⁾ Other thicknesses on request



Reflective standard products

As the global leader in reflective surfaces, we manufacture products with the highest reflection values. For solar applications that are not exposed to environmental influences, we offer our highly reflective product portfolio without a nano-composite coating. This includes the products Reflective 85, MIRO® reflective 90 and MIRO® high reflective 95.

These products, which have proven their value over many years, are durable, extremely stable and stand for the highest overall reflectivity of up to 98 %. By using MIRO® products, you are choosing optimum performance.

Quick Info

- Highly reflective with > 86, 90 and 95% total solar reflection
- Durable and robust products
- Proven quality with more than 20 years of field experience

Layer structure for Reflective 85



Layer structure for MIRO® reflective 90

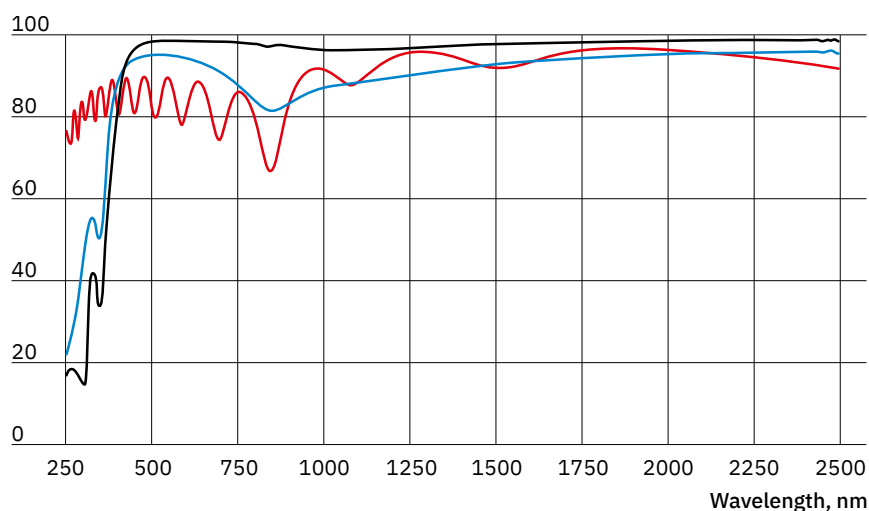


Layer structure for MIRO® high reflective 95



Solar reflectance of Reflective standard products

Total reflectance, %



Typical reflection spectra of Alanod surfaces

- MIRO® high reflective 95
- MIRO® reflective 90
- Reflective 85

Our standard surfaces offer the highest levels of reflection.

Technical specifications of Reflective standard products

	Reflective 85	MIRO® reflective 90	MIRO® high reflective 95
Mechanical			
Tensile Strength Rm [MPa]	> 100 ¹⁾	> 100 ¹⁾	> 100 ¹⁾
Yield Strength Rp0,2 [MPa]	> 90 ¹⁾	> 90 ¹⁾	> 90 ¹⁾
Elongation A50 [%]	≥ 2 ¹⁾	≥ 2 ¹⁾	≥ 2 ¹⁾
Bending radius [mm]	≥ 1.5 fold thickness	≥ 1.5 fold thickness	≥ 1.5 fold thickness
Optical			
Total solar reflectance [%]	86 ± 2 ^{2) 4)}	90 ± 2 ^{2) 4)}	95 ± 2 ^{2) 4)}
Solar weighted diffuse reflectance [%]	6 ± 3 ^{2) 4)}	7 ± 3 ^{2) 4)}	5 ± 3 ^{2) 4)}
Front side	anodized	anodized & PVD coated	anodized & PVD coated
Reverse side	anodized	anodized	anodized
Dimensions			
Thickness [mm]	0.4 – 0.5	0.4 – 0.5	0.4 – 0.5
Width [mm]	max. 1,250	max. 1,250	max. 1,250
Delivery			
Coils or sheets with	protective film ³⁾	protective film ³⁾	protective film ³⁾
Inner diameter [mm]	400 or 500	400 or 500	400 or 500
Weather resistance			
	not for outdoor use	not for outdoor use	not for outdoor use

¹⁾ EN 485-2, ²⁾ ASTM G 173, ³⁾ We guarantee for a period of 6 months after delivery, with appropriate storage (15 – 25 °C and rel. air humidity of not more than 60 %), a constant film adhesion and the residue-free removal of our protective films. It is necessary to protect the goods from sunlight and other sources of heat. The protective films are not UV resistant.

⁴⁾ SolarPaces Reflectance Guide V3.1 https://www.solarpaces.org/wp-content/uploads/202004_SolarPACES-Reflectance-Guidelines-V3.1.pdf

Care for the Environment

Conserving natural resources has been part of our corporate philosophy ever since our company was founded in 1975. Today, Alanod is a climate-neutral, sustainably run company. Due to the excellent recycling properties of aluminium, our materials use up to 90 % recycled aluminium. This consumes up to 95 % less energy compared to primary aluminium production.

Our cutting-edge post-combustion technology enables production of all of our materials without the need for excessive energy input. All our electricity needs are met using “100 % green” energy sources.

Made in Germany

Our high-tech materials are all manufactured at our sites in Germany.

System Development

Our broad-based team of experts develops individual solutions for our customers in close cooperation with international research institutions and long-standing industrial partners. Talk to us so that we can work together to fulfill your wishes.



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