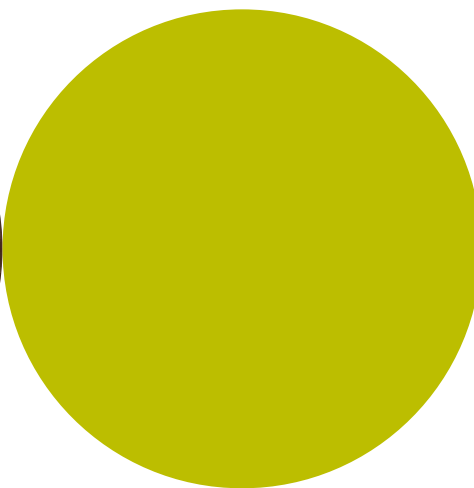


Hydro Substrates for Thin-film Photovoltaics

This special aluminium strip is rolled to give substantially lower surface roughness. In this way, Hydro substrates offer smoother surfaces and provide a cost-effective alternative in roll-to-roll (R2R) coatings for CIS or CIGS solar cells, whether flexible or rigid.



This new type of Hydro substrate material consists of rolled aluminium strip which is characterised by low surface roughness. The high electrical conductivity of aluminium means that this strip is well suited to cell construction where the aluminium strip itself plays a key role in the transport of electrons.

Compared to polymers, the properties of aluminium have a very positive effect in thin-film photovoltaic applications, for example:

- Temperature resistance
- No outgassing in vacuums
- High barrier to gas and humidity
- High coefficient of thermal expansion.

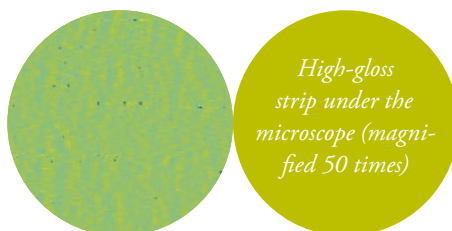
The use of Hydro substrates facilitates cost-effective solar cell production, for instance, for R2R coatings in PECVD processes or for direct coating (printing process).

The key quality characteristic of Hydro substrates is a rolling surface topography with roughness values lower than 0.05 µm.

We currently supply our customers with Hydro substrate variants in thicknesses down to 120 µm. On request, we can cover the surface with a protective film.

Besides Alloy 1050, a more temperature-resistant and/or high-strength alloy can be supplied on request. When required, reverse side protection can be achieved by means of a thin anodised layer.

Hydro substrates are highly suitable for end products which require no glass encapsulation as well as for flexible and rigid solar cells which are covered with glass.



Hydro Substrates for Thin-film Photovoltaics – Product Range

Cold-rolled Strip

Thickness	0.12 mm to 1 mm
Width	Coiled strip - 40 mm to 1,540 mm
Alloy	EN AW 1050, 3000 and 5000 series on request
Temper	H19
Surface topography	Polish rolled, Ra 0.02 µm to 0.05 µm, Rz < 0.5 µm
Surface coating	Film protected on request
Reverse side	Reverse side protected by anodisation on request

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