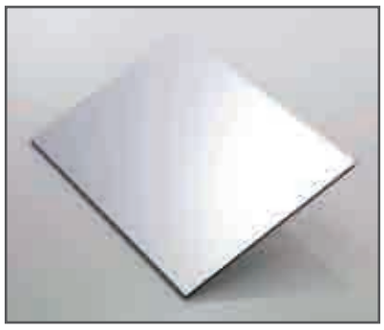
vega prime



Composite mirror for CSP

ALMECO SOLAR

vegaprime

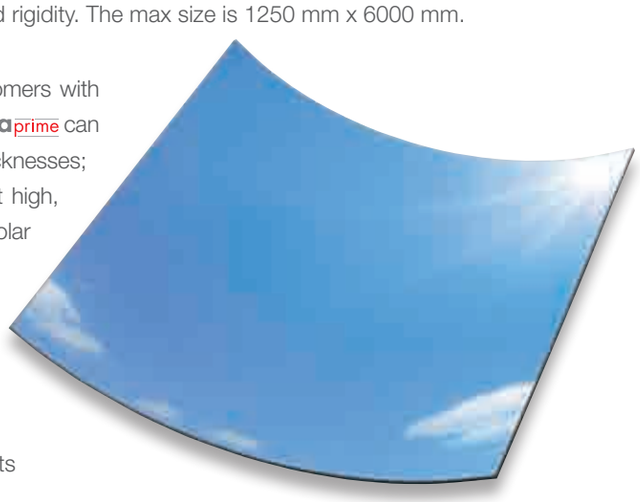
vegaprime

vegaprime is a composite mirror made using vega WR highly reflective weather resistant aluminium, combined with a plastic core and a corrosion resistant stabilizing aluminum sheet on the back side. The product can be used flat or can be curved to meet special design requirements. Customers can be provided with the complete mirror ready for mounting on a space frame support structure. Low mirror weight simplifies the construction process and mounting requirements, significantly reducing costs. The exact shape and dimensional characteristics can be designed to meet customer requirements. **vegaprime** offers an excellent blend of flexibility, light weight and mechanical resistance and can be used flat or formed to a curve and the materials and manufacturing process employed impart excellent shape retention whatever your special design. **vegaprime** can be offered in many configurations in terms of size, thickness and rigidity. The max size is 1250 mm x 6000 mm.

Applications

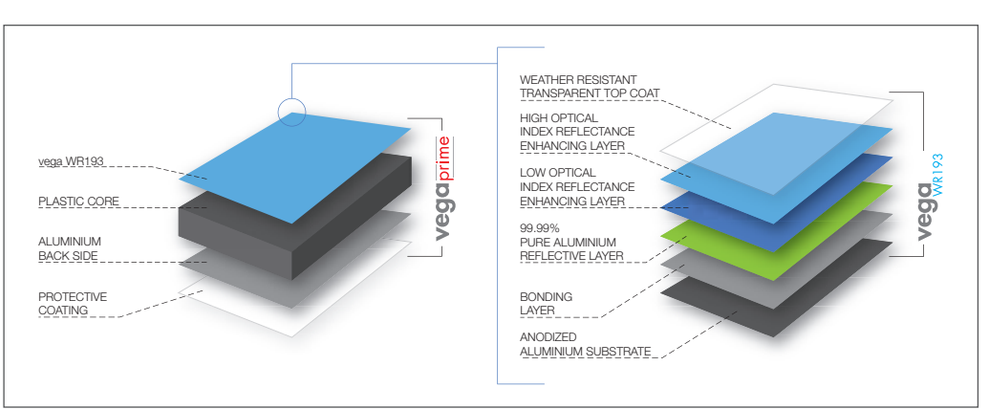
Laminated **vegaprime** mirrors provide customers with a wide range of production possibilities. **vegaprime** can be supplied in several sizes, weights and thicknesses; this makes this product suitable for different high, medium and low CSP (Concentration Solar Power) applications like:

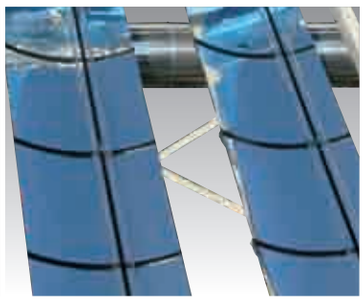
- Low concentration photovoltaic systems
- Fresnel systems
- Parabolic trough collectors
- Heliostats for central receiver tower plants



The mirror surface

The **vega** high reflectance layers are deposited on a substrate of mirror finished brightened and anodized high purity aluminium, which provides a high quality chemically stable surface to give maximum durability to the product and good bonding characteristics to the panel. The PVD applied reflection enhancing system comprises a layer of 99.99% pure aluminium surmounted by two transparent optical layers of alternate low and high refractive index which increase the total reflectance of the surface to over 95%. The PVD layers are finally protected by a highly transparent, hard, weather resistant top coat which maintains a high reflectance performance (>93% TR) against the effects of abrasion and weathering of the mirror surface.





Dimensions

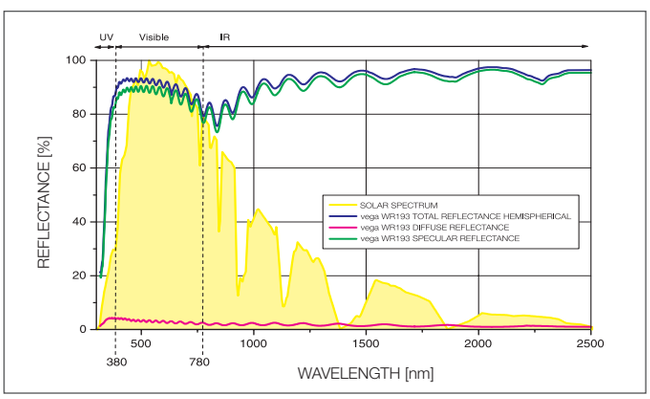
Standard dimensions	Unit of measurement	2mm	3mm	4mm	5mm	6mm
Aluminium thickness	mm	0.30	0.30	0.50	0.50	0.50
Panel Weight	kg/m²	2.9	3.8	5.5	6.4	7.3
Standard Width	mm	1,250				
Panel tolerances						
Thickness	mm	±0.2				
Length	mm	≤ 4,000 - 0.0 /+4 4,001-6,000 - 0.0 / +6				

Technical data

Technical properties						
Rigidity	[EI] kNcm²/m	291	727	2,036	3,358	5,011
Modulus of Elasticity	[E] N/mm²	70,000				
Linear Thermal Expansion	mm/m/°K	2.4 x 10²				
Temperature behaviour						
Operational temperature range	°C	-40° ; +80°				
Optical properties						
Total Solar reflectance [ASTM G173]	%	89.9				
Total reflectance "Visible range" [ASTM E1651]	%	>93				
Diffuse reflectance [ASTM G173]	%	1.6				

Environmental tests

Physical tests		
Cross hatch adhesion test [EN ISO 2409]		No loss of coating adhesion
Fallling ball impact test [BS EN ISO 6272-1]		No coating failure
Durability and corrosion test		
UV resistance [EN ISO 4892-3]		< 0.5% reflectance change in 1,000h
Neutral salt spray [ASTM B 117 - ISO 9227 NSS]		< 1% reflectance change in 3,000h
Humidity resistance [ISO 4623]		< 0.5% reflectance change in 500h



Graphs showing the spectral hemispherical, specular and diffuse reflectance of vega WR193 compared with the solar spectrum.

Milan, Italy - Bernburg, Germany
Goncelin, France - Atlanta, USA - Shenzhen, China




ALMECO SOLAR

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