

## Study of Mini Steel Re-Rolling and Pickling Mills for the Reduction of Accidents and Health Hazards

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**Abstract :** Objectives: For the manufacture of a very thin strip or a strip with a high-quality finish, the stainless steel sheet that is called billet is re-rolled in re-rolling mill to make stainless steel sheet of 18 gauges. The rolls of re-rolling mill exert tremendous pressure over the sheet and there is likely chance of breaking of stainless steel strip from the sheet. The objective of the study was to minimise the number of accidents in steel re-rolling mills due to ejection of stainless steel strip and to minimize the pollution caused by the pickling process used in these units. Methods: Looking into the high rate of frequency and severity of accidents as well as pollution hazard in re-rolling and pickling mills, it becomes essential to make necessary arrangements for prevention of accidents in such type of industry. The author carried out survey/inspections of a large number of re-rolling and pickling mills and allied units. During the course of inspection, the working of these steel re-rolling and pickling mills was closely studied and monitored. A number of accidents involving re-rolling mills were investigated and subsequently remedial measures to prevent the occurrence of such accidents were suggested. Assessment of occupational safety and health system of these units was carried out and compliance level of the statutory requirements was checked. The workers were medically examined and monitored to ascertain their health conditions. Results: Proper use of safety gadgets by workers, machine guarding and regular training brought down the risk to an acceptable level and discharged effluent pollution was brought down to permissible limits. The fatal accidents have been reduced by 83%. Conclusions: Effective enforcement and implementation of the directions/suggestions given to the managements of such units brought down the no. of accidents to a rational level. The number of fatal accidents has reduced by 83% during the study period. The effective implementation of pollution control device curtailed the pollution level to an acceptable level.

**Keywords :** re-rolling mill, hazard, accident, health hazards

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