OPTIMAX

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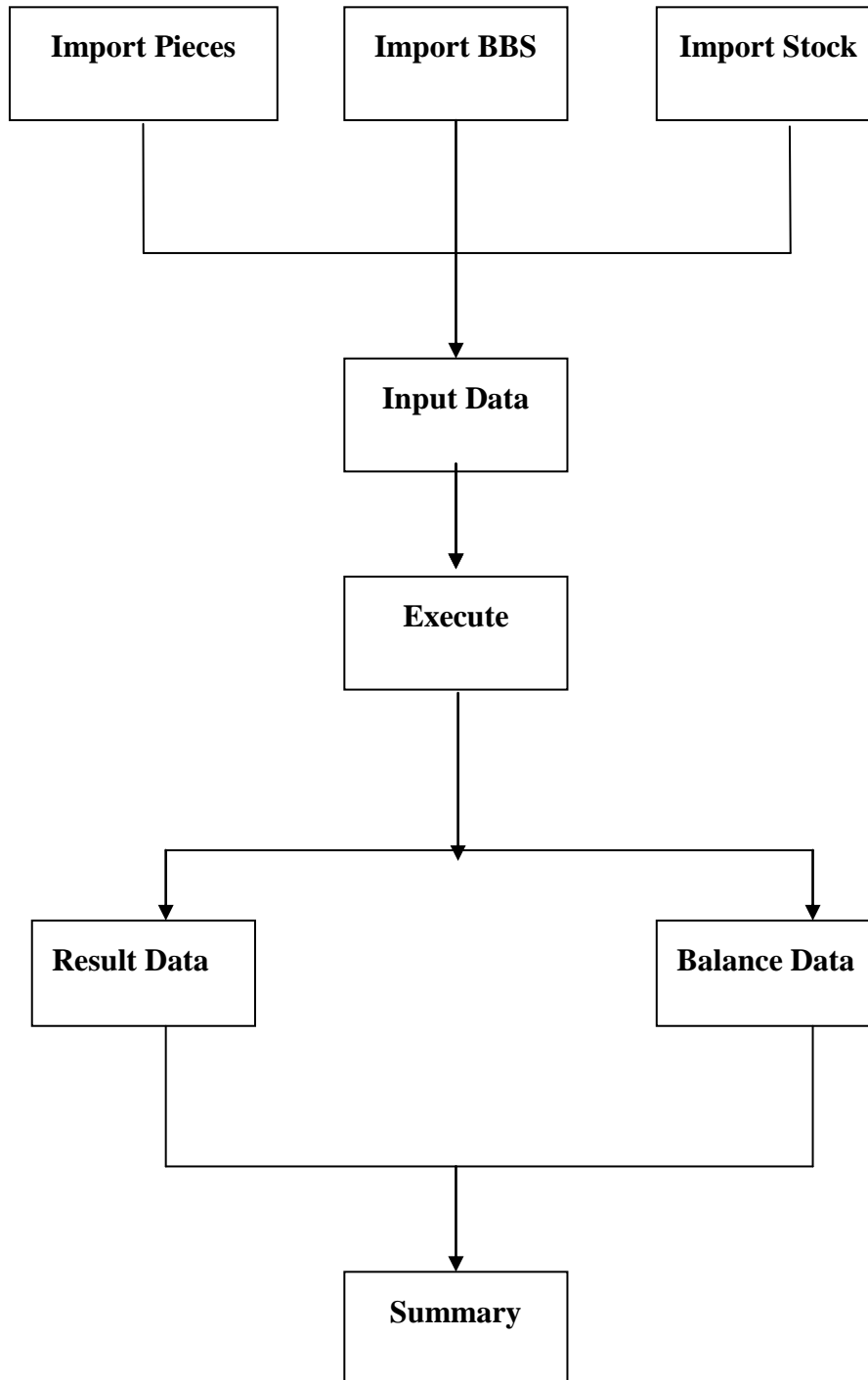| Title	Page No

INTRODUCTION

Optimax

'Optimax' is software which helps to minimize the wastage of reinforcement, while cutting at site. It aims at maximum utilization of a full length bar. By using the proper bar bending schedule, 'Optimax' makes the best combination of bars that can be cut from a given length with minimum wastage. A schedule is prepared with all types of bars counted and sorted. This schedule can be used to cut and bend bars to the required shape in a cut and bend factory and also at site.
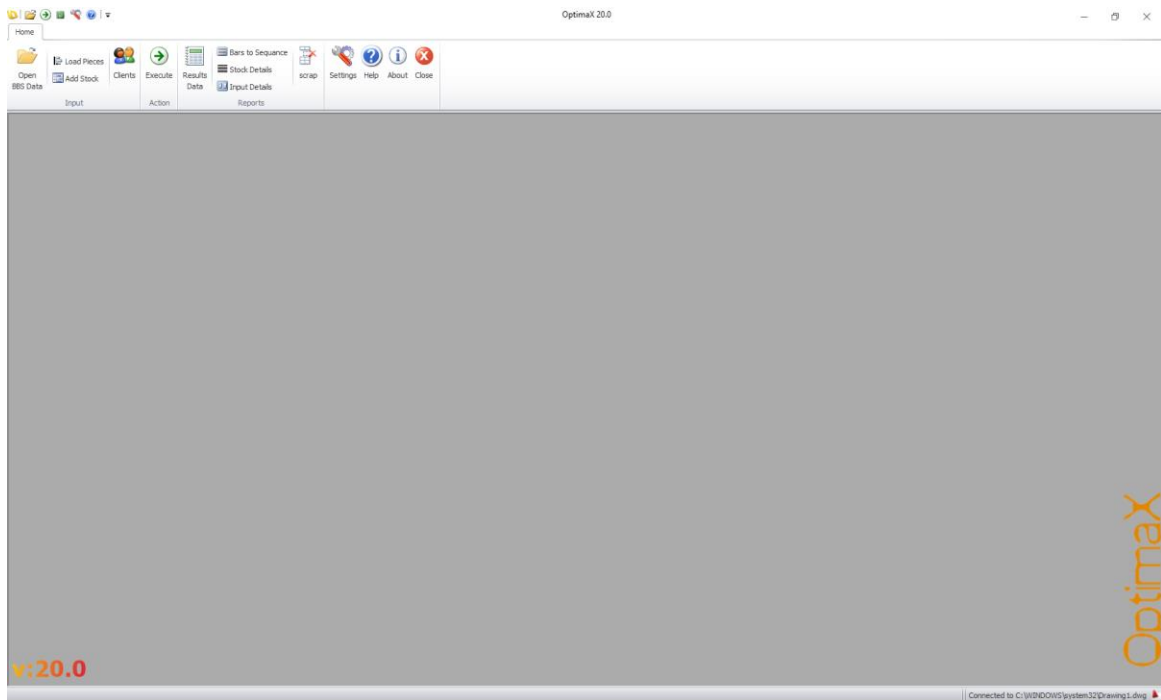
Advantages

- Avoids wastage completely.
- Better control on stock of steel actually required.
- Better quality control at site.
- Better estimation of steel.
- Saves time and reduces labour.

WORK FLOW

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┌─────────────────┐   ┌─────────────────┐   ┌─────────────────┐
│  Import Pieces  │   │   Import BBS    │   │  Import Stock   │
└────────┬────────┘   └────────┬────────┘   └────────┬────────┘
         └─────────────────────┼─────────────────────┘
                               ▼
                      ┌─────────────────┐
                      │   Input Data    │
                      └────────┬────────┘
                               ▼
                      ┌─────────────────┐
                      │     Execute     │
                      └────────┬────────┘
         ┌─────────────────────┴─────────────────────┐
         ▼                                           ▼
┌─────────────────┐                         ┌─────────────────┐
│   Result Data   │                         │  Balance Data   │
└────────┬────────┘                         └────────┬────────┘
         └─────────────────────┬─────────────────────┘
                               ▼
                      ┌─────────────────┐
                      │     Summary     │
                      └─────────────────┘
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The Optimax window will be displayed as shown below

This window is used to make the best combination of bars from the BBS data . Here Optimax searches for the best combination in the given bar length and the margin with minimum wastage.

Following are the instructions given to activate each keys:

1. Settings:

- Use 'File' menu > 'Settings' to set general settings.

Margin increment factor

This factor helps to reduce the wastage of bars while cutting the reinforcement.

License Type

Optimax can be purchased with three types of license modes.

Hardware Lock

Through a Hard Lock supplied with Optimax with a valid License period.

Via web.

You can purchase Optimax through web, after registering www.aadspro.com. Your license will be validated through the web by your user name and password.

License File

License is validated through a key supplied with Optimax.

Highlight color

Users can set the alternate color of the grid which displays the details.

After selecting all the required options click on ![save] .
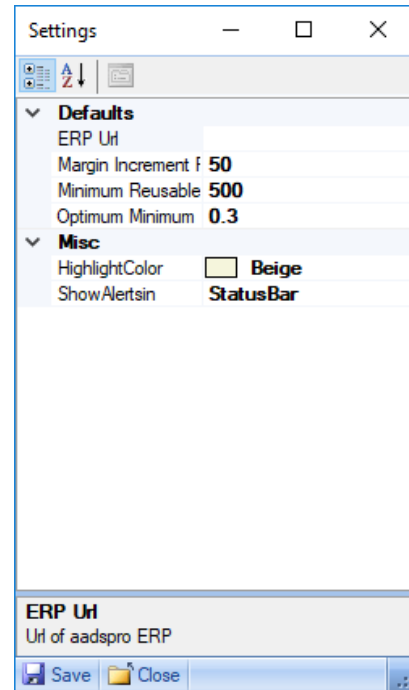
2. Client Details:

Here user can provide the details of client. Client detail will save automatically in the file. User can take the detail of the client saved in Optimax any time.

From the main menu you get the option for entering client detail
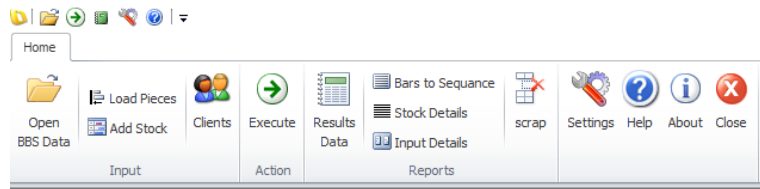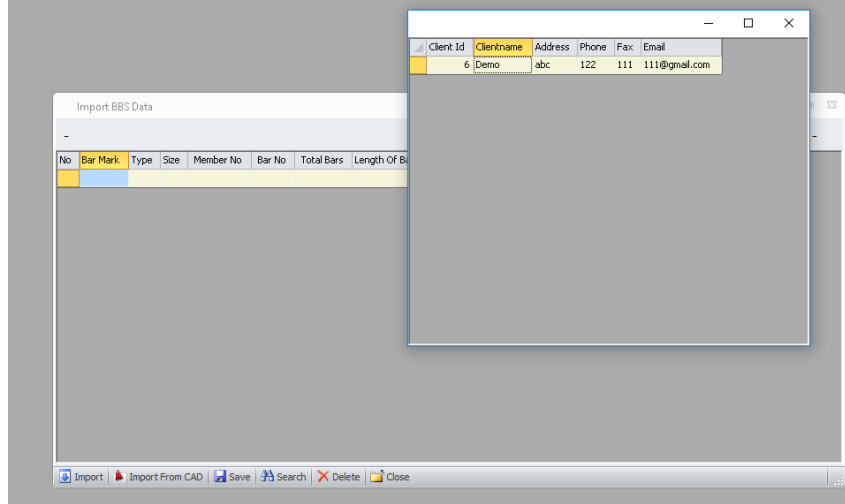

Client name, address, phone, mail id etc are to be entered. Then just save it and close.
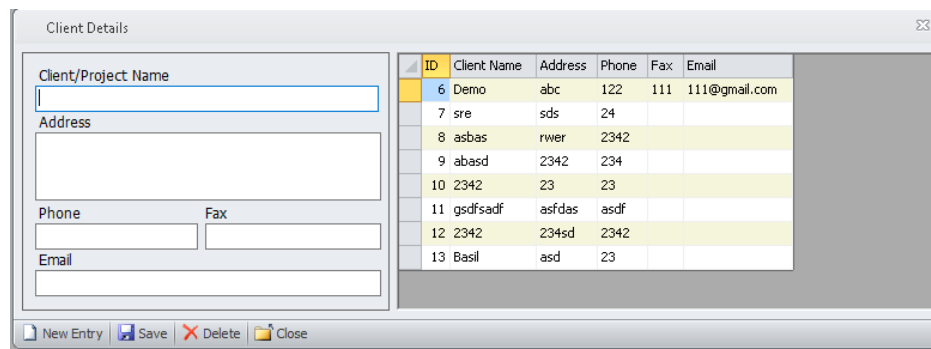
3. Import BBS:

This command helps the user to import the bar bending schedule from Microsoft excel or from AutoCAD to Optimax window.

- Use File Menu > 'Open BBS data
- Select the client name before start importing data.
- Import the required data from the BBS schedule, which includes the bar mark, bar length, shape codes etc.
- Select the file (Excel file) that contains the BBS details and import it.
- Enter the client details.
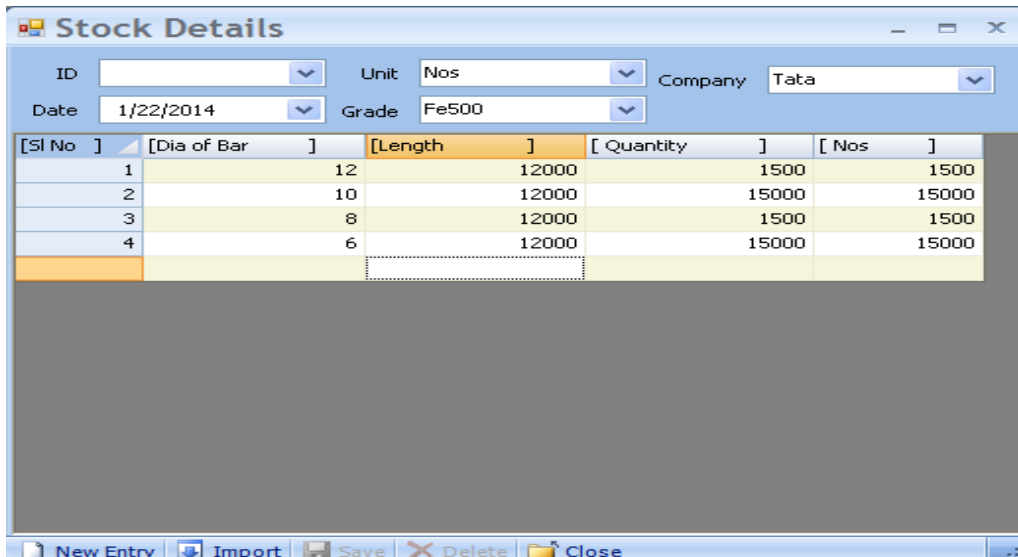- Then save this by clicking ![save] button.

Optimax |

4. Stock Details:

This window helps the user to enter the Stock details of reinforcement. Stock Details window displayed as below.

Use File Menu > 'Import Stock', to input the stock details such as length of the bar, diameter and the quantity of the bars available.

- 'New' Button helps to enter new stock details.

- Select the unit, for the quantity of available reinforcement.

    Nos - helps to enter the quantity of available reinforcement in numbers.

    Tonne - helps to enter the quantity of available reinforcement in tonnage.

- Enter the grade of steel & Company.

- Enter the stock details of reinforcement such as Dia of bar, Length of bar & quantity in Tonne or in number.

- Then save it by clicking [save] button.

5. Execute:

This command helps the user to cut the bars with minimum wastage by making the different combination of bars. In order to execute the process of cutting, follow the instructions below:

Select the client name to import the details of BBS. After that, execute window shows all the details that we have imported.

- Enter the Dia of bars, Grade of steel, company & Margin.

- Margin indicates the software to make the combination with given bar length having wastage up to this given margin. While entering the margin the user should keep in mind that the range of the value should start from zero to the required one. Eg. if the user gives a margin of '1250' and Bar Length of '12000 ' the software only search for the bars which can be exactly combined to length of 12000 like 3000 ,6000, 1750.
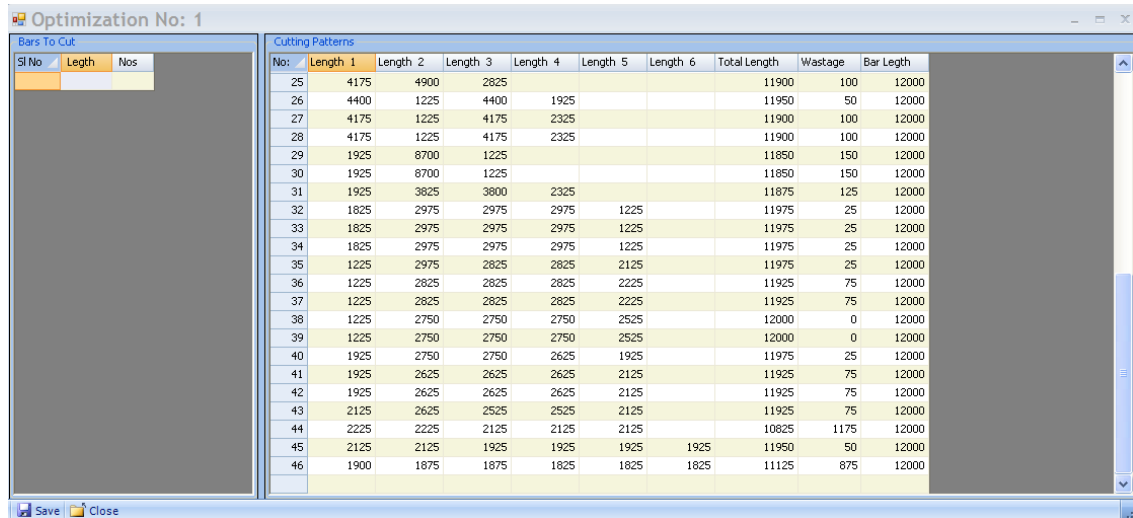

- Optimax gives three options to execute the cutting process of bars:

  a) **Default :**

System automatically gives the combination of bars by taking the available bars in stock. At the time of executing this, the bar length will be taken from the stock having minimum length first. Once the minimum stock is finished the software will automatically go for the next length and so on

After that execute it by pressing at ![save] button and then total length of the bar used, total wastage, bars to cut can be shown as:

No:	Length 1	Length 2	Length 3	Length 4	Length 5	Length 6	Total Length	Wastage	Bar Legth
25	4175	4900	2825				11900	100	12000
26	4400	1225	4400	1925			11950	50	12000
27	4175	1225	4175	2325			11900	100	12000
28	4175	1225	4175	2325			11900	100	12000
29	1925	8700	1225				11850	150	12000
30	1925	8700	1225				11850	150	12000
31	1925	3825	3800	2325			11875	125	12000
32	1825	2975	2975	2975	1225		11975	25	12000
33	1825	2975	2975	2975	1225		11975	25	12000
34	1825	2975	2975	2975	1225		11975	25	12000
35	1225	2975	2825	2825	2125		11975	25	12000
36	1225	2825	2825	2825	2225		11925	75	12000
37	1225	2825	2825	2825	2225		11925	75	12000
38	1225	2750	2750	2750	2525		12000	0	12000
39	1225	2750	2750	2750	2525		12000	0	12000
40	1925	2750	2750	2625	1925		11975	25	12000
41	1925	2625	2625	2625	2125		11925	75	12000
42	1925	2625	2625	2625	2125		11925	75	12000
43	2125	2625	2525	2525	2125		11925	75	12000
44	2225	2225	2125	2125	2125		10825	1175	12000
45	2125	2125	1925	1925	1925	1925	11950	50	12000
46	1900	1875	1875	1825	1825	1825	11125	875	12000

'Cutting Patterns' plate: User can view the combination of bars, the total length and total wastage of the bars.

'Bars to Cut' plate: displays the bars that cannot be cut according to the given bar length and margin.

b) **Try for Best Combination:**

This option helps the user to take the best combination of bars to cut with minimum wastage. System gives the number of combination of bars; user can select the best combination from this. Execute it by pressing ![save] button. Now the software displays the combination windows are as follows.

Here we can see that optimization 2: is the best combination having no wastage and all bars are used in cutting process.

c) **Use one length at time:**

Here system makes the combination of bars by using bars having the same length as shown below:

Check all:

This option used for selecting the length of available bars from the stock which is used for cutting process.

Select Random length:

Optimax gives the combination of bars by taking bars in random order.

6. Output Details:

This shows the summary of the results after the execution process. Summary window is as shown below:

- **Result plate** gives the details such as the number of bars & pieces used wastage & percentage of wastage.

- **Result Details** gives advanced details like total length of bars, Dia of bars etc.

- **Grouped Result Pattern** will display the grouped list of combinations in the current execution.

- The data in the right side displays the bars to be cut.

- These data can be exported **to Microsoft Excel** and **Text file.**
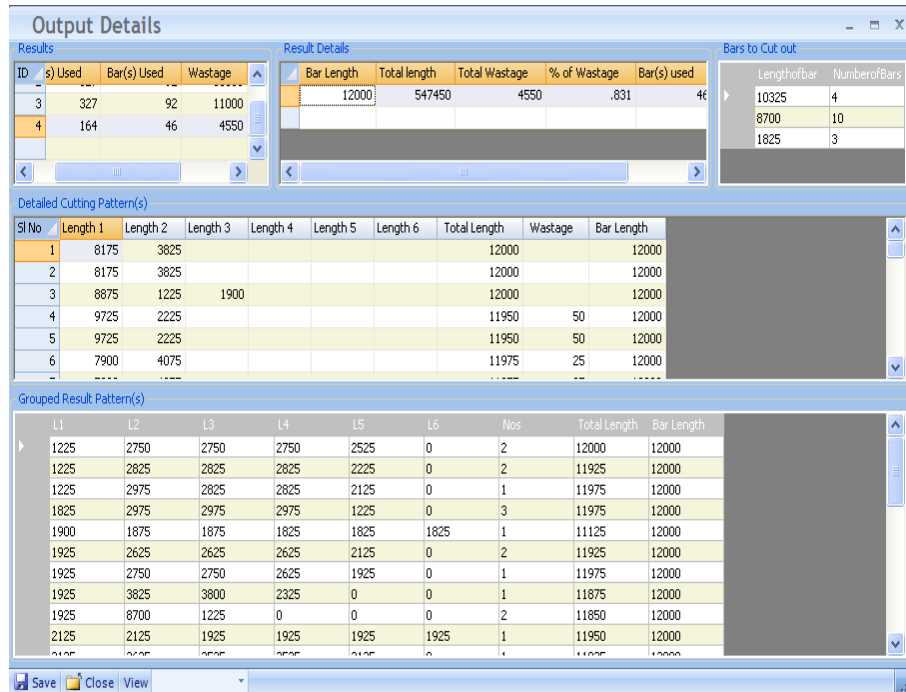
7. Stock Details :

Stock Details shows the current details of stock after executing the cutting process, as shown below:
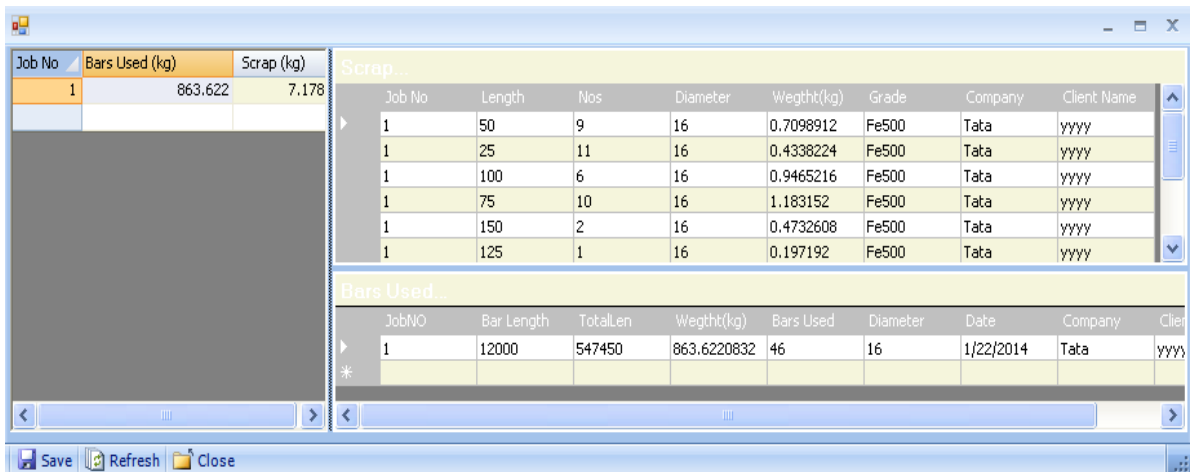
8. Scrap Details:

This command displays the details of scrap bars, as shown below: