

# TECHNOLOGY BRIEF

IMPROVE PUMP EFFICIENCY AND RELIABILITY

## FMP COATINGS

# CeramaClad Technology

*Pump lining technology reduces friction and absorbs energy of cavitation bubbles*

Cavitation is a fluid mechanics phenomenon that is formed due to vapour cavities in a liquid, also known as “bubbles” that are a consequence of forces acting upon the fluid. It occurs when a fluid is subjected to rapid changes in pressure and forms bubbles where the pressure is low, when subjected to higher pressure these bubbles implode and can generate an intense shock wave causing major wear on the impeller and casings. This in turn, will alter the dynamics of the fluid flow, lowering the efficiency of the pump, driving up energy costs.

Cavitation is not solely a mechanical problem. Damage resulting from electro active fluids such as sea water can result in aggressive galvanic attack from dissimilar metals in the pump as well as repair welds. The smoother the pump surface the less likely it is to form bubble nucleation sites, due to differential surface morphology and fluid direction.

A slick erosion resistant and flow efficient coating has proven to protect pumps from this damage and reduce expenditure. Additionally, replacement costs can be eliminated when damage is repaired and rebuilt using FMP's **PATCHER** Kevlar™ based metal repair technology, followed by an overcoat with FMP's ceramic cladding **CERAMACLAD ARII**, which is a sprayable ceramic or **CERAMACLAD AR** which is a hybridized blend of polyurethane/epoxy ceramic coating for higher impact resistance.



## Key Features

- Excellent abrasion resistance
- Solvent free - non flammable, zero VOCs
- Applied by brush - simplified application method
- Excellent adhesive strength greater than 5,000 psi
- Resistant to harsh chemicals
- Fast return to service

## Technology Benefits

**CERAMACLAD AR**, is a novel hybridized engineered wear protection technology that takes advantage of two resin chemistries; epoxy resin for its chemical resistance and elastomeric polyurethane for its high tear strength and impact resistance. The engineered ceramic blend within CeramaClad AR produces a composite matrix that includes both silicon carbide along with an elasto-plastic technology that provides both ultra high wear performance along with a novel crack arresting property to minimize surface fracture during high impact and erosion service.

**PATCHER** offers ease of use with high build metal repair properties. The strength and surface tolerance of PATCHER makes it an ideal choice to repair the base metal repair and restore the surface finish.

