MODIFICATION OF A THREE HIGH STAND TO OBTAIN FIVE PASSES FOR HOT ROLLING OF STEEL

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The existing steel rolling mill is greased to roll 60x60 mm, and 100x100 mm cross section billets. Due to difficulties in purchasing smaller sizes of billets and also to increase productivity, the mill was modified to use 80x80 and 100x100 mm billets. But only 75x75x7 and 10, 65x65x7 angle section could be rolled from 100x100 billets with the present set-up and the design features of the mill.

There are so many ways of doing a modification to the existing mill to roll all sizes of rounds, flats and angles using 100x100 cross section billets. But the cheapest and the easiest way is the addition of two more passes in the three high stand of the mill after which rolling is done using the existing machinery which will be inexpensive and less time consuming.

In Japan, a rolling mill similar to ours in Sri-Lanka uses this five passes to roll bigger sizes of billets. But mechanism is completely different to ours. Main factors such as economy, output have been considered when designing and manufacturing of the mechanism.

Ceylon Steel Corporation, Industrial Engineering Department has done a study on this experiment and it is found that the out-put is 4 tonnes less than the actual capacity per hour. This figure was obtained for rib 25 mm. They say this gap of 4 tonnes could be gained by doing operations simultaneously.

When considering the over-all performance of the experiment it can be said that the design was successful and further this gives an indication of the possibility of using the billets cast by Stage II.