Reinforcement Steel Optimization

HIGHBAR
TECHNOCRAT

Saving costs with optimization of reinforcement steel

Typically, almost 10-15% of the total project cost in large construction projects is towards the cost of the reinforcement steel. With rebar solution the budgeted wastage of reinforcement steel can be reduced by 20-30%.

Challenges

Large construction projects have significant requirements of reinforcement steel and they maintain steel yards at their construction sites. Generally when reinforcement steel is procured from vendors it is of standard length i.e. 12m. When reinforcement steel has to be used in construction projects depending on the specifications i.e. Bar Bending Schedule (BBS) the standard length bars needs to be cut into the length as required. The remaining pieces from such a cutting process are called as off-cuts.

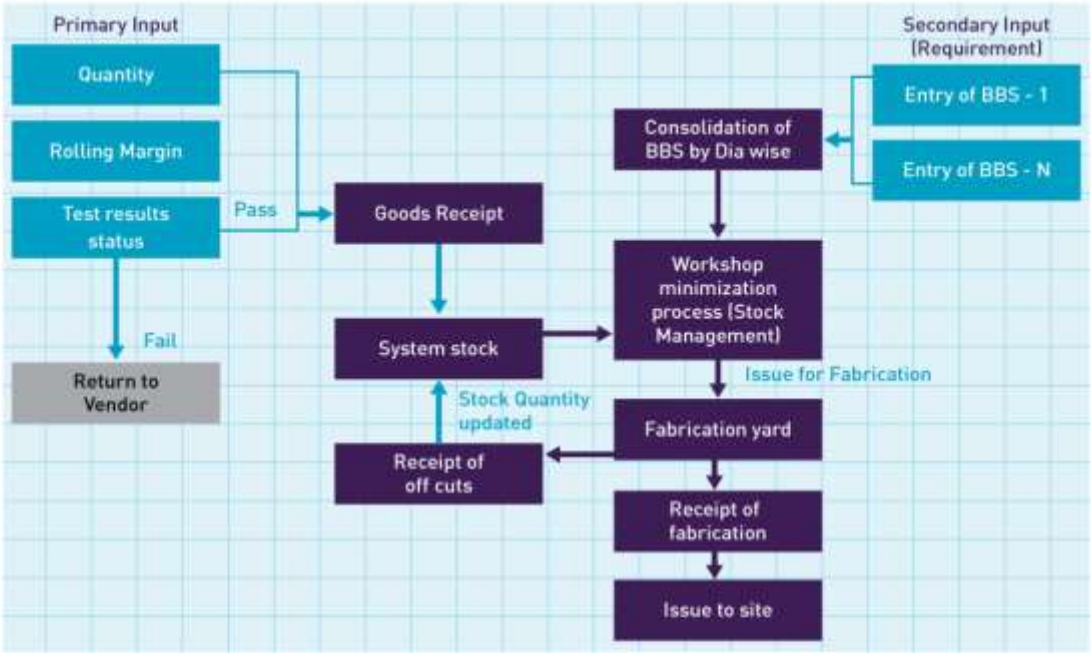
The following are some of the common problems faced at these construction projects.

- The off-cuts usually have no entry or track in any systems and end up being treated as scrap leading to a direct loss of value.
- Stock reconciliation at the steel yards usually tends to be a manual/physical process and takes 10-15 days, resulting in time and productivity loss.
- Based on the utilization of the materials, the subcontractor bills also need to be raised. Since this is also a manual process, this gets delayed and often results in conflicts

Solution

Highbar has developed software called 'Rebar' for optimisation and management of reinforcement steel. The Bar Bending Schedule (BBS) needs to be fed into the system. The system keeps track of inventory available in terms of diameter wise reinforcement bars of different lengths. Software has the optimisation engine that provides best possible cutting schedules so that the wastage can be minimised. The system also allows us to keep track of off-cut pieces so that they may be used in the future to reduce the wastage further.

A representative process flow diagram is as below:



Features

- Keeps track of inventory available in steel yards, including off-cuts
- Optimisation engine provides best possible cutting schedule
- Ensures on-time billing to subcontractors
- Provides intuitive reports including stock re-conciliation report. These reports can be generated by material, sub-contractor etc.
- Works on standard hardware/software and needs minimal training, can be handled by any computer operator

Benefits

The software is being used for the past 4 years by several clients. It has been observed that it provides a wastage reduction of 1-2% of the total reinforcement used for the project. Here are some of the benefits

- Reduction in reinforcement wastage and thereby material cost reduction by 1-2%
- Ability to generate Instant stock reconciliation reports, an activity which usually used to take 10-15 days manual effort
- Easier management of reinforcement steel inventory. This aids in inventory control and procurement monitoring
- Ensures ongoing subcontractor productivity and on-time billing

Key Performance Indicator for Rebar Solution	Change
Total reduction in budgeted wastage of steel	20 - 30%
Payback period for Rebar Application	2-3 Months

INDIA
Highbar Technocrat Limited
27-30, Hindustan Kohinoor Complex,
LBS Marg, Vikhroli (W),
Mumbai - 400083, India
Phone: +91 22 2571 2000
Email: enquiry@highbartech.com
Website: www.highbartechnocrat.com