

A REVIEW ON HARDFACING AND WEAR REDUCING TECHNIQUES ON INDUSTRIAL VALVES

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ABSTRACT

Surface engineering for tribological applications aims at two basic objectives:

- To improve the applications of friction, lubrication and wear.
- To modify overall surface hardness.

Tribology comes from the Greek word, “tribos”, meaning “rubbing” or “to rub” And from the suffix, “ology” means “the study of” Therefore, Tribology is the study of rubbing, or “the study of things that rub”. The process leading to loss of material is known as "wear". Major types of wear include abrasion, friction (adhesion and cohesion), erosion, and corrosion. Wear can be minimized by modifying the surface properties of solids by one or more of "surface engineering" processes (also called surface finishing) or by use of lubricants (for frictional or adhesive wear). If a component is not completely separated from its counter-face by a fluid film, its tribological behavior critically depends on the properties of the contacting surfaces and hence the choice of contacting materials becomes important. Thus, a material selected on the basis of strength and bulk properties may be unsuitable for its tribological properties. It is well known that wear resistance of surface increases with hardness and hence to resist wear one should go for a material of high hardness. Materials with good tribological characteristics are often very expensive and difficult to fabricate.

The method used in surface engineering may be broadly divided into two categories:

- Treatment of surfaces
- Coating of surfaces.

KEYWORDS: Hard Facing, Valve