
IDS
SMART
SCADA+

USER OPERATING MANUAL

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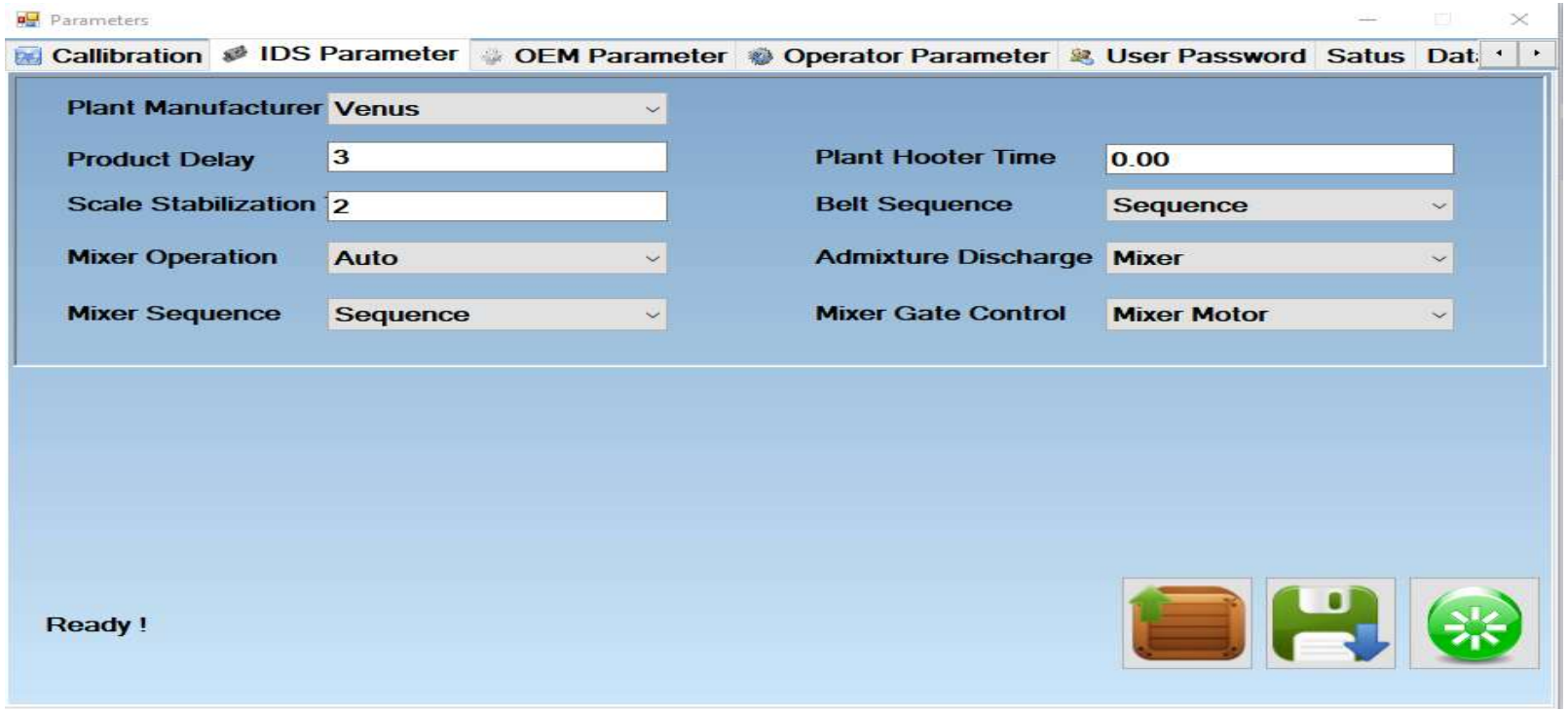
Log On :

At System start up, the above screen shall be displayed . The User has to enter Login name & password .

Main :

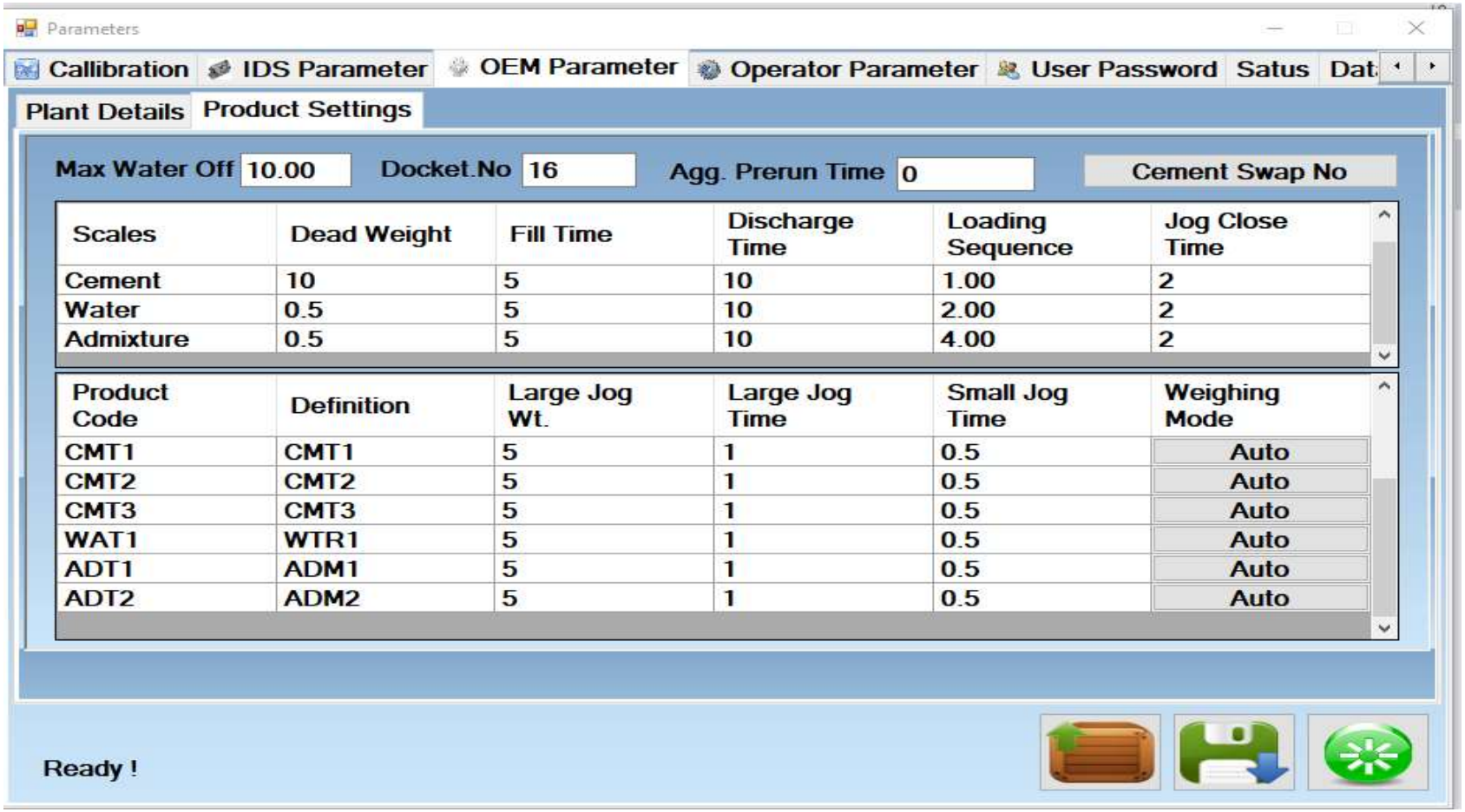
Once Log – On, the above Main screen shall be displayed.
On top of the screen it shows PLC Ready/ Not Ready, Mix Design Button, Sales order Button, Report Button, Settings button, Manual Mimic button etc. It's also shows either PLC is connected or not .

IDS Parameter :



- **Plant Manufacture :** Set the manufacture for the list
- **Product Delay:** Enter the time after which the filling of 2nd product should start..
- **Scale Stabilization time** : Enter the time after which the filling should start on weigher..
- **Mixer Operation** : Set Mixer operation Manual/Auto
- **Mixer Sequence**: Mixer On operation should be sequence or time based..
- **Plant Hooter Time**: Enter the time in sec for which hooter will sound after completion of load
- **Belt Sequence**: Belt On operation should be sequence or time based.
- **Admixture Discharge** : Set the admixture disc selection..
- **Mixer Gate Control**: Hydraulic/Mixer Motor / Time based.

OEM Parameter:



The Product Master allows you to define all products used in the plant.

- Enter a Definition as maintained in your organization for the said product. The product definitions are used throughout the application.
- Enter Jog time parameters & weighing mode (ex. Auto Inflight or Auto Jog).

OEM Parameter:

• **Dead Weight:** Define the allowable value for each scale to start batching. If the indicator reading is less than this value and more than (-30kg for Aggregate, -10 for Cement, -10 for Water And -1.0 for additives), the batching would start, otherwise an alarm will be triggered and system shall wait for the user's consent.

• **Fill Time Selection (Sec):**
If selection is **Reference**, Enter the maximum time in Seconds taken by each material to be filled. If weighing / Filling of a particular material is not accomplished within this defined time an alarm will be generated.

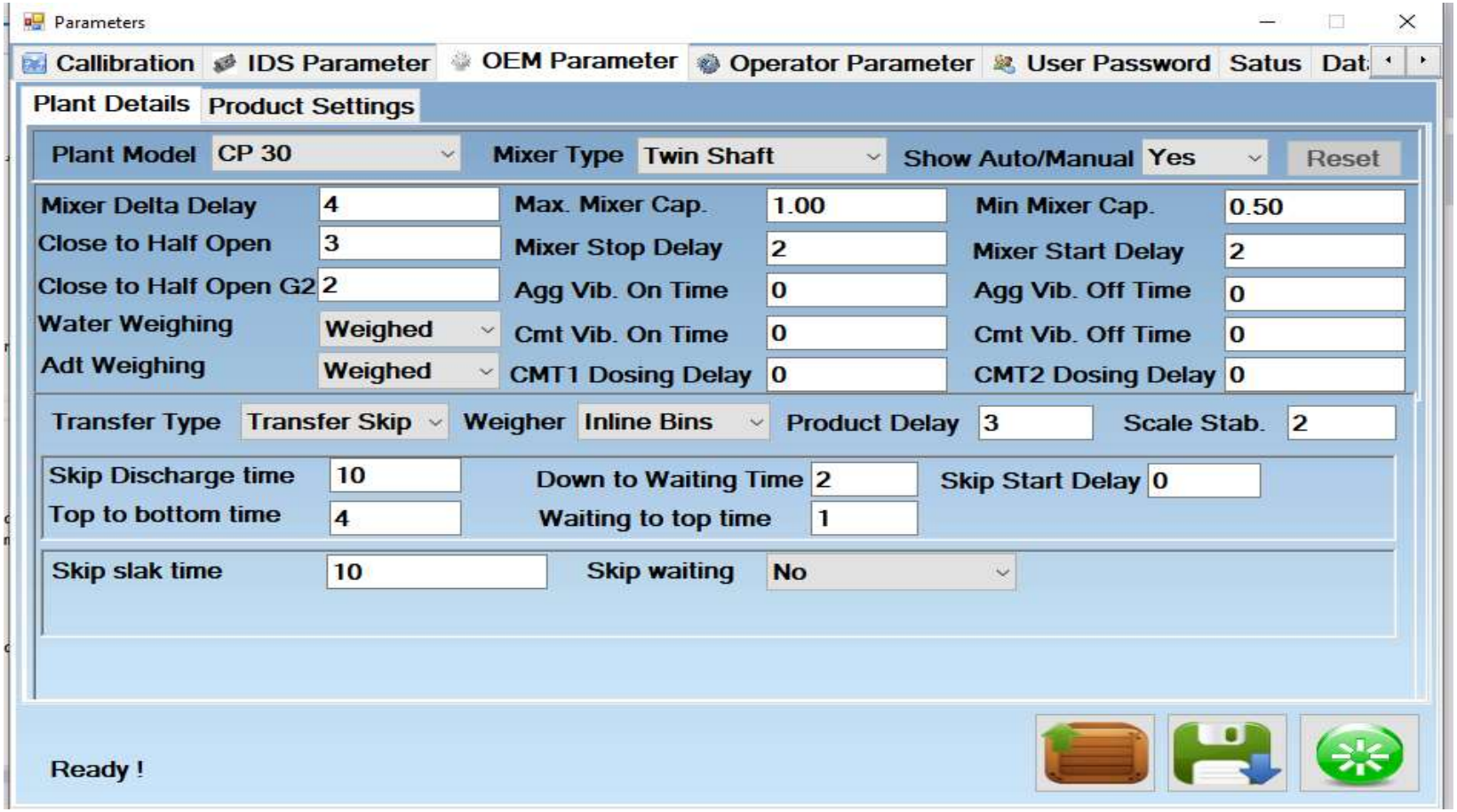
• **Discharge Time Selection (Sec):**
If selection is **Reference**, Enter the maximum time in Seconds taken by each hopper / tanks to discharge all the materials. If all materials are not discharged within the defined time an alarm will be generated and users consent would be awaited.

• **Loading Sequence (Sec):**
• Enter the Lag Time in seconds, to start loading into the mixer
• All materials shall discharge into mixer once aggregates get discharged in to the mixer depending on the Lag Time.
• After the delay, the material is discharged into the mixer.
• For example if the settings are: Aggregate 0 seconds, cement -07 seconds, water 04 seconds, then the loading sequence would be as follow: Water would start loading after 4 seconds followed by aggregate after 1 sec and then by cement after 3 seconds.

• Note: Only one default loading sequence which applies to all the mix designs / recipes.

Plant Configuration :

All Parameters in this section are critical and need to be handled by trained personnel only.
Failure to do so may lead to cause of Death, Severe Injury to Personnel/Equipment !!!



Plant Configuration : OEM

Plant Configuration - Mixer

As the title suggests, this screen helps to select the configuration of the said plant.

- **Mixer Type**: Click on the Combo Box to select Mixer type (Twin Shaft, Pan/Planetary or RD Mixer).
- **Mixer gate Control:** Select Gate control type (by mixer or hydraulic motor).
- **Mixer Current:** Select 'Yes' in case of Ammeter interface option.
- **Maximum Mixer Capacity**: Enter the maximum batch size in M3, Note that the system will calculate number of batches for particular order based on this value. If this value is entered wrongly, there is a danger of all components of plants being overloaded.
- **Minimum Mixer Capacity:** Enter the minimum batch size in M3. Note that the system will not produce concrete less than the prescribed quantity. Remember that this value should not be too less. If values are too less, overall weighing and mixing accuracy might get affected. The recommended to be >= 30% of the maximum values (capacity).
- **Mixer Operation:** Select mixer operation by Auto or manual. If 'Manual' is selected, user should start & stop mixer manually every time. If selection is 'Auto', mixer starts automatically after starting batch & stops when batch completes.
- **Mixer Stop Delay:** The mixer motor will turn off at a predefined defined interval only after finishing all the cycles.

Mixer Parameters :

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- **Full Opening Time:**
  - Set the timing in seconds.
  - the system keeps the discharge gate in full open position, for that period.
  - Then, the system gives a CLOSE command to the gate.

- **Half Opening Time**:
  - After the mixing is over, the system opens the mixer gate till half position.
  - The gate remains open as per the value entered in this field.
  - If there is no half opening position, or the mixer selected is R/D type, this value should be **zero**.

- **Time to Half Open:**
  - This is the time defined for the valve to reach the half open position.

For R/D Mixer :-

- **Stop Time**:
  - This timing should be greater than the time taken by the drum mixer for halting after the stop command.

- **Discharge Time**:
  - Enter timing in seconds to define reverse rotation of mixer.

Skip Parameters:

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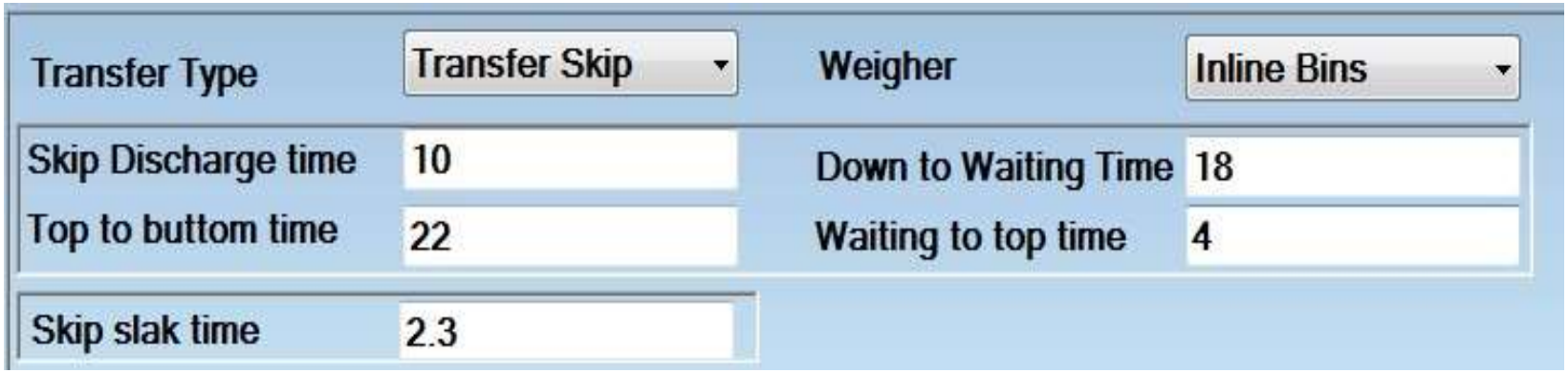
Transfer Skip Parameters

Plant with (Belt /Skip): Configure aggregate type, transfer type, No. of Aggregate scales, Bin types (Inline, Square)



These parameters are related to skip, control and performance.

Transfer Skip / Weighed Skip Parameters :

- **Down to Waiting Time :** Enter the travel time for loaded skip to reach waiting position.
- **Waiting to Top Time :** Enter the travel time for loaded skip to reach top position.
- **Skip Discharge Time :**
  - Enter the discharge time required for the skip to unload into the mixer.
  - The skip will wait in the top position for the time entered here.
- **Top to Buttrom Time :** Enter the travel time for skip to reach at down position.
- **Skip slak Time** : Enter the travel time for skip slak time

Note: It is advisable to add one sec. extra time to all skip related times.

Belt Parameters:

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Transfer Belt Para :

Set & configure the Belt parameters:

- **Belt Delta Delay :** Here, define delay time before starting belt motor.
- **Belt Transfer Time :** Enter the time taken by an aggregate stone to reach waiting hopper / mixer after releasing from the weighing conveyor.

Belt Parameters:

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- **Belt Off Delay :** This is the time delay to stop belt motor after completion of full cycle.
- **Hopper Discharge Time :** Enter the time taken by the aggregate (waiting) hopper to discharge the entire material (one full batch) into the mixer.
- **Time to Half Open:** This is the value for which the hopper open valve shall be excited to reach the half / partial open position.
- **Half Discharge Time:** Enter the value of time in seconds for which the system keeps the discharge gate in half open position, after this time elapses, the system gives a FULL OPEN command to the gate.
- **Open To Close Time:** Enter the time taken for mixer gate full open position to full close position. After this time elapses, the system generates an alarm.

Operator Parameters:

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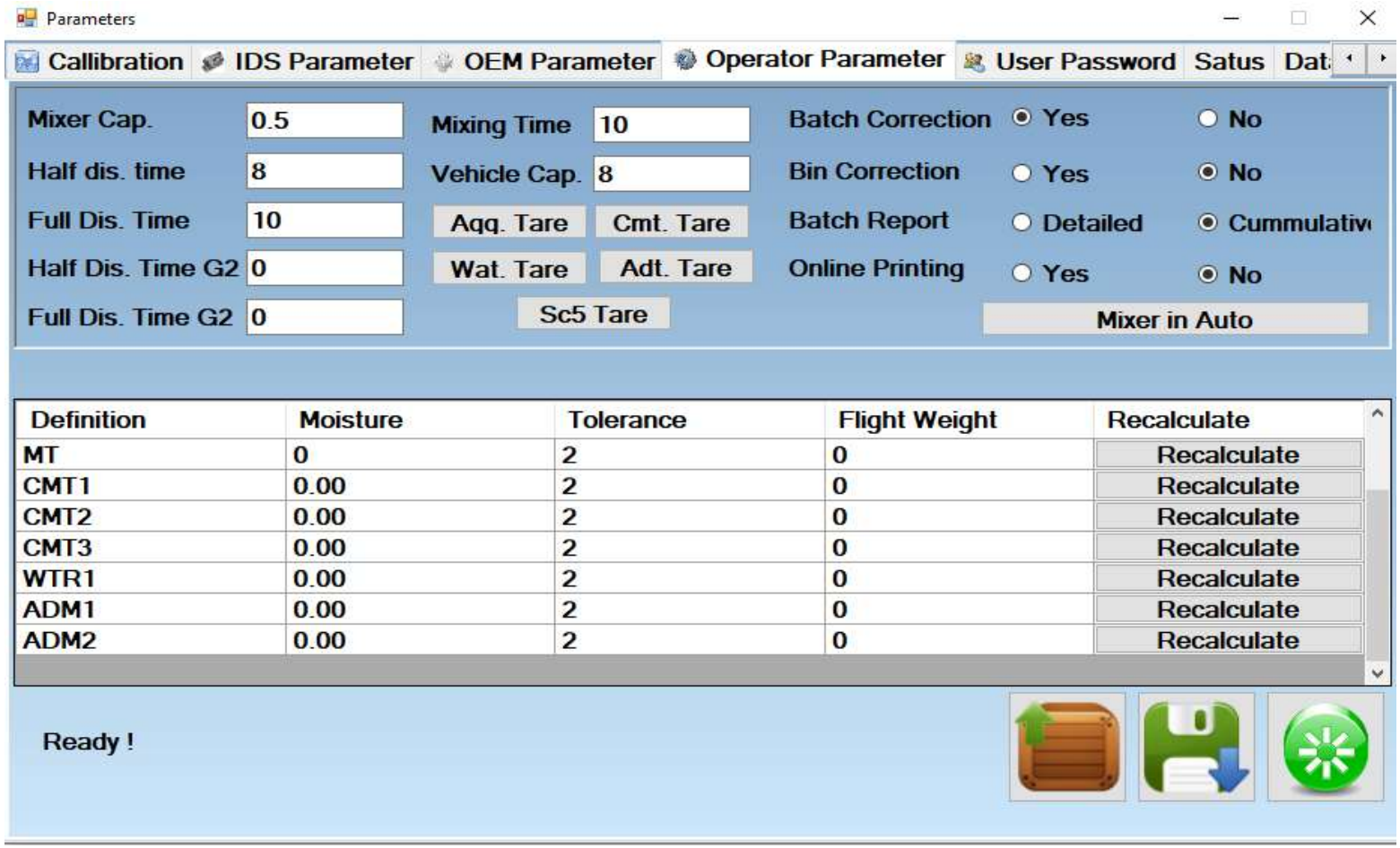

Operator Parameters:

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- **Absolute Tolerance:**
  - Define tolerance in kg/lit or % as defined in Plant Parameters.
  - Whenever a batch crosses a tolerance level, an alarm is triggered.
  - During batching if this alarm is triggered quite often, reset the particular extractor.
  - If the problem persists, check the mechanical operation of the gates.

- **Moisture Type:**
- In manual mode, enter the measured moisture value from the lab (Surface or Absorption).

- User can select Bin Correction / Batch Correction required or not required along with Batch Report printing selection.

- User can do **Tare** for scales if required.

- **Recalculate All Materials:** Any mechanical modifications and/or material change may alter the material flow rate. The affected material flow can be corrected by left-clicking on the respective buttons.

Calibration :

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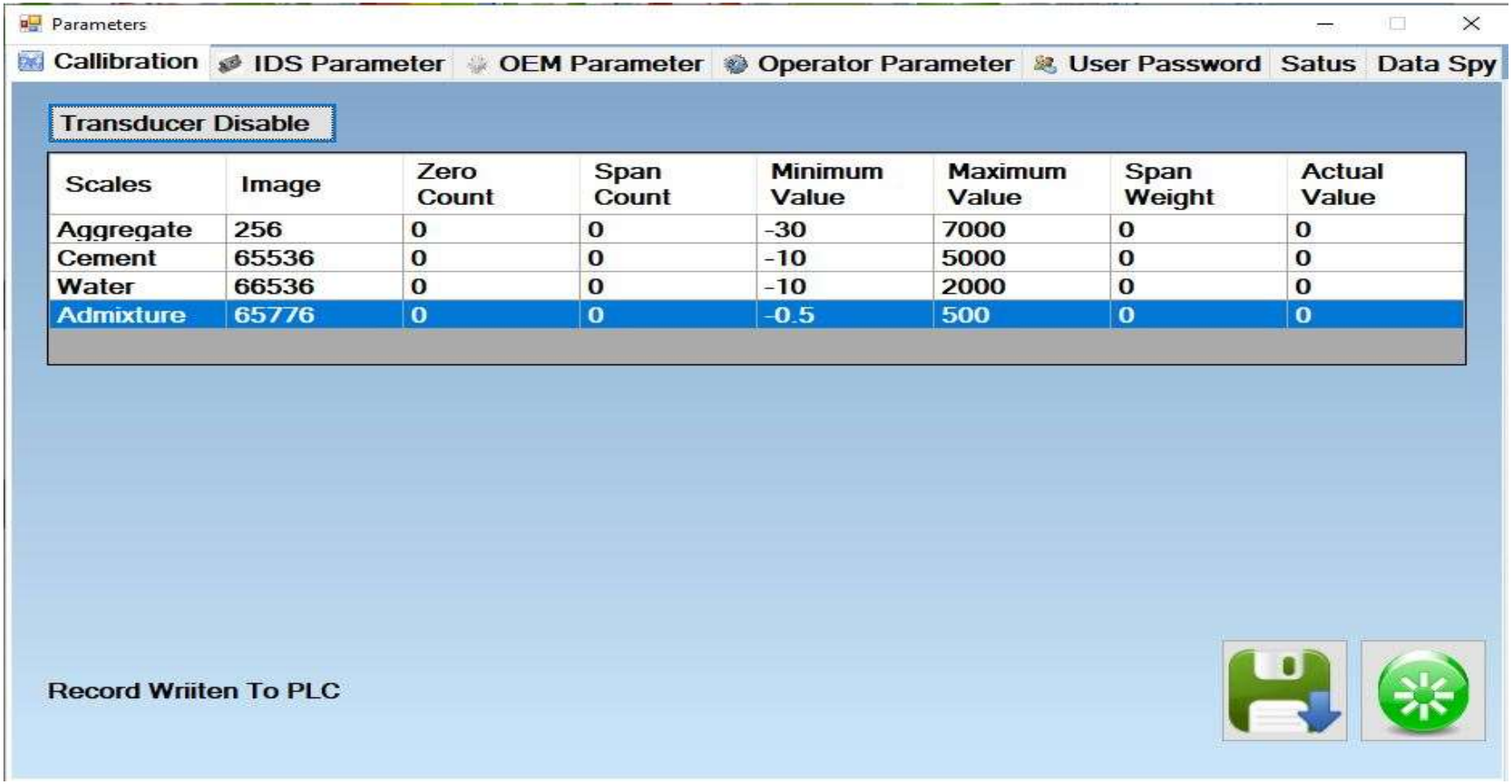

Scales	Image	Zero Count	Span Count	Minimum Value	Maximum Value	Span Weight	Actual Value
Aggregate	256	0	0	-30	7000	0	0
Cement	65536	0	0	-10	5000	0	0
Water	66536	0	0	-10	2000	0	0
Admixture	65776	0	0	-0.5	500	0	0

Calibration :

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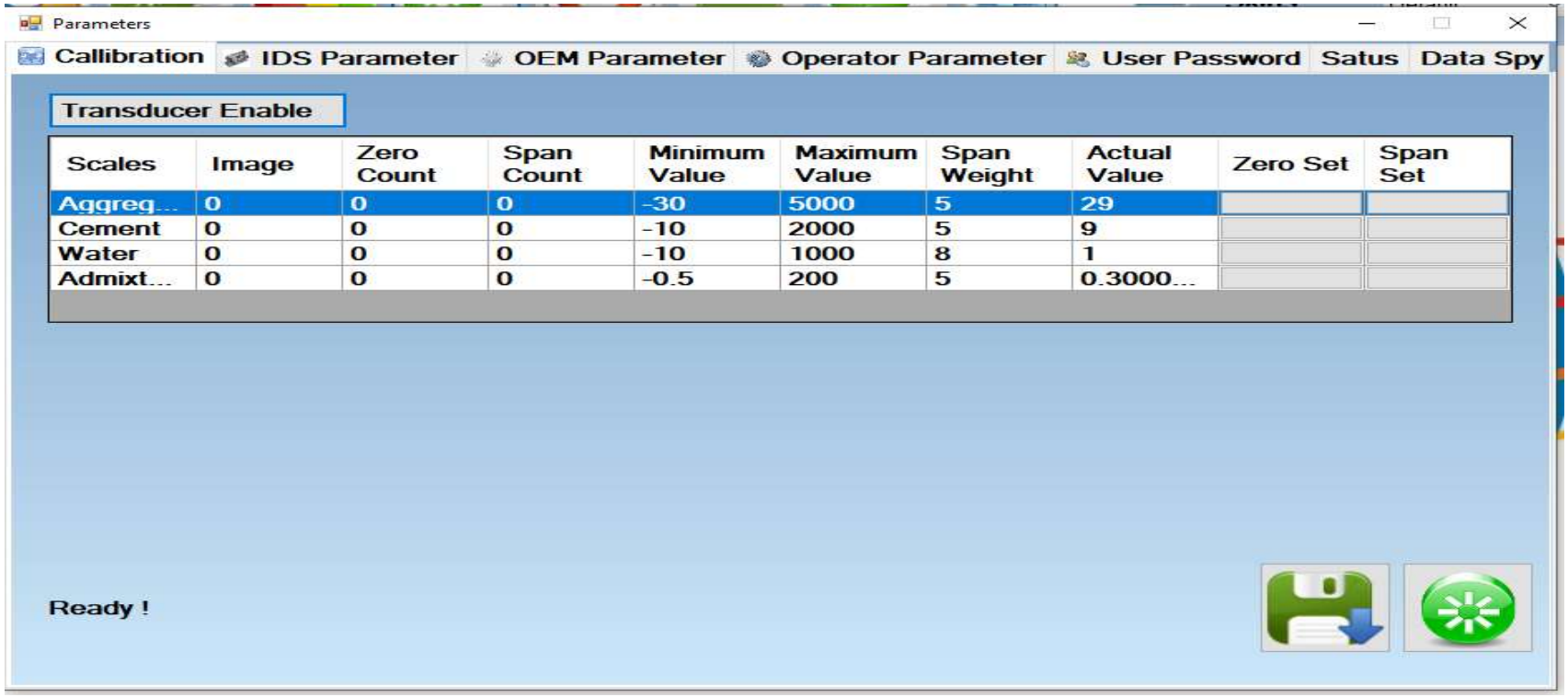
- For calibration setting Go to Calibration section & press on Transducer to enable it for calibration.
- Below shown screen will be open.



Calibration :

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- ***Now Follow Below Calibration process***
- **Step1:** Enter the maximum weight of weigher in **"Maximum Weight Column"**
- **Step2:** Ensure that weigher is empty with zero weight, after that Press "ZERO set" Tab.
- **Step3:** Now Keep 75% of maximum weight on weigher.
- **Step4:** Enter the same weight in **"SPAN Weight"** column, and Then press **"SPAN SET"** Tab in HMI.
- **Step5:** Scale weigher actual value will display in **"Actual Value"** column
- **Step6:** End of Calibration.
- **Step7:** Press on Transducer to disable

Calibration :

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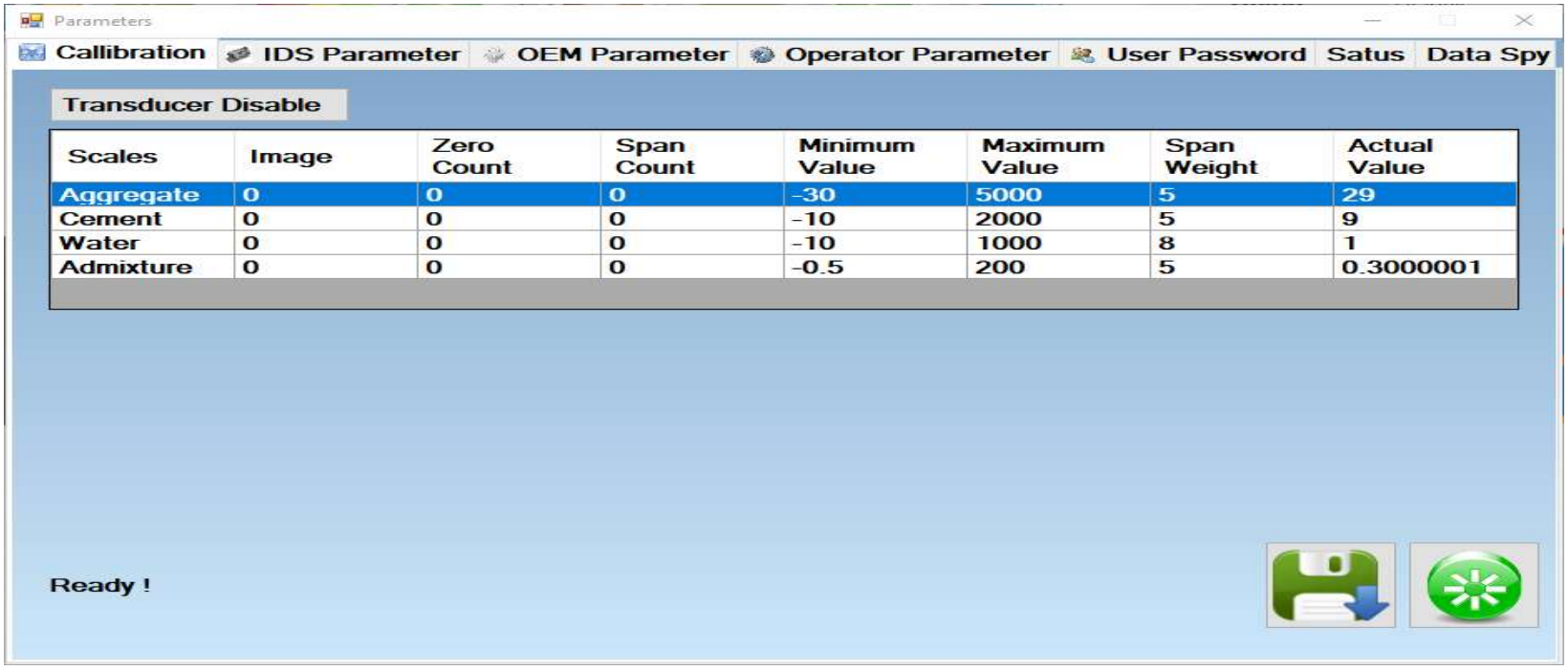
- Below screen will open after this.



Scales	Image	Zero Count	Span Count	Minimum Value	Maximum Value	Span Weight	Actual Value
Aggregate	0	0	0	-30	5000	5	29
Cement	0	0	0	-10	2000	5	9
Water	0	0	0	-10	1000	8	1
Admixture	0	0	0	-0.5	200	5	0.3000001

- **Note:** While auto batching if user press Parameter setting section message will pop-up show that batching is in progress. Now also if user click on parameter setting button then it allow to go but user cannot edit zero set & span weight tab.

Manual Operation :

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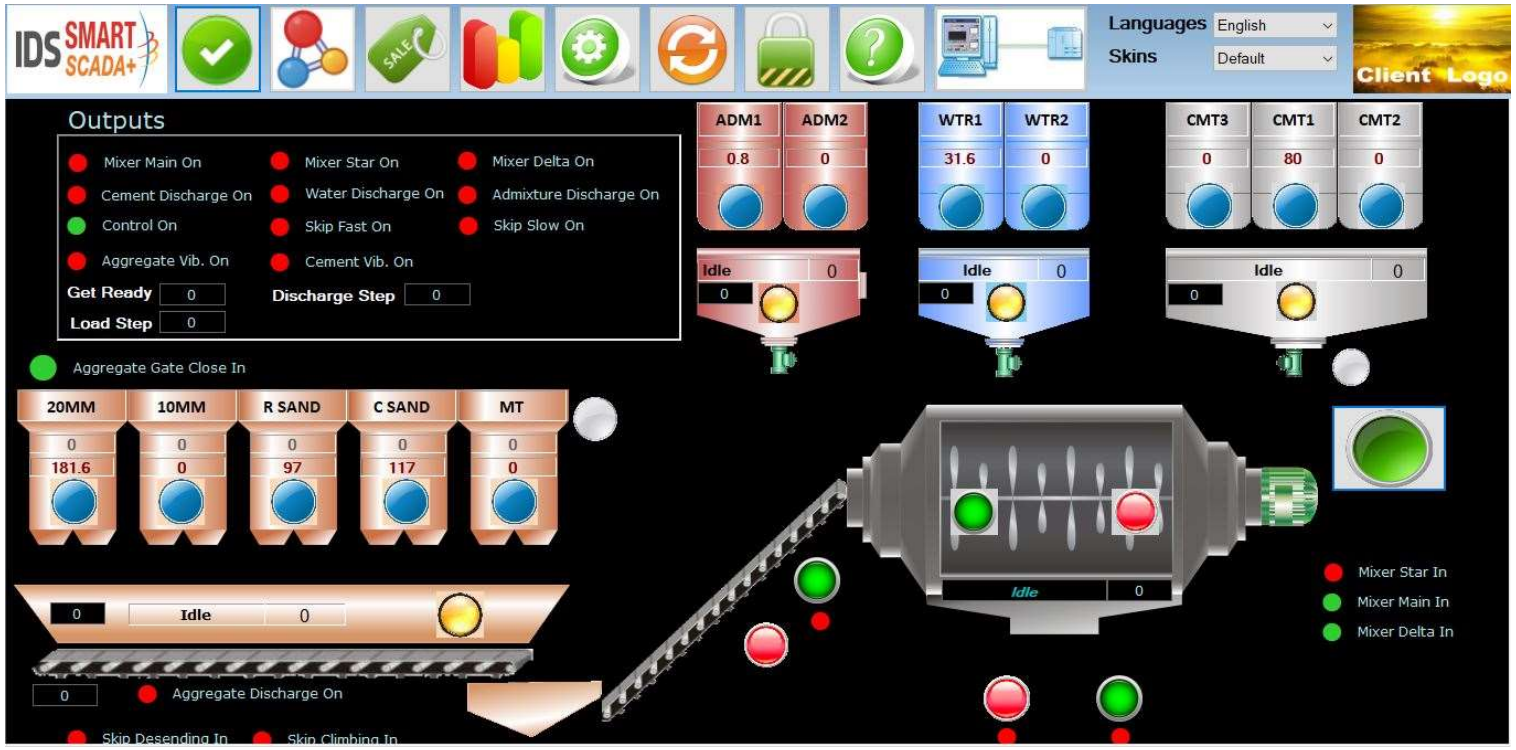
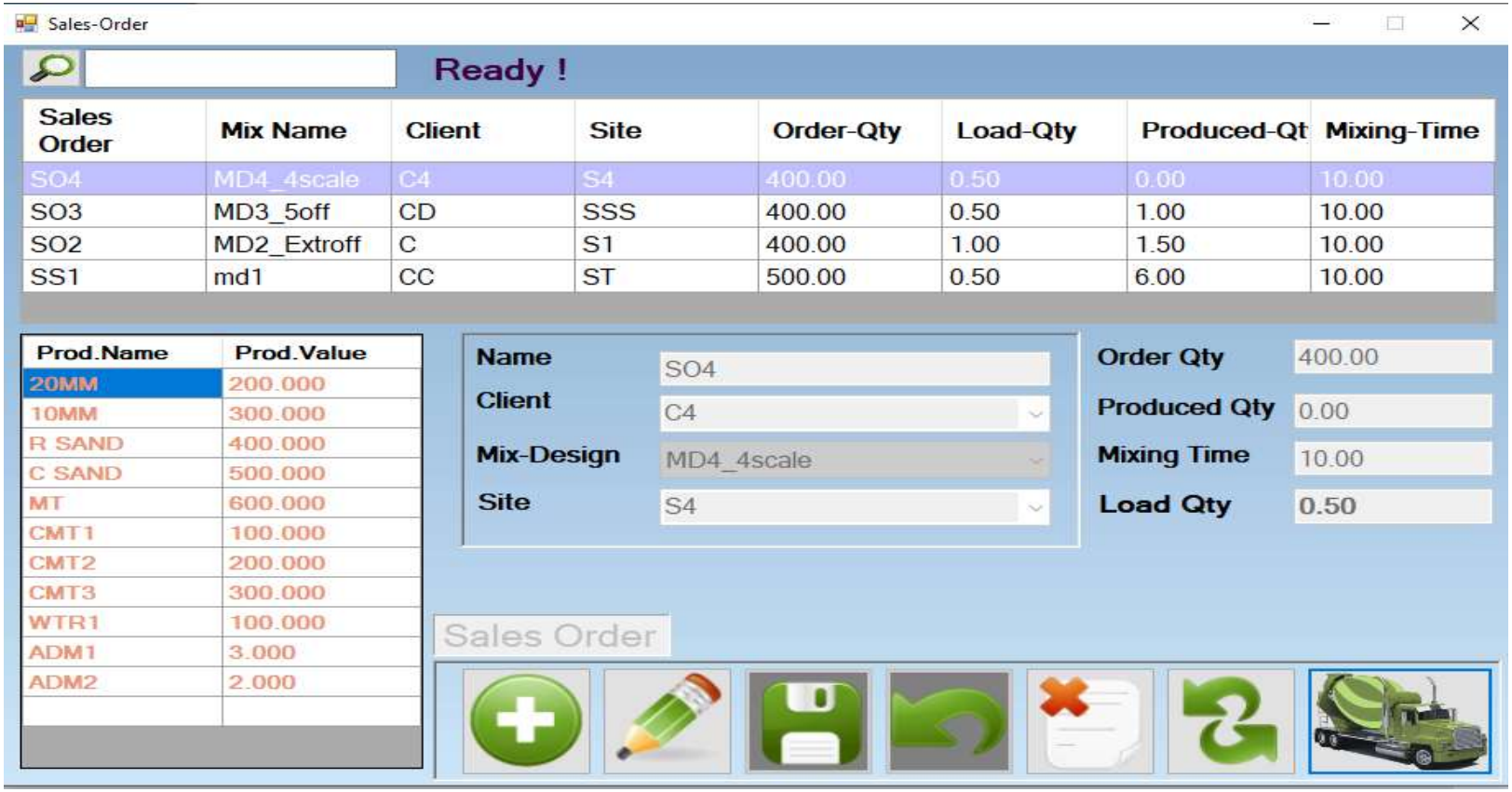


- **Above show screen is the manual operation screen from which user can operate the plant if required.**

Mix Design :

- The screen enables to set & save the Mix Design.
- To Save the Mix Design, follow the procedure:
  - Click - **+** , enter Name **(Alpha Numeric)**, Code & relevant details.
  - Enter the product Values, Load Quantity (Quantity which is to be batched),mixing time
- After entering relevant details click on Save.

Sales Order :

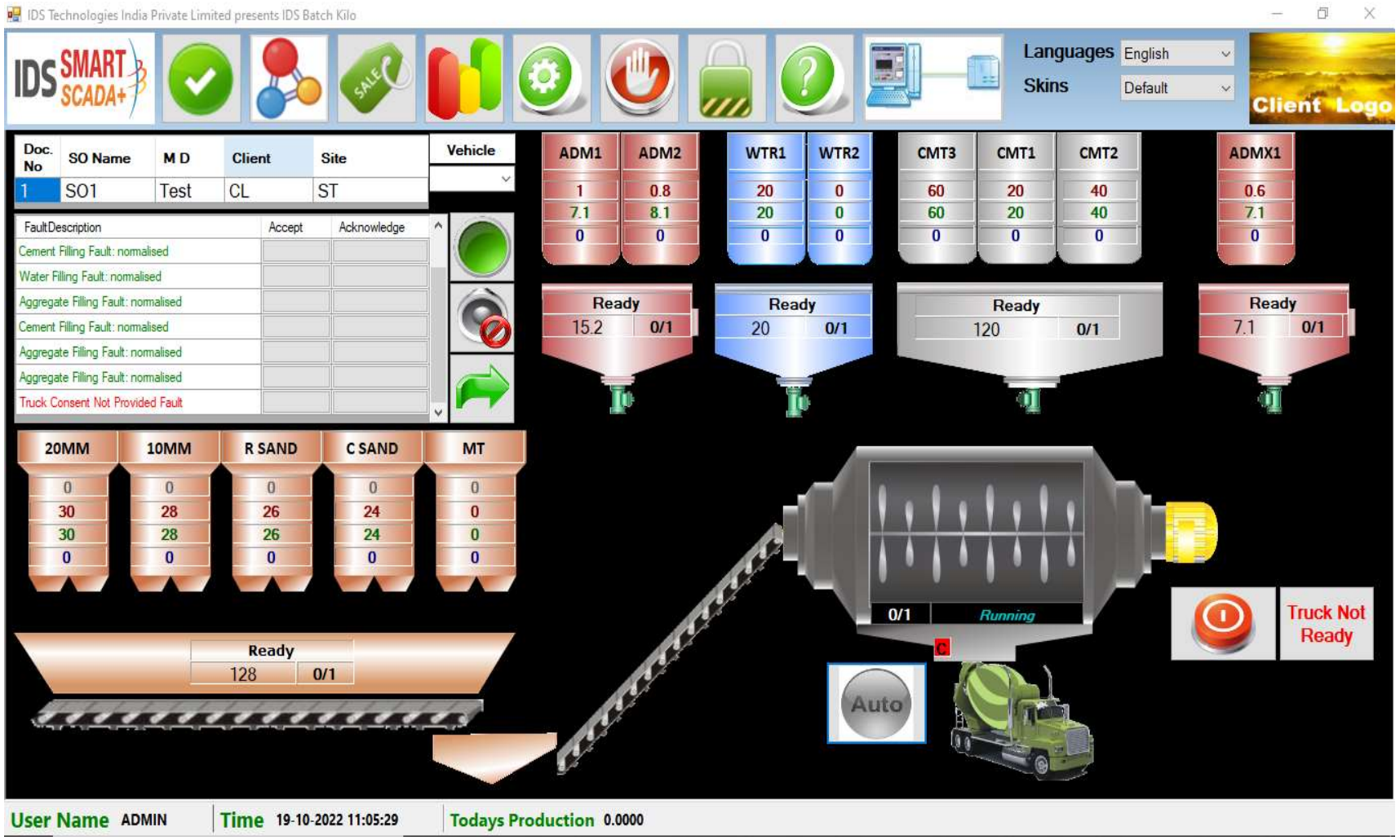


- The screen enables to set & save the Sales Order.
- To Save the Sales Order, follow the procedure:
  - Click - **+** , enter Production Organizer's Name **(Alpha Numeric)**, Code & relevant details.
  - Enter Client & Site Code, Vehicle, etc.
  - Enter Ordered Quantity, Load Quantity (Quantity which is to be batched) & Reference Vehicle Quantity.
- After entering relevant details click on Save.

Sales Order / Local Ticket validation :

The screen displays the details such as Number of loads, batches/load, quantity per load, batch size etc.
Click - **Load Now** to start batching. The following Mimic Screen shall be displayed.

Plant Mimic :


IDS Technologies India Private Limited presents IDS Batch Kilo
IDS SMART SCADA+
Languages English
Skins Default
Client Logo
Doc. No | SO Name | M D | Client | Site | Vehicle
1 | SO1 | Test | CL | ST
Fault Description | Accept | Acknowledge
Cement Filling Fault: normalised
Water Filling Fault: normalised
Aggregate Filling Fault: normalised
Cement Filling Fault: normalised
Aggregate Filling Fault: normalised
Aggregate Filling Fault: normalised
Truck Consent Not Provided Fault
ADM1 ADM2 WTR1 WTR2 CMT3 CMT1 CMT2 ADMX1
Ready 15.2 0/1
Ready 20 0/1
Ready 120 0/1
Ready 7.1 0/1
20MM 10MM R SAND C SAND MT
Ready 128 0/1
0/1 Running
Auto
Truck Not Ready
User Name ADMIN
Time 19-10-2022 11:05:29
Todays Production 0.0000

Mimic

- As shown, the system will display the status of various components / materials continuously.
- The system shows the materials being weighed in decrementing manner.
- Also the status of each material, the batch number, number of balance batches will be displayed.
- The system will also show the status of Mixer, Transfer Belt / Skip & Waiting Hopper.
- Alarms generated & normalized alarms during production, will be displayed at the left bottom grids of the screen.
- While batching, faults may be accepted by clicking on the respective buttons.
- These alarms shall be cleared from the grid by clicking on **Acknowledge All** button.
- Weighing may be terminated / put on hold by right clicking on the respective bins / hoppers.
  On termination, only the present ingredient on that scale will be terminated and batching of other material/s in the said scale as well as other scales shall continue.
- For first batch of every order, the system confirms the presence of vehicle below the discharge shoot. A symbol of truck keeps blinking at the bottom of the screen for acknowledging the presence of vehicle.
- Vehicle presence can be acknowledged by pressing **'Truck Ready'** button.
- The batch cycle will stop indefinitely at skip waiting position. The cycle will continue only after the acknowledgement of **'Truck'**.

Mimic :

Note :
The **'Truck'** key is of toggle type. Hence if it is pressed again, the truck symbol will start blinking again.

Batching cycle can be put on hold, by pressing **Cycle Hold** button. & could be renewed by pressing **Cycle Continue** button.

The cycle can be stopped immediately if there is an emergency by clicking on **Emergency Stop** button.

Note:
Once **emergency stop** button clicked or incase of power failure, PLC will go on hold condition & no process takes place. In such cases, user can release hold by clicking on **PLC On Hold** button from main screen. Or, keep Plant Auto / Manual selector switch in auto mode, press mixer Gate Open & Close buttons simultaneously. This releases the PLC from Hold condition.

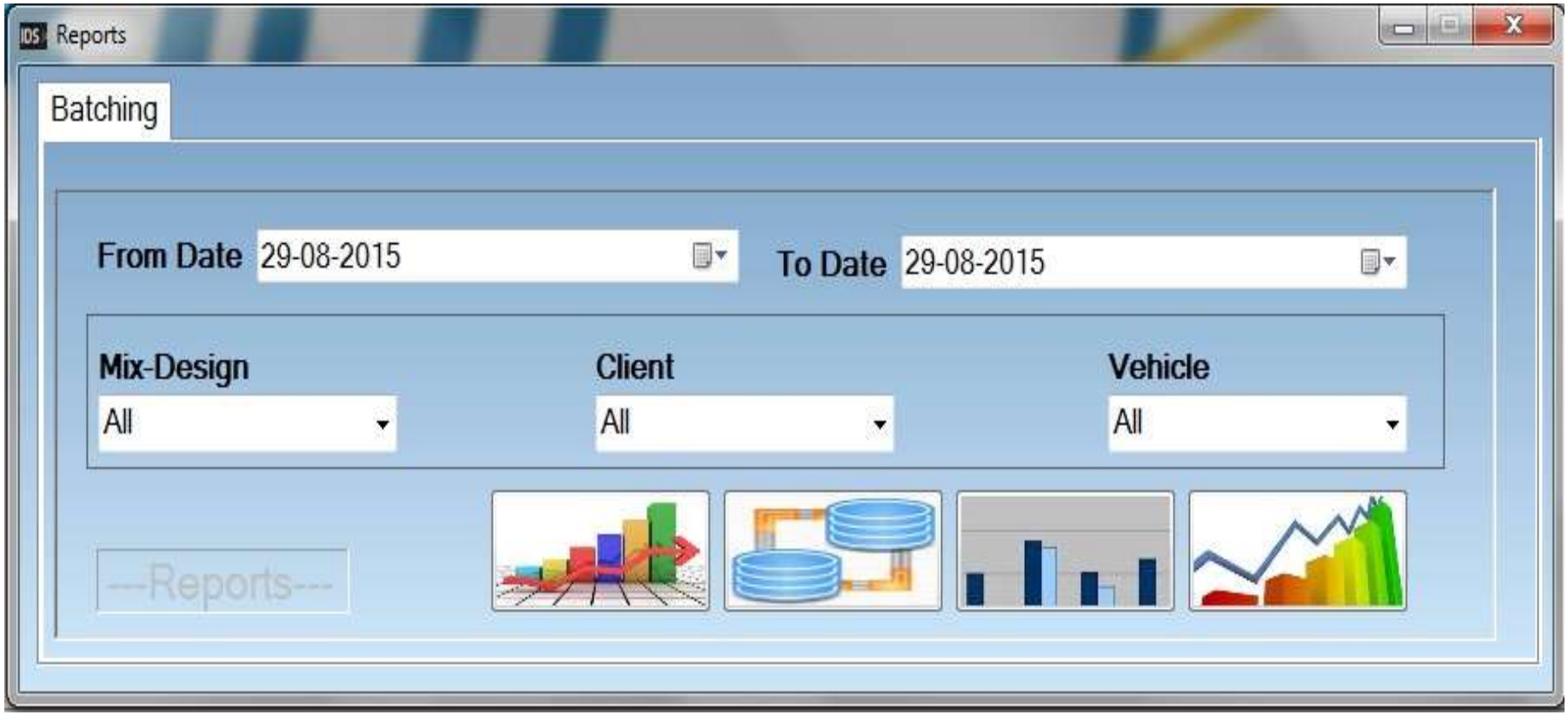
- **Alarms, the user can accept are:**

- ……Dead weight fault !!! (Depending on the weight present on the scale).
- ……Scale Unstable fault !!!
- ……Tolerance fault !!!
- ……Skip Down position fault !!!
- ……Skip Waiting position fault !!!
- ……Skip Top fault !!!
- ……Negative fault !!!

- **Alarms, the user cannot accept are:**

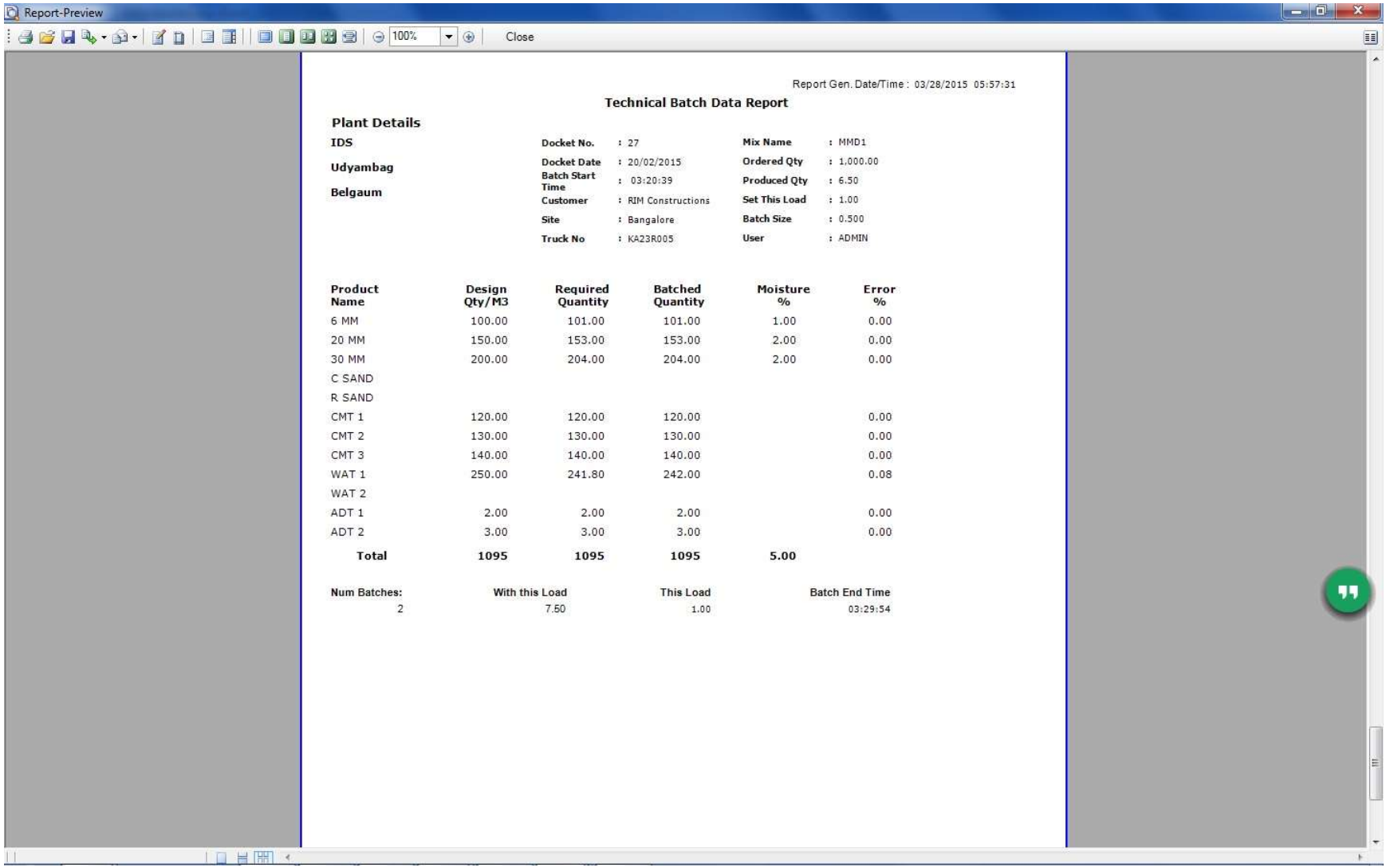
- ……Fill fault !!!
- Skip is not sliding fault !!!
- Skip is not Climbing fault !!!
- Mixer is Not running fault !!!
- ……Scale may overload fault !!!
- ……Scale Overloaded fault !!!
- ……Gate fault !!!

Reports :



- **The above screen enables us to generate reports for the selected date.**
- **The following reports shall be available :**
- **1. Production Cumulative**
- **2. Consumption Cumulative**
- **3. Batch Detailed**
- **4. Batch Cumulative**

Reports : Batch Report Cumulative



Report Gen. Date/Time : 03/28/2015 05:57:31

Technical Batch Data Report

Plant Details

IDS

Udyambag

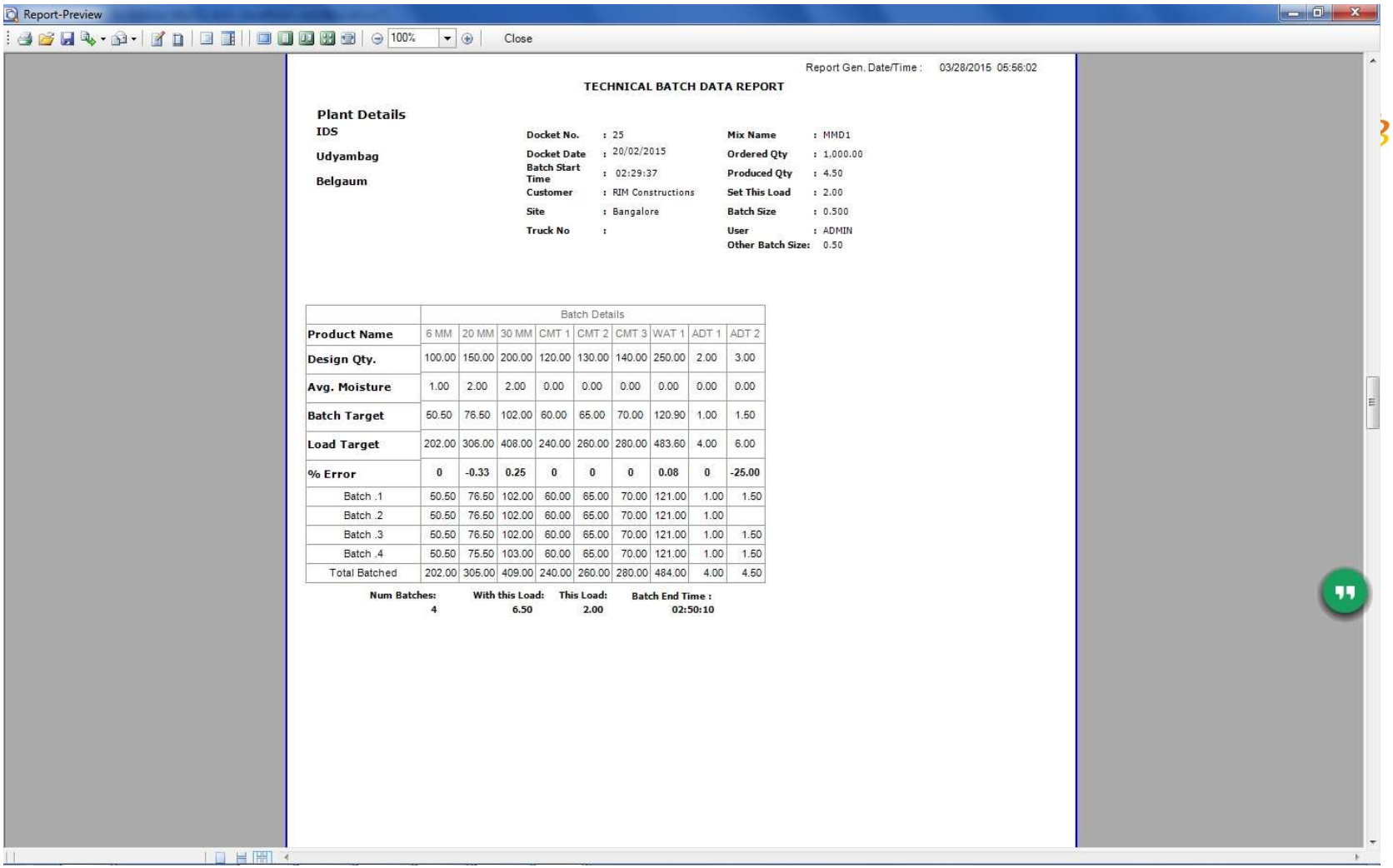
Belgaum

Docket No.	: 27	**Mix Name**	: MMD1
Docket Date	: 20/02/2015	**Ordered Qty**	: 1.000.00
Batch Start Time	: 03:20:39	**Produced Qty**	: 6.50
Customer	: RIM Constructions	**Set This Load**	: 1.00
Site	: Bangalore	**Batch Size**	: 0.500
Truck No	: KA23R005	**User**	: ADMIN

Product Name	Design Qty/M3	Required Quantity	Batched Quantity	Moisture %	Error %
6 MM	100.00	101.00	101.00	1.00	0.00
20 MM	150.00	153.00	153.00	2.00	0.00
30 MM	200.00	204.00	204.00	2.00	0.00
C SAND					
R SAND					
CMT 1	120.00	120.00	120.00		0.00
CMT 2	130.00	130.00	130.00		0.00
CMT 3	140.00	140.00	140.00		0.00
WAT 1	250.00	241.80	242.00		0.08
WAT 2					
ADT 1	2.00	2.00	2.00		0.00
ADT 2	3.00	3.00	3.00		0.00
Total	**1095**	**1095**	**1095**	**5.00**	

Num Batches:	With this Load	This Load	Batch End Time
2	7.50	1.00	03:29:54

Reports : Batch Report Detailed



Report Gen. Date/Time : 03/28/2015 05:56:02

TECHNICAL BATCH DATA REPORT

Plant Details

IDS

Udyambag

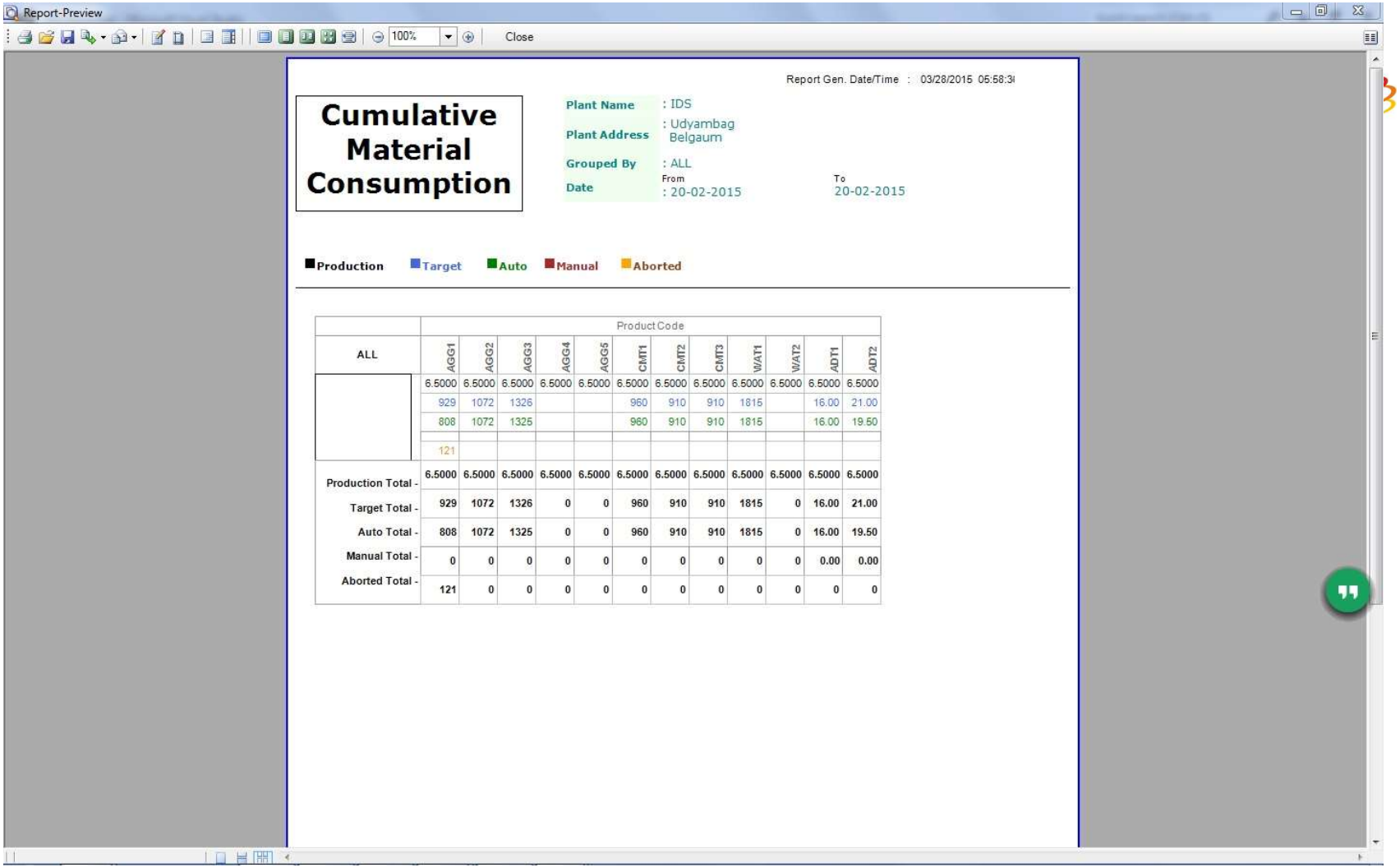
Belgaum

Docket No.	: 25	**Mix Name**	: MMD1
Docket Date	: 20/02/2015	**Ordered Qty**	: 1,000.00
Batch Start Time	: 02:29:37	**Produced Qty**	: 4.50
Customer	: RIM Constructions	**Set This Load**	: 2.00
Site	: Bangalore	**Batch Size**	: 0.500
Truck No	:	**User**	: ADMIN
		Other Batch Size:	0.50

	Batch Details								
Product Name	6 MM	20 MM	30 MM	CMT 1	CMT 2	CMT 3	WAT 1	ADT 1	ADT 2
Design Qty.	100.00	150.00	200.00	120.00	130.00	140.00	250.00	2.00	3.00
Avg. Moisture	1.00	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
Batch Target	50.50	76.50	102.00	60.00	65.00	70.00	120.90	1.00	1.50
Load Target	202.00	306.00	408.00	240.00	260.00	280.00	483.60	4.00	6.00
% Error	**0**	**-0.33**	**0.25**	**0**	**0**	**0**	**0.08**	**0**	**-25.00**
Batch .1	50.50	76.50	102.00	60.00	65.00	70.00	121.00	1.00	1.50
Batch .2	50.50	76.50	102.00	60.00	65.00	70.00	121.00	1.00	
Batch .3	50.50	76.50	102.00	60.00	65.00	70.00	121.00	1.00	1.50
Batch .4	50.50	75.50	103.00	60.00	65.00	70.00	121.00	1.00	1.50
Total Batched	202.00	305.00	409.00	240.00	260.00	280.00	484.00	4.00	4.50

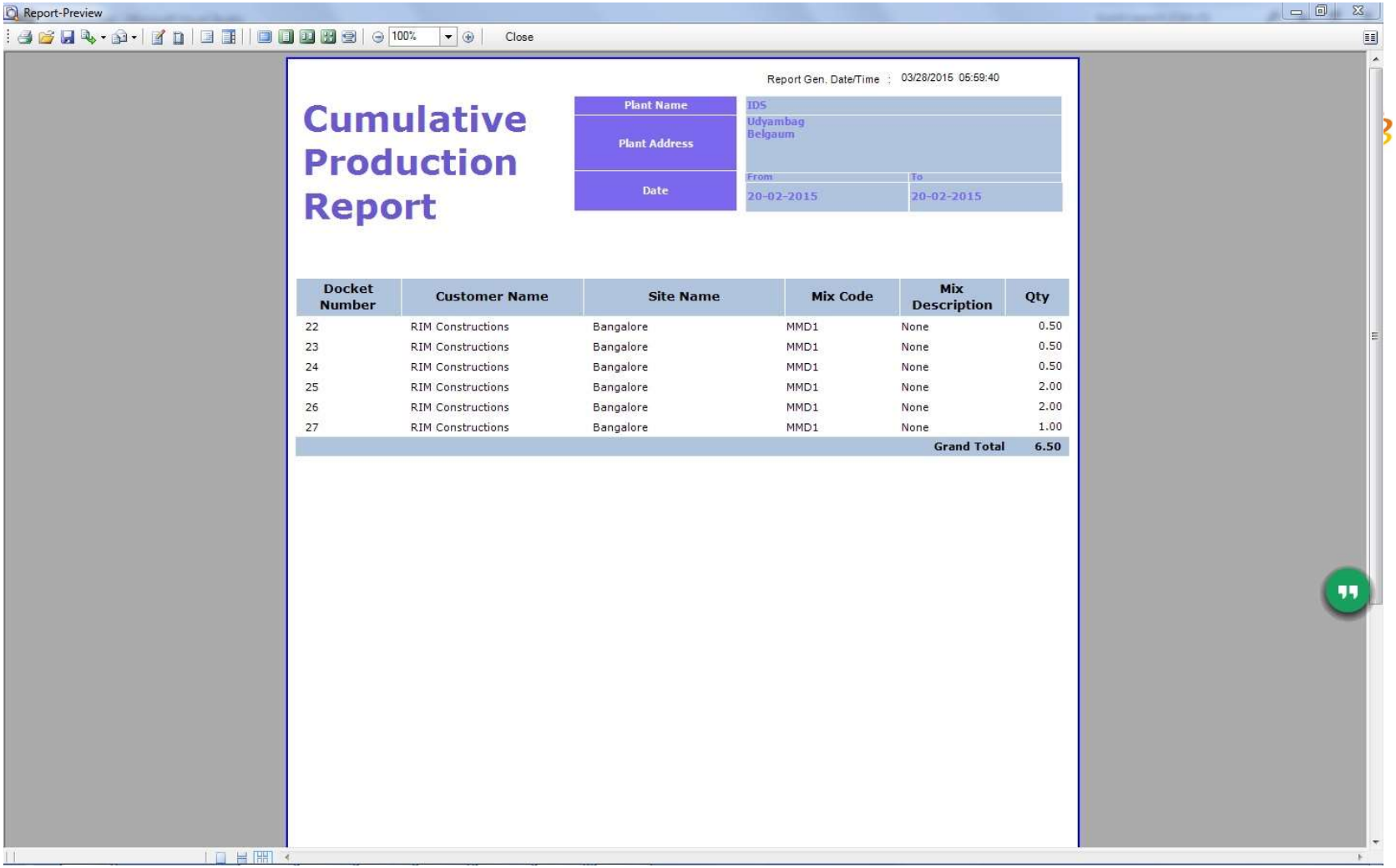
Num Batches:	**With this Load:**	**This Load:**	**Batch End Time :**
4	6.50	2.00	02:50:10

Reports : Consumption Report Detailed

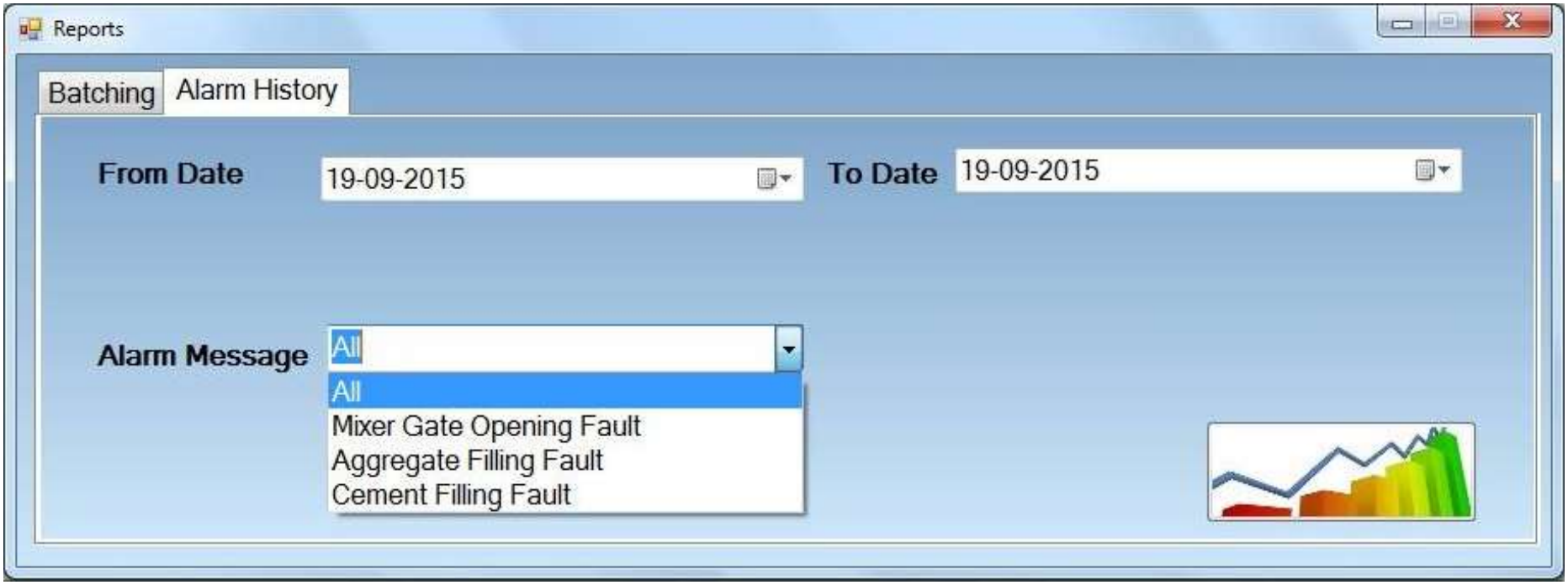


	Product Code											
ALL	AGG1	AGG2	AGG3	AGG4	AGG5	CMT1	CMT2	CMT3	WAT1	WAT2	ADT1	ADT2
	6.5000	6.5000	6.5000	6.5000	6.5000	6.5000	6.5000	6.5000	6.5000	6.5000	6.5000	6.5000
	929	1072	1326			960	910	910	1815		16.00	21.00
	808	1072	1325			960	910	910	1815		16.00	19.50
	121											
Production Total -	6.5000	6.5000	6.5000	6.5000	6.5000	6.5000	6.5000	6.5000	6.5000	6.5000	6.5000	6.5000
Target Total -	929	1072	1326	0	0	960	910	910	1815	0	16.00	21.00
Auto Total -	808	1072	1325	0	0	960	910	910	1815	0	16.00	19.50
Manual Total -	0	0	0	0	0	0	0	0	0	0	0.00	0.00
Aborted Total -	121	0	0	0	0	0	0	0	0	0	0	0

Reports : Cumulative Production Report



Docket Number	Customer Name	Site Name	Mix Code	Mix Description	Qty
22	RIM Constructions	Bangalore	MMD1	None	0.50
23	RIM Constructions	Bangalore	MMD1	None	0.50
24	RIM Constructions	Bangalore	MMD1	None	0.50
25	RIM Constructions	Bangalore	MMD1	None	2.00
26	RIM Constructions	Bangalore	MMD1	None	2.00
27	RIM Constructions	Bangalore	MMD1	None	1.00
				Grand Total	6.50



- **The above screen enables us to generate alarm history reports for the selected date.**
- **User can generate alarm history report with Alarm message filter**
- **After selecting the date range user can click the button to generate the report.**
- **After generating the following report should generate**

ALARM HISTORY

Plant Id	Ajax Flori
Plant Address	Nanekar Vadi Chakan, Pune

Date	10.19.2015

	From	**To**
Date	19-09-2015	19-09-2015

Filtered By	
Message	All

Alarm Id	Docket No	User	Event DateTime	Acknowledged Time	Accept Time	Normalise Time	Alarm Message
297	14	ADMIN	2015-09-19 02:34:09				Mixer Gate Opening Fault
298	14	ADMIN	2015-09-19 02:35:09				Mixer Gate Opening Fault
299	14	ADMIN	2015-09-19 02:36:09				Mixer Gate Opening Fault
300	14	ADMIN	2015-09-19 02:37:09			07/18/2015 17:46:39	Mixer Gate Opening Fault
301	2	ADMIN	2015-09-19 02:37:09				Aggregate Filling Fault
302	2	ADMIN	2015-09-19 02:37:10				Cement Filling Fault
303	2	ADMIN	2015-09-19 02:38:42			9-09-02015 PM 02:38:5	Aggregate Filling Fault
304	2	ADMIN	2015-09-19 02:38:42			9-09-02015 PM 02:38:5	Cement Filling Fault

PLC :

PLC: S7 200 smart ST60 series

Expands application capabilities through support for as many as seven S7 200 smart seriesExpansion I/O modules with 256 discrete I/O

- As many as six embedded 100 kHz high-speed counters (only on controllers with DC inputs)
- One serial ports with RS232, RS485, Modbus RTU protocol support.

30 KB words in user program memory with 10 KB words in user data memory)