Common Problems

- Loss of pumping efficiency due to profile change caused by erosion-corrosion or mechanical damage.

Set-up

All work should be carried out in strict accordance with the relevant Belzona® Instructions For Use.

Product selection should be made on the basis of the predominant problem, the system operating temperature, the percentage solids content and nature of the pumped fluid.

Where loss of profile is attributable to surface pitting of the component, this may be rebuilt by applying the Belzona® material directly to the surface of the component. Please refer to Belzona® Know-How Systems Leaflet CEP-5 “Rebuilding General Erosion-Corrosion Damage”.

Where thin sections or missed edges are to be rebuilt (fig. 1) these require a skeleton/framework to support the Belzona® material.

Preparation

The surface of the component to be rebuilt should be washed down with Belzona® 9111 in order to remove all dirt, grease and other surface contaminants.

If the repair is to be left exposed and not protected by the addition of a surface coating, then a shallow groove must be machined around the perimeter of the repair area in order to rebate the repair material and avoid feather edging. This groove can either be machined or cut by the use of a small mechanical grinder fitted with a cutting disk.

After affixing a suitable framework, the whole area and framework is to be grit blasted to Swedish Standard Sa2½ (near white metal finish) ensuring a minimum 3 mil (75 micron) profile, using an angular abrasive.

On completion of all preparation, and before application of any Belzona® material, all repair areas should be rewashed with Belzona® 9111.

Application

Select the appropriate Belzona® material and apply a thin layer to the prepared area pushing the material well into the surface profile. Apply further material to completely infill the framework taking care to avoid air entrapment. When affixing steel plates the Belzona® material should be applied to both substrates before pressing into place and fixing.

Further material should then be applied to provide a depth of approximately 1/8th of an inch (3.0 mm) over the entire framework and surrounding area, which should be contoured to the original component profile (fig. 4).
### Belzona® Technical Comparison:

<table>
<thead>
<tr>
<th>Product</th>
<th>Consistency</th>
<th>Erosion/Corrosion Resistance</th>
<th>Working Life at 60°F (15°C)</th>
<th>Full Mechanical Cure at 60°F (15°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belzona® 1111</td>
<td>Paste</td>
<td>Good</td>
<td>25 minutes</td>
<td>36 hours</td>
</tr>
<tr>
<td>Belzona® 1121</td>
<td>Paste</td>
<td>Medium</td>
<td>60 minutes</td>
<td>72 hours</td>
</tr>
<tr>
<td>Belzona® 1311</td>
<td>Paste</td>
<td>Very Good</td>
<td>25 minutes</td>
<td>36 hours</td>
</tr>
<tr>
<td>Belzona® 1221</td>
<td>Paste</td>
<td>Good</td>
<td>4 minutes</td>
<td>90 minutes</td>
</tr>
<tr>
<td>Belzona® 4301</td>
<td>Paste</td>
<td>Low</td>
<td>35 minutes</td>
<td>48 hours</td>
</tr>
</tbody>
</table>

### Belzona® System Selector:

<table>
<thead>
<tr>
<th>Main System Requirement</th>
<th>Belzona® 1111</th>
<th>Belzona® 1121</th>
<th>Belzona® 1311</th>
<th>Belzona® 1221</th>
<th>Belzona® 4301</th>
</tr>
</thead>
<tbody>
<tr>
<td>Repair required to be machined to profile</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Large areas requiring extended working time</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Erosion resistance medium solids entrainment</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Repair prior to application of elastomeric coating; or emergency repair</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Repairs requiring maximum chemical resistance</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

### Recommended Equipment:

- Grit Blasting Equipment
- Angle Grinder
- Steel Gauze/Expanded Metal Studs and Lacing Wire
- Belzona® 9111
- Suitable Protective Clothing/Equipment
- Taps
- Self-Tapping Screws
- Belzona® 1221 for Bonding Framework
- Application Trowels
- Space Heating Equipment
- Masking Tape
- Cleaning Rags
- Drills
- Brushes

For more complete technical information, please refer to the appropriate Belzona Product Specification Sheet.
For detailed instructions on surface preparation, mixing and curing, please refer to the appropriate Belzona Instructions For Use.
Comprehensive Health and Safety information is provided with the product. For more information, please contact your local Belzona representative.