SOLDER FORTIFICATION® PREFORMS
Design Guide
INTRODUCTION

Obtaining the correct amount of solder to ensure a strong solder joint is critical in electronics manufacturing. However, miniaturization trends, such as the reduction of stencil thickness and more tightly fitted components, make this increasingly difficult. **Solder Fortification® Preforms** can provide the solution for these challenging issues.

**Solder Fortification® Preforms** are generally rectangle-shaped pieces of alloyed metal that do not contain any flux. The preform is added to a deposit of solder paste using standard pick and place equipment. Since the alloy for both the preform and the solder paste is the same, the preform will reflow at the same temperature as the solder paste, with the solder paste providing the necessary flux. The preform increases the volume of solder above what could be achieved with just solder paste, especially for stencils with a pitch of 0.3mm or less.

**Features**

- Increased solder volume
- Improved drop test results
- Fewer issues with flux residue
- Reduced rework
- Improved fillet shape and volume
- Maximized pick rate

**ADVANTAGES**

The advantages of **Solder Fortification® Preforms** include:

- Increased solder volume compared to what could be achieved with just solder paste
- Fewer issues with flux residue
- Elimination of costly or time-consuming processes, such as wave soldering or selective soldering
- Stronger solder joints, which help improve drop test results
- Reduced rework and other manual processes to add solder volume
- Improved shape and volume of fillet to ensure joints meet IPC specifications

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**Solderable Preform 0201**

![Diagram of Solderable Preform 0201](image)

**Notes: Unless Otherwise Specified**

<table>
<thead>
<tr>
<th>Standard Material, Other Alloys Available</th>
<th>SAC305</th>
<th>Sn62</th>
<th>Sn63</th>
</tr>
</thead>
<tbody>
<tr>
<td>50k per 13” Reel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13” Reel to have a 2.5” center hub</td>
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</tbody>
</table>

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**From One Engineer To Another®**
**Solderable Preform 0402**

- 1.02 mm ±0.05 mm
  - [0.040 ±0.002 in]
- 0.48 mm ±0.03 mm
  - [0.019 ±0.001 in]

**Notes: Unless Otherwise Specified**

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<thead>
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<th>Standard Material, Other Alloys Available</th>
<th>SAC305</th>
<th>SAC387</th>
<th>Sn62</th>
<th>Sn63</th>
</tr>
</thead>
<tbody>
<tr>
<td>15k per 13” reel</td>
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<tr>
<td>13” Reel to have a 2.5” center hub</td>
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</tbody>
</table>

**Solderable Preform 0603**

- 1.52 mm ±0.05 mm
  - [0.060 ±0.002 in]
- 0.79 mm ±0.03 mm
  - [0.031 ±0.001 in]

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<th>SAC387</th>
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</tbody>
</table>
SOLDER FORTIFICATION® PREFORMS

SOLDER FORTIFICATION® SOLUTION OPTIONS

Standard Sizes (other sizes available on request):

<table>
<thead>
<tr>
<th>Name</th>
<th>Size</th>
<th>Quantity Per Reel</th>
<th>Example Weight: SAC305 (grams/ea)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>7&quot;</td>
<td>13&quot;</td>
</tr>
<tr>
<td>0201</td>
<td>.010” x .020” x .010” rectangle (0.254mm x 0.508mm x 0.254mm)</td>
<td>1k</td>
<td>50k</td>
</tr>
<tr>
<td>0402</td>
<td>.020” x .040” x .019” rectangle (0.508mm x 1.01mm x 0.48mm)</td>
<td>1k</td>
<td>15k</td>
</tr>
<tr>
<td>0603</td>
<td>.030” x .060” x .030” rectangle (0.76mm x 1.52mm x 0.787mm)</td>
<td>1k</td>
<td>15k</td>
</tr>
<tr>
<td>0805</td>
<td>.050” x .080” x .050” rectangle (1.27mm x 2.03mm x 1.27mm)</td>
<td>1k</td>
<td>15k</td>
</tr>
</tbody>
</table>

Packaging
Solder Fortification® Preforms are packaged in tape & reel for easy placement by standard pick and place machines.

Common Alloys
• SAC305
• SAC387
• Sn63
• Sn62
• BiSn
• BiSnAg

Technical and Customer Support
Indium Corporation’s internationally experienced engineers provide in-depth technical assistance to our customers.

Thoroughly knowledgeable in all facets of Materials Science as it applies to the electronics and semiconductor sectors, technical support engineers provide expert advice in solder properties, alloy compatibility, and selection of solder preforms, wire, ribbon, and paste. Indium Corporation’s technical support engineers provide rapid response to all technical inquiries.

SAFETY DATA SHEETS
The SDS for this product can be found online at www.indium.com/sds

Contact our engineers today: esolders@indium.com
Learn more: www.indium.com/solderfortification
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