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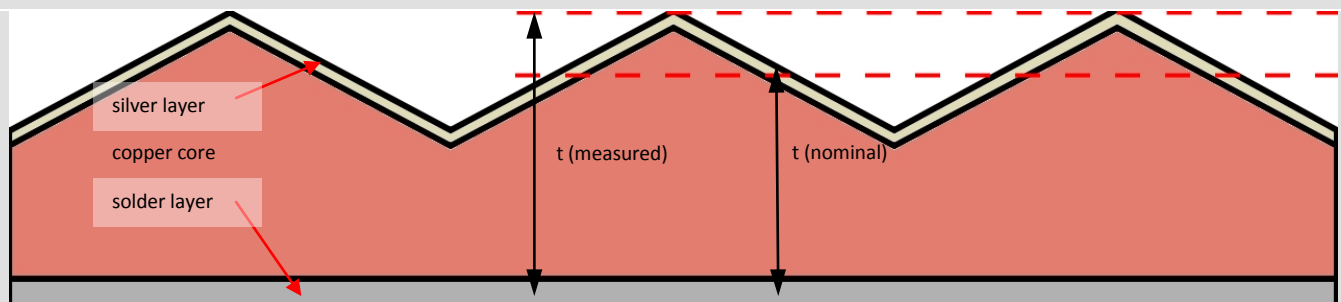
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## LHS Standard (Light Harvesting String)

LHS is a composite material of copper clad with silver on one side and solder alloy on the other side.

### composition of material:



*Schematic cross-section of LHS-Strip.*

<b>silver layer</b>	Ag 99,99; 3% of nominal thickness
<b>copper core layer</b>	ETP-Cu acc. to DIN EN 1976; 99.9% Cu incl. Ag; 87% of nominal thickness
<b>solder layer</b>	Sn-solder alloy; different types available; 10% of nominal thickness - SnAg3Cu0,5 - SnAg3,5 - SnPb36Ag2 - Sn60Pb40
<b>layer ratio (Ag/Cu/Solder)</b>	3/87/10 in percentage of total thickness
<b>application</b>	Interconnecting strings for solar cells / modules

### physical properties

(design values only, will not be certified)

density <i>depending on solder alloy</i>	metric units				
	Solder	SnAg3Cu0,5	SnAg3,5	SnPb36Ag2	Sn60Pb39,1Sb0,9
	Density	8,517 g/cm <sup>3</sup>	8,800 g/cm <sup>3</sup>	8,940g/cm <sup>3</sup>	8,907 g/cm <sup>3</sup>
electrical conductivity of copper core	100 % IACS				

<p><b>reflection measurement</b></p>	<p>Our product is tested with a laser beam at 430-640 nm. Relative reflection rate is measured “recovery ratio (R)” Acceptance level: R &gt; 75%</p> <p>This test procedure has been developed in house. A transfer of our test results to other materials is not recommended.</p>										
<p><b>recommendations for processing</b></p>	<ul style="list-style-type: none"> <li>- Do not remove protective wrapping until use</li> <li>- Avoid contact with sulphur containing chemicals as they will darken the silver</li> <li>- Profiled silver side is sensitive to scratches. Avoid scratches as they will reduce reflection rate.</li> </ul>										
<p><b>manufacturing program of strip</b></p>	<table border="1"> <tr> <td data-bbox="491 595 762 745"> <p>thickness of strip [mm]</p> </td> <td data-bbox="762 595 1505 745"> <p>0.1 – 0.2 mm Measured thickness deviates by +0.019 mm from nominal thickness due to the embossed surface structure. Nominal thickness is obtained by assuming a rectangular cross section.</p> </td> </tr> <tr> <td data-bbox="491 745 762 801"> <p>width of strip [mm]</p> </td> <td data-bbox="762 745 1505 801"> <p>1.0 – 5.0 mm</p> </td> </tr> <tr> <td data-bbox="491 801 762 857"> <p>thickness tolerance</p> </td> <td data-bbox="762 801 1505 857"> <p>±10 % on total thickness</p> </td> </tr> <tr> <td data-bbox="491 857 762 913"> <p>width tolerance</p> </td> <td data-bbox="762 857 1505 913"> <p>+/- 0.05 mm</p> </td> </tr> <tr> <td data-bbox="491 913 762 976"> <p>preferred spool types [mm]</p> </td> <td data-bbox="762 913 1505 976"> <p>HKV 160; HKV 125</p> </td> </tr> </table>	<p>thickness of strip [mm]</p>	<p>0.1 – 0.2 mm Measured thickness deviates by +0.019 mm from nominal thickness due to the embossed surface structure. Nominal thickness is obtained by assuming a rectangular cross section.</p>	<p>width of strip [mm]</p>	<p>1.0 – 5.0 mm</p>	<p>thickness tolerance</p>	<p>±10 % on total thickness</p>	<p>width tolerance</p>	<p>+/- 0.05 mm</p>	<p>preferred spool types [mm]</p>	<p>HKV 160; HKV 125</p>
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