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### Investigations on effect of FCAW process variables in heat loss reduction clad layers

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**Abstract:**Weld cladding is a process of depositing a material over another material by a suitable welding process to enhance various surface properties of a material. This work deals with the metal cladding process to conserve a quantity of heat energy in pressure vessels. It is done by producing a low thermal conductivity material layer over a high thermal conductivity boiler material plate. Austenitic stainless steel grade 316L is deposited over IS: 2062 structural steel plates using FCAW process. Five factors five levels rotatable central composite design is used for experimentation. Experimental study is carried out on shape relationship factors and capable mathematical models are developed for the prediction. Direct and interaction effects of process parameters on surface shape quality characteristic factors are discussed.

**Key words :**Cladding, heat loss, thermal conductivity, Response surface methodology.

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