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### **Eroded and Corroded Rudders and Propellers:**

The Following ThistleBond section is concerned with the repair of erosion damage and for the application of erosion/ corrosion resistant coatings for:

**Rebuilding and protection of rudders, propeller strut assemblies, propellers, kort nozzles, bow and stern thruster tubes, hovercraft fan blades and pylons, jet propulsion systems and propeller shaft flanges.**

### **COMMON DEFECTS**

Damage to surfaces due to erosion/ corrosion or mechanical damage

### **PREPARATION**

All work should be carried out in strict accordance with the relevant ThistleBond Technical Data Sheet. Product selection and application technique should be made on the basis of the predominant problem and the operational environment of the equipment. Where damage is confined to surface pitting of the component, this may be rebuilt by applying the ThistleBond product directly to the surface of the component. Where thin sections or lost edges are to be rebuilt, these will need a framework or support the ThistleBond material. Frameworks can be achieved any number of ways including:

- **Bolting on of Steel plates**
- **Screwing or bonding steel gauze/ expanded metal**

### **SURFACE PREPARATION**

The surface of the component to be rebuilt should be washed down with ThistleBond Universal Cleaners to remove all dirt and grease. If the repair is to be left exposed and not protected by a surface coating than a shallow groove must be machined around the perimeter of the repair area in order to rebate the repair materials and avoid feather edging. This groove can be machined or cut by the use of a small mechanical grinder fitted with a cutting disc.

The whole of the repair area and framework, where applicable is to be grit blasted to **Swedish Std Sa 2 1/2 ensuring a profile of 75 microns minimum.** On completion of all preparation and before the application of any ThistleBond material all repair must be re washed with ThistleBond Universal Cleaners.

## **APPLICATION TECHNIQUE**

Select the appropriate ThistleBond 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 prepared surfaces and minimal air entrapment.

### **a). Re-profiling Surface Pitting**

Apply further layers of product using a brush or suitable flexible applicator, until all pitted and eroded areas are completely filled, take care to avoid air entrapment. Finally, use a suitably sharp rigid former or template to fair off excess product in order to restore the original profiles.

### **b). Rebuilding with frameworks**

Further material should than be applied to provide a depth of approximately 1/8" over the entire framework and surrounding area, which should then be contoured to the original component profile using suitably shaped rigid formers or templates, to fair off excess product.

## **TECHNICAL SUMMARY**

<b>PRODUCT</b>	<b>CONSISTENCY</b>	<b>EROSION RESISTANCE</b>	<b>WORKING LIFE (20C)</b>	<b>FULL CURE (20C)</b>
<b>Super Metal Rebuilding System</b>	<b>PASTE</b>	<b>MEDIUM</b>	<b>25 MINUTES</b>	<b>72 HOURS</b>
<b>Extended Life Super Metal Rebuilding System</b>	<b>PASTE</b>	<b>MEDIUM</b>	<b>60 MINTUES</b>	<b>5 DAYS</b>
<b>Ceramic Carbide Wearing Compound</b>	<b>PASTE</b>	<b>MEDIUM</b>	<b>25 MINTUES</b>	<b>5 DAYS</b>

## **THISTLEBOND SYSTEM SELECTION**

### **MAIN SYSTEM SELECTION**

General Repairs where machining  
Is requires

SUPER METAL REBUILDING SYSTEM

Repairs where machining and or  
Longer working time is needed

EXTENDED LIFE SUPER METAL REBUILDING SYSTEM

For repairs where erosion resistance  
Is required

CERAMIC CARBIDE WEARING COMPOUND

For infilling of Cavitated areas

SUPER METAL REBUILDING SYSTEM