

## TO STUDY THE TWO BODY ABRASIVE WEAR BEHAVIOUR ENGINEERING MATERIALS

**Nagam Sai Teja**

RGUKT Basar, Nirmal, India

*sai375121@gmail.com*

### ABSTRACT

Materials used in applications such as elevator bucket seats, oil drilling tools, dies for hot metal working, gears etc. undergo severe wear during the service. In addition, they may also get effected by corrosion and oxidation as well. Some times, surface modifications of different thickness coatings are employed to overcome the wear. Hardfacing is one of the most useful and economical way to influence the performance of severe wear conditions and usually carried out by spraying or welding techniques.

In the present study, mildsteel plates are hardfaced using manual metal arc welding with martensitic stainless steel electrode, at an arc voltage of 20-25 V (DC) and a current speed of 120-140 A with a welding speed of 3.5 mm/sec. The Hardfaced and well polished samples were charecterized using X-Ray diffraction to ascertain the phases present in the welds. As a result of hardfacing, and the presence of martensitic phase the hardness value increased from 240 HV for mildsteel to 393 HV for hardfaced martensitic steel. The suitability of the material is correlated with the observed microstructural features.

*Keywords: hardfacing; wear*