

# **Summary of Technical Sessions**

## **Flat Mills**

# TECHNICAL SESSION 1A: Flat Mills-1

Day 1: Mar 19, 2021,

11:15-13:15

Total Number of Technical Presentations: 7

Sl No	Topic	Presenter	Plant
1	Yield improvement at Strip Mill	Mr. Rachin Verma	Jindal Stainless Ltd., Hisar

- Some of the actions taken to reduce cobble are: Modification of Inter stand entry guide, Provision of adjustable width arrangement in looper and installation of stripper movement in top stripper assembly
- Yield improved from 97.57% to 98% resulting in saving of Rs 129 lakhs/ yr.

Sl No	Topic	Presenter	Plant
2	<b>Performance improvement at Plate Mill through equipment augmentation</b>	<b>Mr. Vinay Singhal</b>	<b>JSPL, Raigarh</b>

- Frequent Failures/Breakdowns of Mill Pinch Rolls due to jerk/ impact load reduced by providing balancing arrangement.
- Installation of valve block/ balancing cylinder during shutdown carried out. Benefit of ~Rs. 20 lakhs/month achieved from this innovative work.

Sl No	Topic	Presenter	Plant
3	<b>Modified roll cooling system of Plate Mill</b>	<b>Mr. B Das</b>	<b>RSP, SAIL</b>

- Roll cooling system of work roll and backup roll modified by incorporating flat jet nozzles, self-cleaning filter and flow control system.
- This led to improvement in thermal profile, reduction in specific roll consumption with annual benefit of ~Rs. 4 crore.

Sl No	Topic	Presenter	Plant
4	<b>Elimination of pitting in high strength microalloyed grade for wheel segment</b>	<b>Mr. Shivnath</b>	<b>Tata Steel, Kalinganagar</b>

- Pitting on the surface observed in SPFH590 grade supplied for Disc application
- Loose scale in the edges found to be reason for pitting which is mainly visible after forming. Roll cooling practice modified to mitigate the problem

Sl No	Topic	Presenter	Plant
5	Maintenance improvement of Plate Mill	Mr. M Meyyappan	BSP, SAIL

- Frequent bearing failure of de-scaling pump observed due to oil contamination and water ingress
- Centrifuge was provided to improve the oil quality and reduce the bearing failure

Sl No	Topic	Presenter	Plant
6	<b>Enhancement of mechanical properties in plates using accelerated cooling</b>	<b>Mr. S Mitra</b>	<b>BSP, SAIL</b>

➤ Optimization of finish rolling temperature and accelerated cooling parameters have led to significant improvement in ferrite grain size and reduction in variation in the through thickness grain size. This has led to improved mechanical properties.

Sl No	Topic	Presenter	Plant
7	Investigation on the genesis of the shape deformation of plates in New Plate mill, RSP	Mr. Praveen Kumar	RDCIS, SAIL

- Innovative solution to reduce waviness in the high strength Plates found after hot leveller.
- The plates were hold till the temperature reaches less than 450 °C and then passed through hot leveller to reduce the waviness .



## TECHNICAL SESSION 2A: Flat Mills-2

Day 1: Mar 19, 2021,

15:00-17:00

Total Number of Technical Presentations: 8

Sl No	Topic	Presenter	Plant
1	Reduction in coiler top pinch roll cost by utilization of extra diameter	Mr. Ranjeet Yadav	JSW, Dolvi

- Useable life of pinch roll increased from 25 mm to 40 mm by modification in Pinch Roll sleeve inside diameter from 865 mm to 850 mm
- This has also led to improved strip surface quality due to reduction in pinch roll mark

Sl No	Topic	Presenter	Plant
2	<b>Breakthrough Enhancement in Coil shape of Down coiler-1, HSM</b>	<b>Mr. Vinayak Vadagave</b>	<b>Tata Steel, Jamshedpur</b>

- Outer Wrap Shifting in Down coiler reduced by ~18% by reducing the tension, pinch roll force and increasing the guide pressure in tail end.
- Staggered winding of the coils was also reduced by various measures taken in down coiler.

Sl No	Topic	Presenter	Plant
3	Metallizing of Roughing Edger Rolls of Hot Strip Mill	Mr Santhosh Sivan K B	BSL

- Rolls reclaimed by Metallizing and turning process. This helped in increasing the roll life from 5 campaign to 7 campaign.
- This led to annual saving of Rs. 24 lakhs.

4	Debottlenecking of plate mill issues	Mr N Mohapatra	NPM, RSP
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- Various innovations and modification done by the team NPM RSP results in improved various techno economy Parameters.

SI No	Topic	Presenter	Plant
5	<b>Increasing Mill utilization by liner build up in Main Rolling Stand</b>	<b>Mr Luv Kumar Sahani</b>	<b>Slabbing Mill, BSL</b>

- Increasing Mill utilization by liner build up in Main Stand.
- Liner build up done by metalizing of worn out liner. This has reduced tie rod breakage of top horizontal spindle

6	<b>Improvement of Roll Consumption in HSM(Rourkela Steel Plant)</b>	<b>Mr AK Sethi</b>	<b>HSM-1, RSP</b>
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- Various Steps taken like Increased water pressure in Roll cooling system upto 10 bar, Installation of auto backwash filter system and Regular Thermal profile monitoring of Rolls helped in lowering down the specific roll consumption (from 0.721 to 0.632 kg/t), increase in mill availability and better quality of end product.

Sl No	Topic	Presenter	Plant
7	<b>In-house development of Online Surface Defect Detection System (SDDS)</b>	<b>Mr Jignesh Topiwala</b>	<b>AMNS Hazira</b>

- Discussed about development of Online surface Detection system for CSP mill leading to low quality diversion ratio. This also helped in reduction in strip breakages at CRM, Reduction in offline inspection and Reduction in recoiling – downline quality issues.

SI No	Topic	Presenter	Plant
8	Innovations done at CRM-III, BSL for performance and quality improvement	Mr Amit Kumar Singh	CRM-III, BSL

- Frequent strip breakages roll spalling observed due to faster wearing of Stand#1 work rolls.
- The problem was mitigated by decreasing the % reduction in stand#1, increasing the roll surface roughness and reducing the cycle over tonnage from 3000 to 2000 tons
- This led to reduction in strip breakage by ~60% and roll spalling by 77%.

## TECHNICAL SESSION 3A: Flat Mills-3

Day 2: Mar 20, 2021,

10:00-12:00

Total Number of Technical Presentations: 9

Sl No	Topic	Presenter	Plant
1	Productivity increase by optimizing the I/P specification	Mr. Pankaj Kr Singh	JSW., Bellary

- Actions taken to improve the operating efficiency during rolling of lower cross section from 72% to 75% of Pickling Line Tandem Coil rolling mill by optimizing reduction schedule within mill capability

Sl No	Topic	Presenter	Plant
2	<b>Introduction of step less roll bending system in all stand in TM-1 of CRM 1 &amp; 2</b>	<b>Deepak Kumar</b>	<b>BSL, SAIL, Bokaro</b>

- A step less system of roll bending mechanism was introduced with the help of a new pumping station and proportionate valve in all the four stands. It helped in better control of roll bending pressure leading to improved shape of the coil and reduced product diversion from 0.67% to 0.46%.



Sl No	Topic	Presenter	Plant
3	<b>Up-gradation of emulsion pumping circuit in TM-1 of CRM I &amp; II</b>	<b>Mr. Rajesh Kumar</b>	<b>BSL, SAIL, Bokaro</b>

- Old Russian pumps were replaced with high efficiency pumps with VVF drives. This helped in achieving adequate flow and pressure (2 to 8 kg) in mill stand. This eliminated the leakages and drastically reduced the down time.

4	<b>Annealing and rolling of thinner gauge coil, CRM I &amp;II</b>	<b>Mr. V Supreet</b>	<b>BSL, SAIL, Bokaro</b>
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- Normally thinner gauge (0.4 mm) coils are processed through Continuous annealing. Process technology developed to process these coils through hood annealing which are not suitable for CAL. The process parameters were selected to avoid sticker problem during hood annealing.

Sl No	Topic	Presenter	Plant
5	Performance improvement of CRM	YSNVSN Murty	Tata Steel BSL Ltd, Khapoli

- Identified the genesis of Scratch line generation in thicker gauge material during first pass from carryover table. Rejection due to scratch line reduced by provision of ideal roller assembly in carryover table.
- Sheet scrap generation due to gauge variations, coolant patches etc reduced by design modification of carryover curtains and optimization of pass reduction along with front/back tension.

Sl No	Topic	Presenter	Plant
6	<b>Yellow strain defects reduction in CRM line</b>	<b>Mr. Yogesh Tripathi</b>	<b>AMNS</b>
<p>➤ To address the issue of yellow stains generated in CRCA (cold rolled close annealed) product from coolant carryover from stand-5, an external top/bottom wiper after Stand 5 was installed for clean surface of the product.</p>			
7	<b>Reduction in Coiler pinch roll consumption by 50%</b>	<b>Mr. O P Mishra</b>	<b>AMNS</b>
<p>➤ Crowned bottom Pinch Roll used instead of cylindrical pinch roll. This has lead to reduction in pinch roll changing frequency by 50%. This led to savings of Rs 55 lakhs/annum</p>			

Sl No	Topic	Presenter	Plant
8	Replacement of cam operated switch assembly by electronic encoded based system in Welding machine, Pickling Line	Mr. H Guruprasad	RSP SAIL

- Problem of strip breakages in pickling lines due to failure of weld joint was solved by installing a micro controller based system using optical encoder and relays in the welding machine.
- Relays with LED indication has helped in easy identification of fault.

Sl No	Topic	Presenter	Plant
9	<b>Development of 2J finish Stainless Steel for Metro Coaches</b>	<b>Mr. K Ramanathan</b>	<b>SSP SAIL</b>

- Process technology established to develop 2J finish in 301L grade St/DLT temper in 2 & 3 mm thickness as per BEML requirement.
- The properties achieved as per specification.

Thank you