BANGLADESH CLEAN ENERGY SUMMIT BY IDCOL

SUCCESS STORY OF VRM IN BASHUNDHARA GROUP

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DMD (C.S) Bashundhara Group
FIRST PRIVATE AND PIONEER ENTREPRENEUR IN BANGLADESH CEMENT INDUSTRY SINCE 1992

REGISTERED TRADEMARK ENTITIES ARE:

1. **King Brand Cement (Meghna Cement Mills Limited)**.

2. **Bashundhara Cement (Bashundhara Industrial Complex Limited)**.
Cement Plant
Meghna Cement Mills Ltd & Bashundhara
Industrial Complex Ltd.
Mongla, Khulna
Cement Plant
Bashundhara Industrial Complex Ltd.,
Madangonj, Dhaka
WHY WE CHOOSE VRM?

• VRM VS BALL MILL
VRM:
THE COMMINUTION IN THE VERTICAL ROLLER MILL TAKES PLACE BY EXPOSING A BED OF MATERIAL TO A PRESSURE SUFFICIENTLY HIGH TO CAUSE FRACTURE OF THE INDIVIDUAL PARTICLES IN THE BED

Ball Mill
BALL MILL THE COMMINUTION TAKES PLACE BY IMPACT AND ATTRITION
TOP 3 VRM MILL SUPPLIER

LOESCHE

PFEIFFER

FLSMIDTH A/S
GRINDING PRINCIPLE OF UBE VERTICAL MILL
(TWO WAY SYSTEM)
(Developed By UBE '1984)

Sub Roller for Stabilizing
Main Roller for Grinding

Additional Roller Press
Roller weight

Grinding Force
Table rotation

Materials contain a lot of air
De-aeration by Pressure

Stable material bed is formed.
$\mu^\prime$: Dynamic friction coefficient becomes bigger!
• **Ball Mill** is a horizontally placed tube shape cylinder in which raw materials of cement are grinded by different size of balls.
- Faster initial & final setting times are recorded in the VRM product than the Ball mills for the same blain value.

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<thead>
<tr>
<th></th>
<th>Blaine</th>
<th>Initial Set</th>
<th>Final Set</th>
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<tbody>
<tr>
<td>Ball</td>
<td>3700</td>
<td>2:30</td>
<td>4:45</td>
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<tr>
<td>VRM</td>
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- Particle size of distribution (PSD) of the finished product obtained from VRM is much better than Ball mill product. As a result better strength development is obtained in VRM product.
SPECIFIC POWER CONSUMPTION (GRINDING CIRCUIT)
VRM SAVE 23% TO 44% ELECTRICITY

MONGLA PLANT

BALL MILL (KWH/T)  VRM (KWH/T)

46.71          35.86

DHAKA PLANT

BALL MILL (KWH/T)  VRM (KWH/T)

52.63          29.62
OPERATIONAL COST (BDT)

- Ball Mill: 474,17
- VRM: 459,79
SSPECIFIC PRICE OF CIVIL WORKS

CIVIL COST

BALL MILL

100%

VRM

73%
100% SLAG GRINDING

√ VRM  × BALL MILL (Max 30%)
HIGHEST PRODUCTION CAPACITY IN A SINGLE UNIT

√ VRM (UP TO 640TPH)

× BALL MILL
OPC PRODUCE IN VRM AT HIGHER BLAINE

1. The unique Dual Lobed grinding roller with central groove & wedge shaped grinding profile were developed to meet the special challenges of grinding cement, such as OPC.
DAM RING ADJUSTMENT EASY TO ADJUST HEIGHT QUICK CHANGE OVER PCC TO OPC

Segmented dam ring, easy to adjust in height
WEAR LINERS

• The wear liners of grinding table & the rollers are of the segmented type and are therefore easy to replace when worn out.
OTHER ADVANTAGE WITH VRM

- High productivity with stable, reliable operation
- Long lifetime
- Simple, compact layout
- Versatility
- Modification of PSD curve possible
OTHER ADVANTAGE ........

- EXCELLENT DRYING CAPACITY
- OPTIMUM UTILIZATION OF WEAR PARTS
- PROVEN TECHNOLOGY
- EASY TO ADJUST QUALITY PARAMETERS
ANY QUESTION?
THANKS TO ALL