



ERP & cost saving techniques in foundry industries



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Traditionally below are major cost incurred in any casting production

- a. Raw material consumption cost & variance during melting
- b. Energy cost
- c. Rejection
- d. Machine
- e. Labor
- f. Consumables
- g. Other over heads.

Any foundry industries major objective is to control above cost for better profitability of each product.

Below are the traditionally methodology followed in foundry industry & ERP methodology for better cost control.

Raw material consumption cost & variance:

Manual Process

Normally daily consumption against each melting process (For each Heat) is manually calculated based upon melting super visor experience. Raw material are not always calculated and measured exactly to prepare each melt. This lead to excess utilization of raw material and cost of production varies. This generally happens with high value items Like FeSi, FeCr and etc. Exact utilization of material is not documented accurately. Melting team will never be able to prepare optimum cost charge mix with manual process.

ERP system and control

Material movement from stores to melting department or others are tracked by material request note to material consumption note. Exact consumption has to be accounted by casting production slip. Supervisor will be made accountable for wastages and melting loss as system provides the exact melting loss & spillage.

Material consumed in preparation of each melt will be linked with spector-meter or QA team to check the exact variance of QA elements like CU/NI/SI & etc. ERP system automates the charge mix calculation process to avoid the excess material utilization.

EPR system will be able to provide optimum charge mix cost based upon the multi level BOM and with the exact available commercial information from finance module. This helps to use the proper raw material during melting process.

ERP system provides variance reports against the actual utilization of RAW material with help of BOM module.



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Energy cost:

Manual Process

Energy cost is 10 to 15% of the total cost of production, manual system does not provide exact utilization of energy for each activity/process. Like during melting process power utilized for same quantity of melt will always vary during day's production because of variance reasons like labor delay, mould not availability, pattern not availability & etc. Accountability can not be fixed because of data not availability.

ERP system and control

Energy consumed in each melt are captured in ERP system and energy cost variance for each melt can be made available for manager/superior any time to fix responsibility on delays to avoid excess consumption of electricity which shoots up production cost

ERP system captures the auxiliary power consumption in each stage of production /departments to provide better control power consumption variance against actual.

Rejection Cost:

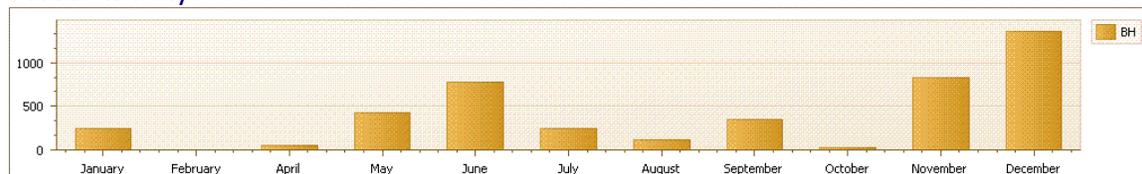
Manual Process

Rejection data are collected in each stage will be documented in hard copy / excel. Data will be not be integrated with any other stages for better analysis because of this reason accountability can not be fixed on process owners, Process owners can easily pass the responsibility on others. Exact trend of rejection can not be obtained timely basis because of manual process. QA review meeting and corrective action taken are not document in systematic way to fix accountability when repeat rejection occurs

ERP system and control

Rejection against each melt/process are captures systematic way. Data can be mined systematically for each process to fix accountability. Corrective actions against each day rejection are tagged. In any repeat rejection, previous corrective action/history can be easily obtained to improve the production process which in-turn reduces the cost of production.

Rejection trend can be easily plotted for any review meeting helps for faster and better QA action. Because of data availability in time process head can not give excuse on accountability.



Product: Pinon. Rejection trend analysis month wise, corrective action for blow defect has to be taken immediately because of growing trend.



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Machine Cost:

Manual Process:

Machine utilization/ efficiency / break down cost are documented manually without any validation of data. It's very difficult to get exact overhead and maintenance cost from manual system. Spares life cycle can not be established

ERP system and control

Daily production log/Non productive time can be captured against each machine to establish accurate utilization & break down trend for any period of time line.

Corrective action can be taken for any non performing asset to increase productivity and control production cost.

| Machines | Part Name | Target Qty. in Nos. | Achieved Qty. In Nos | Achievement w.r.to Target |
|----------|--------------------------------|---------------------|----------------------|---------------------------|
| A1 | 1 Sole Plate (ND - 2) "ALSI" | 900 | 847 | 94.11% |
| | 2 Sole Plate (ALSI) "LEDI" | 400 | 414 | 103.50% |
| | 3 Sole Plate (LM - 25) "LEDI" | 400 | 373 | 93.25% |
| | 4 Sole Plate (LM - 25) "CSI" | 400 | 200 | 50.00% |

Machine wise performance for corrective action

Activity based costing & variance

Costing Sheet

File Help

General Info | Foundry Info

Production Capacity: 20.000 M.T., 20000.000 Kgs.

Liquid Metal Tapped: 28.730 M.T., 28730.000 Kgs. Total Cost Per Kg. 158.10 Rs.

Liquid Metal Poured: 125.877 M.T., 125877.000 Kgs. Total Cost Per Kg. 36.08 Rs.

Grade: ALL Item Name: []

From Date: 01/05/2011 To Date: 10/05/2012

| Particular | UOM | Quantity | Rate | Value |
|--------------------|-----|-----------|--------|-------------------|
| DIRECT | | | | 1753679.74 |
| DEPARTMENT | | | | 1753679.74 |
| MECHANICAL | | | | 24573.49 |
| MELTING | | | | 1509445.75 |
| RAW MATERIAL | | 30530.100 | 42.56 | 1299431.75 |
| ELECTRICAL | | 2099.000 | 6.00 | 12594.00 |
| LABOUR | | 3008.000 | 40.00 | 120320.00 |
| MACHINE | | 135.000 | 569.63 | 76900.00 |
| SUB CONTRACT | | 1.000 | | 200.00 |
| NO BAKE HAND MOULD | | | | 6000.00 |
| GREEN SANDs | | | | 9000.00 |
| FETLING & PACKING | | | | 298.00 |
| MACHINE SHOP | | | | 204362.50 |
| INDIRECT | | | | 2788430.00 |
| Transportation | | | | 785950.00 |
| Sub contract | | | | 2002480.00 |

Costing Sheet Details

Activity based costing for daily cost variance analysis