KSA SUPERALLOYS ENG, has a history of over 40 years in the field of industrial maintenance in Greece. Since 2003 the activities were mainly focused in the penetration of new markets and cover the industry requirements in advanced materials, in-situ hardfacing and machining processes and the manufacturing of special mechanical equipment.

Our engineers are specialized in developing new applications and products with superalloys, cemented carbides, ceramics and hardfacing materials.

Innovation and after sales customer support is our philosophy in order to increase reliability & operating performance, by reducing the production and maintenance cost.

Using our know-how, modern design methods, smart manipulation and advanced coating & sintering production techniques, KSA SUPERALLOYS ENG managed to become the perfect partner in fighting abrasion, erosion, corrosion and high temperatures problems.

We engineer your wear solutions

Industrial areas:
- Cement Plants
- Chemicals/Refineries
- Power Plants
- Pottery and Brick industry
- Mining/Ore
- Geotechnical products/Excavations
- Metallurgy
- Constructions/ Machining tools

The term **IN-SITU**

By the term “in-situ” the function of welding & hardfacing process is applied exactly in the natural place, where the equipment has been installed and operate.
IN-SITU Hardfacing using our smart manipulation technology

IN-SITU WORK PROCEDURE

A preliminary work before is conducted, to determine the available dates for project execution according to customer production needs, in collaboration with customer engineers.

Logistics issues and selection of the proper supply chain network is very important, to ensure the delivery of the portable equipment on customer’s plant on time, according to the agreed schedule.

Maximum effort is given during the set-up of the portable hardfacing equipment, to complete it at the soonest possible time and comply with the schedule given from the customer production department.

Our rollers rotation systems provide the possibility of flexible configuration getting over space and geometry limitations inside the mill.

Hardfacing parameters and execution procedure is -a key to success factor- to provide a perfect quality materials structure, inside the soonest possible time given from customer production department.

Using 2 or 3 integrated manipulation systems for hardfacing simultaneously, is possible to minimize the total project execution according to the customer requirements.

STUDY - PREPERATION

Workpiece simulation & testing of the portable equipment operation and determination of the required hardfacing parameters is executed in our workshop, before visit with of our workteam at the customers place.

Manufacturing of high performance vertical mill segments, with hard-facing overlayers.

Gouging of old hardfacing before rewelding.

The final hardfacing structure on roller segments.

Total regeneration with hardfacing of roller presses and crushers.

Manufacturing of spare parts and ventilation fans with advanced wear protection materials.

The roller grinding profile before and after hardfacing in-situ.

Highest Quality & Reliability using Materials & Technology
IN-SITU Machining using our specialised portable units

Machining in-situ of kiln tires and support rollers with portable lathe machines.

Portable lathe for kiln support rollers with twin cutting tools and real time dimensional measurement & alignment with D.O.M.D.

Combination of in-situ hardfacing & machining, to modify the grinding geometry of the table track.

WORK PROCEDURE

Installation of our diameter & ovality measurement device (D.O.M.D.). Measurement of the external diameters. Checking for diameter differences between the two edges across roller or tire surface. Precise alignment with the micrometric determination of diameters.

Multiple cutting tests on the irregular roller or tire surface diameter to determine the precise alignment. Regulation of dual cutting tool orientations, placement and apply of trial machining at the roller or tires edges.

Precision system alignment according to the kiln main axis slope and thrust angle sharing the position of the cutting tool edge between the supporting kiln rollers. Machining is applied on tire or rollers surface to create a cylindrical diameter or to restore the correct angle, direction and roughness for thrusts in tires.

Final quality control of cylindricity and ovality of the machined external diameters of support rollers and tires, with the D.O.M.D.

THE IN-SITU MACHINING

The "in-situ" machining process for the dimensional restoration of vertical mill table tracks, supporting rollers, kiln tires and thrust tire surface, is constituted from portable lathe machine manipulators with 2-axis linear and angular displacement, absorption bases.

For the proper alignment of the portable lathe machines we use our high precision measurement device for the dimensional determination of the kiln shell ovality, diameter difference and eccentricity at the tires and support rollers.

The design and shape of our portable machine-tools for kiln tires and thrust, allows the absorption of kiln tire fluctuations, in two planes x-y, because of the thermal dilations, the axial shift of kiln and the worn out surface profile. The absorption system protects the insertion of the cutting tools-inserts in the tire surface preventing the resulting fracture and kiln surface damage.

Why Hardfacing & Machining IN-SITU

- LESS MAINTENANCE COST
- REDUCTION OF DOWNTIME
- IMPROVED MATERIALS PERFORMANCE
- DIMENSIONAL RESTORATION
- REPAIR OF FAILED OR DAMAGED AREAS
- HARDFACING OF COMPLICATED FOR DISMANTLING EQUIPMENT

"In-situ” machining of internal diameters on heavy valve bodies and industrial equipment.

Self rotated special lathe machine tool on a turbine rotor blades.
Integrated Portable Hardfacing & Machining Equipment

Custom manufacturing of portable manipulators and high precision machine tools provides the most reliable solution for “in-situ” hardfacing or machining projects. These flexible and easy to adapt manipulators are manufactured from 300 –1200mm travel distance and they can be ordered in various sizes according to the particular customer demands. Our sales engineers visit customer’s plant, study and prepare for manufacturing, integrated hardfacing or machining portable units at the most cost effective basis.

SPECIFICATIONS

Welding manipulators are controlled to operate in 2-axes, X-Y move, horizontal and vertical from the main control panel. Start-up, welding current & voltage, feed rate of the hardfacing flux cored wires, and rotation speed of the part to be hardfaced, are also controlled from the same control panel. A remote control is also used to regulate the hardfacing parameters and monitor the process near the workpiece. All the above can be supplied in duplicated or tripled quantities to apply smart hardfacing with two or three manipulators simultaneously.

Integrated Portable Hardfacing & Machining Equipment

Our equipment is delivered in various factories all around the world, in protected and easy to handle metallic cases.

Feel confident to contact our sales department for more information