Common Problems

- Reduced pumping efficiency due to loss of internal profiles as a result of erosion-corrosion processes.

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, solids content nature of the system fluid and the system operating temperature.

Preparation

The surface of the component to be repaired should be washed down with Belzona® 9111 in order to remove all dirt, grease and other surface contaminants. The entire area should then be grit blasted, using an angular abrasive, to give a surface finish of Swedish Standard Sa2½ (near white metal finish) ensuring a minimum 3 mils (75 micron) profile.

On completion of the blasting procedure, all prepared surfaces should be rewashed with Belzona® 9111 to remove residual blasting debris.

Application

Select the appropriate Belzona® product and apply a thin even film over the area to be re-profiled, using a stiff short bristled brush to ensure maximum penetration of the pitted surface and minimal air entrapment.

Apply further layers of product using a brush, or a suitable flexible applicator, until all pitted and eroded areas are completely filled, taking care to avoid air entrapment.

Finally, use a suitably shaped rigid former, or template, to fair off excess product in order to restore original internal profiles (fig. 1).

For further information with regard to rebuilding specific critical areas, refer to the relevant Belzona® Know-How Systems Leaflets:

- CEP-1 “Rebuilding pump cut waters, flow straighteners diffuser/impeller/rotor vanes”.
- CEP-2 “Reforming reseating wearing rings, bushes, bearings and gland housings”.
- CEP-7 “Repair of vacuum pump end covers”.
- CEP-8 “Rebuilding vacuum pump covers”.

For further information with regard to complete internal protection, refer to Belzona® Know-How System Leaflet CEP-3 “Applying internal coatings” or, with regard to concrete volutes, CEP-10 “Efficiency enhancement coatings”.

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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® 1151</td>
<td>Paste</td>
<td>Good</td>
<td>40 minutes</td>
<td>48 hours</td>
</tr>
<tr>
<td>Belzona® 1311</td>
<td>Paste</td>
<td>Excellent</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® 1151</th>
<th>Belzona® 1311</th>
<th>Belzona® 1221</th>
<th>Belzona® 4301</th>
</tr>
</thead>
<tbody>
<tr>
<td>General repair where machinability is required</td>
<td>•</td>
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<tr>
<td>General repair where machinability and/or long working life overcoating time is required</td>
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<tr>
<td>High erosion resistance - machining not required</td>
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<tr>
<td>Emergency repairs</td>
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<tr>
<td>Repairs requiring maximum chemical resistance</td>
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<td>•</td>
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<tr>
<td>Rebuilding/Smoothing of shallow pitting</td>
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</tr>
</tbody>
</table>

Recommended Equipment:

Mixing and application tools are included in each pack of Belzona®. Prior to carrying out the repair, however, it is important that all other necessary tools and equipment are available on site. Every situation will be somewhat different, but the basic requirements could include those shown to the right.

- Grit Blasting Equipment
- Clean Rags
- Belzona® 9111
- Grinding Equipment
- Suitable Protective Clothing/Equipment
- Stiff Bristled Brushes
- Flexible Applicators
- Rigid Formers or Templates
- Space Heating Equipment

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.

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