

Example of a Successful Application

Steel Mill Cooling Water Pumps



STEEL MILL COOLING WATER PUMPS

These pumps are some of the largest rotating pump units operating in the Netherlands.

Their capacity is 20,000 cubic meters/hr @ 750 rpm. Pump length is approximately 13 meters and the width @ volute is approximately 2 meters. Motor size is 2 mega-watts.

The purpose of these pumps is to remove water from a river which is then used as a circulating coolant in an adjoining Steel Mill

PROBLEM:

The pumps are pulling in sand and silt from the river which is extreme abrasive to the WET END of the rotating units - causing severe damage to volute and impeller.



Due to the pump size and location, it is an expensive process to remove the pumps in order to perform any damage repair or maintenance.

Due to the motor size and hP consumption it is preferable that units are protected against damage in these areas.

SOLUTION:

A pump unit was removed from its location by crane and lorry. The unit was then taken to ROODHART engineering workshops, where it was dismantled into manageable parts.



The complete wet end of unit was then taken for grit blasting to a .75 micron surface finish.

The damaged volute was repaired by hot metal. Other damaged areas were re-profiled with THISTLEBOND TR240 - Heavy Duty / High Abrasion Resistant Ceramic / Carbide Repair System

The complete wetted part areas were then coated with THISTLEBOND TR 205 Abrasion Resistant Fluid Ceramic. The unit was then re-assembled and returned to the application site.

The second pump unit is at this moment receiving the same treatment at ROODHART HOLLAND

BENEFITS / ADVANTAGES OF USING THISTLEBOND CERAMICS

There are major COST saving benefits to the end user by using THISTLEBOND Ceramic Coating and Repair Products. The pump will now continue in service for a much longer period of time. This will reduce the MTBCO (Mean Time Between Change Out) and thus save money as well as dramatically reducing the down-time considerations.

Fluid flow characteristics through the wet end of this rotating unit will be further enhanced by the use of THISTLEBOND FLUID CERAMIC - thereby ensuring maximum return on investment for the end user.

Due to the EXTREME HARDNESS and ABRASION resistance of the THISTLEBOND Ceramics - an extended operating life can be enjoyed by the end user thereby making further financial savings.

FURTHER APPLICATIONS:

The following pictures show pump repairs / coatings that have been undertaken by ROODHART.

All of the following pumps were located ON BOARD SHIPS. They are for various applications ranging from FRESH water to SEA WATER applications.



In all cases the same PROBLEM existed. Erosion and Corrosion effects of WATER.

In all cases the same SOLUTION applies. The use of THISTLEBOND TR 200 to repair damage and to re-profile where required and TR 205 to provide a protection surface to guard against further Erosion and Corrosion!