HyBrid^{Al} for Solar Mirrors

Many solar mirror designs are heavy or expensive or susceptible to breakage or weathering. HyBrid^{Al} reconciles these demands in one material - an aluminium strip coated with a reflective mirror-finish foil which is not only light, unbreakable and cost effective but also flexible and easy to use.

The key feature of HyBrid^{Al}: an aluminium base material which can be tailored for a wide variety of mirror constructions.

In HyBrid^{Al} - the cost-effective material for every type of solar mirror - an aluminium strip is first optimised to meet the respective design requirements then coated with a polymer mirror-finish foil. HyBrid^{Al} is particularly efficient in applications where light has to be collected or reflected – namely in concentrated solar power (CSP) systems.

HyBrid^{Al} is ideal for a broad range of mirror applications, such as:

- Parabolic mirrors
- Fresnel mirrors
- Light-conducting tubes

The composition of the aluminium substrate can be specifically designed for formability as well as for high strength. Optimisation of the material with regard to its alloy, temper, thickness, geometry and reverse-side design can be tailored to suit the different types of mirror construction.

Depending on the particular application, the following Hydro alloys can be used as substrate material:

- EN AW 5754 (equivalent)
- 5182
- 5052
- 3105
- 3005

These special substrate qualities allow individually optimised and cost-efficient mirror construction.

The mirror-finish coating consists of a polymer foil with a silver reflective coating which possesses outstanding reflectance properties and good resistance to weathering. This mirror-finish material has the following advantages:

- High reflectivity values
- Weather resistant
- Low weight
- R2R manufacturing process
- Cost effective
- Unbreakable
- Provides design flexibility well as rigidity
- Fitting substructure design ensures quick and easy assembly
- Possible to manufacture mirrors in larger dimensions
- No limit on working length

HyBrid[Al] for Solar Mirrors – Product Range

Cold-rolled and Laminated Strip and Sheet

Thickness	0.2 mm to 1.3 mm
Width	Coiled strip - 40 mm to 1,540 mm
	Sheet - 600 mm to 1,540 mm
Length	Sheet - 500 mm to 6 m (depending on thickness)
Alloy	EN 3000 and 5000 series
Temper	H0 to H19
Surface topography	Mill finish
Surface treatment	Degreasing
	Conversion coating
Mirror surface	Laminated with a mirror-finish foil
	Film coated for further processing
Spectral value	Overall reflectance of the solar spectrum - maximum 94% (ASTM E903)
Reverse side	functional or decorative coating
	(Coil coating possible on agreement)
Operating temperature	- 40 to 60°C

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