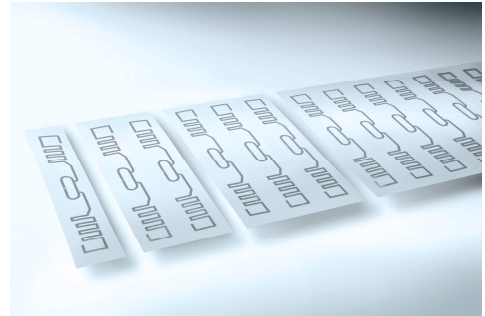


Design Rule recommendations

Substrate (Paper, PET) / Aluminium

- **Ecology:** fibre based substrate suitable for fibre recycling
- **Economy:** flexible antenna positioning for easy converting
- **Exactness:** high accuracy in component attachment area
- **Efficiency:** flexible choice of substrates according to end use needs



Applications

WALKI®Pantenna is the first antenna that offers extensive possibilities for converting and that can be truly customized for the demands of the end use product, from labels to hang tags, single trip tickets and much more.

WALKI®Pantenna is designed to be used in

1. RFID UHF antennas
2. RFID HF antenna (under development)
3. Other antennas

For more info, please contact our 4E sales, sipi.savolainen@walki.com
Walki sales will also give ACP recommendations on request.

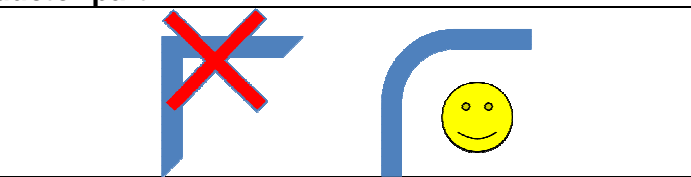


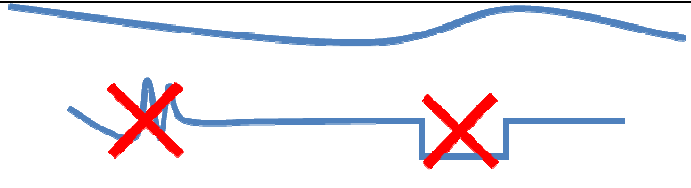
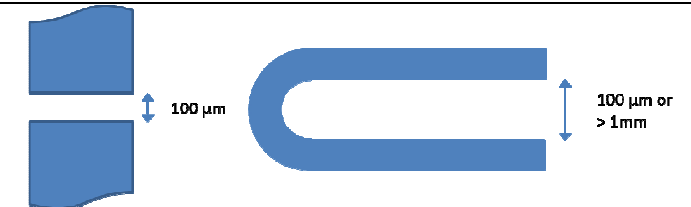
DISCLAIMER:

All technical values are measured in our laboratory in conditions of 23°C 50%RH and are indicative.

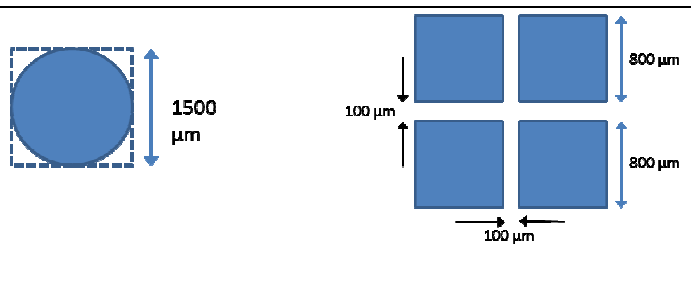
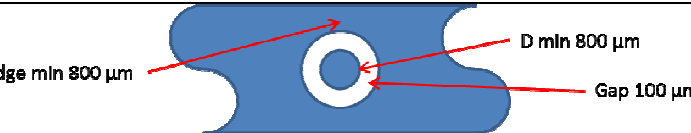
Recommend to use within one year of dispatch from our factory. Optimum storage conditions are +20°C, 50 – 60 % relative humidity and in the original packaging.

Customers are responsible for their own product testing, evaluation and safety procedures. Our recommendations are based on our latest knowledge and experience and are given in good faith. Customers should contact Walki if they have any queries regarding suitability of the product for their particular application or on safety procedures

Design Rule recommendations, conductor part

<p>No sharp corners, use radius. Single radius is better than combination of radiuses. Bigger radius is better than small radius. Minimum radius is 300 μm.</p>	
<p>No Sharp turnarounds.</p>	
<p>Conductor width: minimum 800 μm</p>	
<p>Smooth conductor lines, no sharp or small features on the lines. Clear straight form factors (even with large conductor area) are recommended.</p>	
<p>Gap width: Minimum separation of gaps: 100 μm or > 1mm. This applies to all of the design area. Preferred not to have gaps between 100 μm and 1 mm.</p>	
<p>General recommendations for the design work:</p>	<p>As straight lines as possible and as large radius curved forms as possible taking in account the above mentioned constraints.</p>

Design Rule recommendations, IC connection area

<p>Register (fiducial) mark size and position: Round or rectangle, minimum diameter (minimum width x height): 1 500 μm. Distance to antenna conductor minimum 1 000 μm. Proposal is to have a cross cut register mark (round or square)</p>	
<p>Register (fiducial) mark in the middle of conductor: Diameter min 800 μm, Bridge between mark and conductor edge 800 μm.</p>	
<p>Pad area recommendations: Gap cut under IC are should be a cross open from the ends. Solid support pad area is not recommended. Support pad minimum width / height 800 μm.</p>	