



STAB Manual

Version 2.0

Simple
Tool for
Aggregate
Blending

Developed by:

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Salient Features



Blend upto 5 Aggregate Stockpiles



Filter Solutions by fixing one or more Stockpiles



Get Graphical Representation of chosen solutions

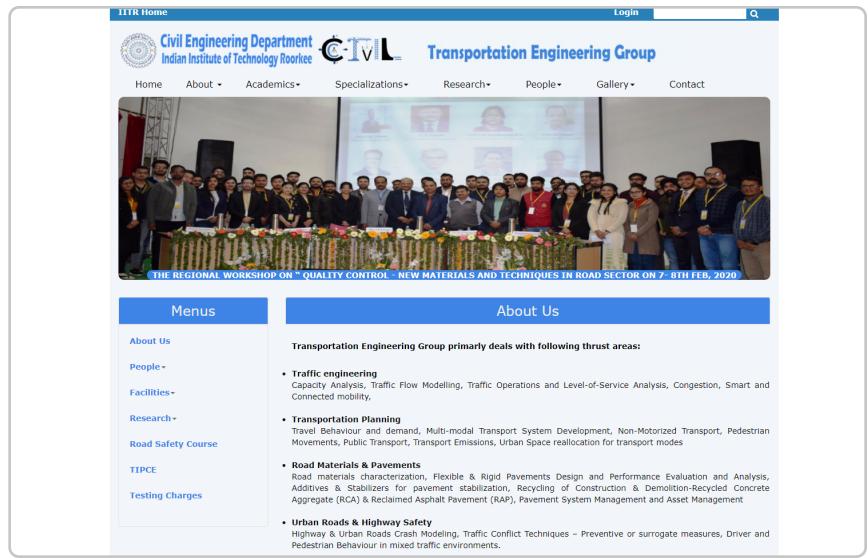


Save Report as .csv file.



1. Download & Installation

- Download the **Stab_version_2.zip** file from civil.iitr.ac.in/TEG/About



civil.iitr.ac.in/TEG/About

The screenshot shows the IITR Home page with the Civil Engineering Department and Transportation Engineering Group logos. The menu includes Home, About, Academics, Specializations, Research, People, Gallery, and Contact. A banner at the top features a group photo and the text 'THE REGIONAL WORKSHOP ON "QUALITY CONTROL - NEW MATERIALS AND TECHNIQUES IN ROAD SECTOR ON 7-8TH FEB, 2020'.

Menus

- About Us
- People
- Facilities
- Research
- Road Safety Course
- TIPECE
- Testing Charges

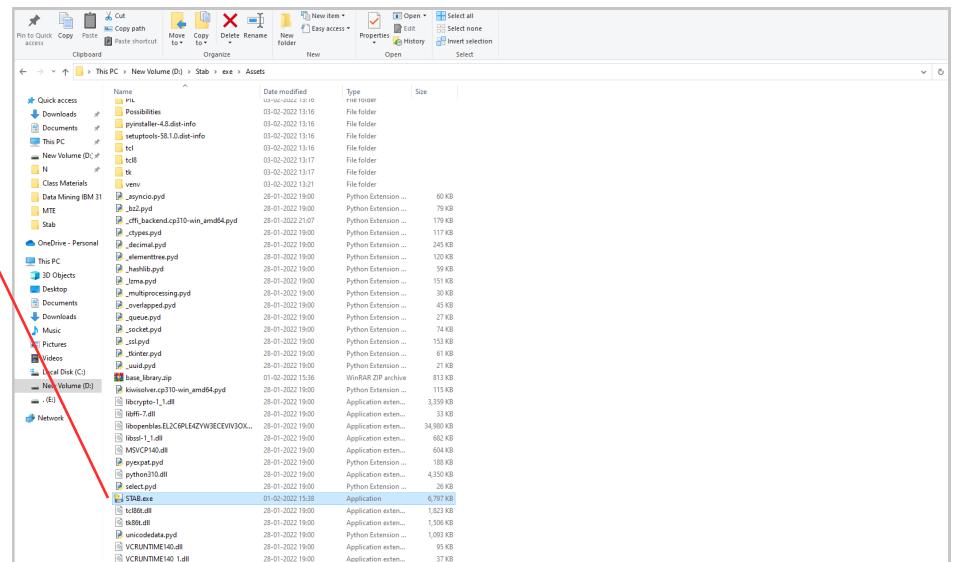
About Us

Transportation Engineering Group primarily deals with following thrust areas:

- Traffic engineering**: Capacity Analysis, Traffic Flow Modelling, Traffic Operations and Level-of-Service Analysis, Congestion, Smart and Connected mobility.
- Transportation Planning**: Travel Behaviour and demand, Multi-modal Transport, System Development, Non-Motorized Transport, Pedestrian Movements, Public Transport, Transport Emissions, Urban Space reallocation for transport modes.
- Road Materials & Pavements**: Road materials characterization, Flexible & Rigid Pavements Design and Performance Evaluation and Analysis, Additives & Stabilizers for pavement stabilization, Recycling of Construction & Demolition-Recycled Concrete Aggregate (RCA) & Reclaimed Asphalt Pavement (RAP), Pavement System Management and Asset Management
- Urban Roads & Highway Safety**: Highway & Urban Roads Crash Modeling, Traffic Conflict Techniques – Preventive or surrogate measures, Driver and Pedestrian Behaviour in mixed traffic environments.

- Extract the .zip file to a folder. In the folder, run **STAB_version_2.exe** file.

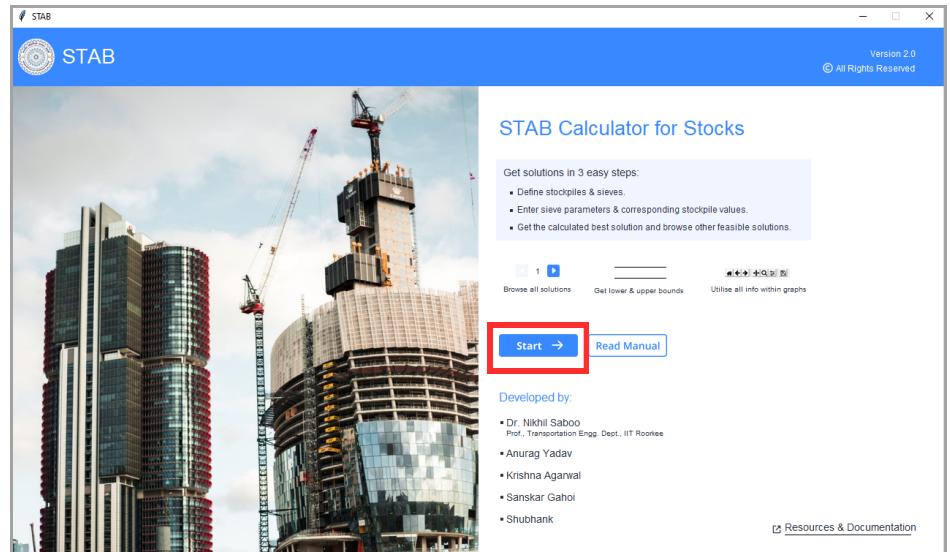
No installation required.



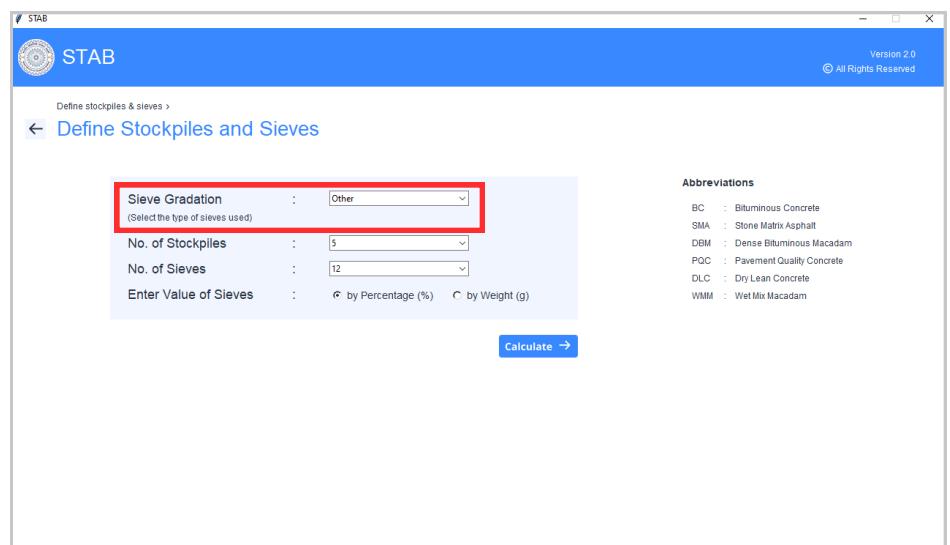


2. Using STAB

- Click **Start** to proceed



- Select the **Sieve Gradation** from the dropdown menu if you have one of the listed standard gradations, if not choose “**Other**”





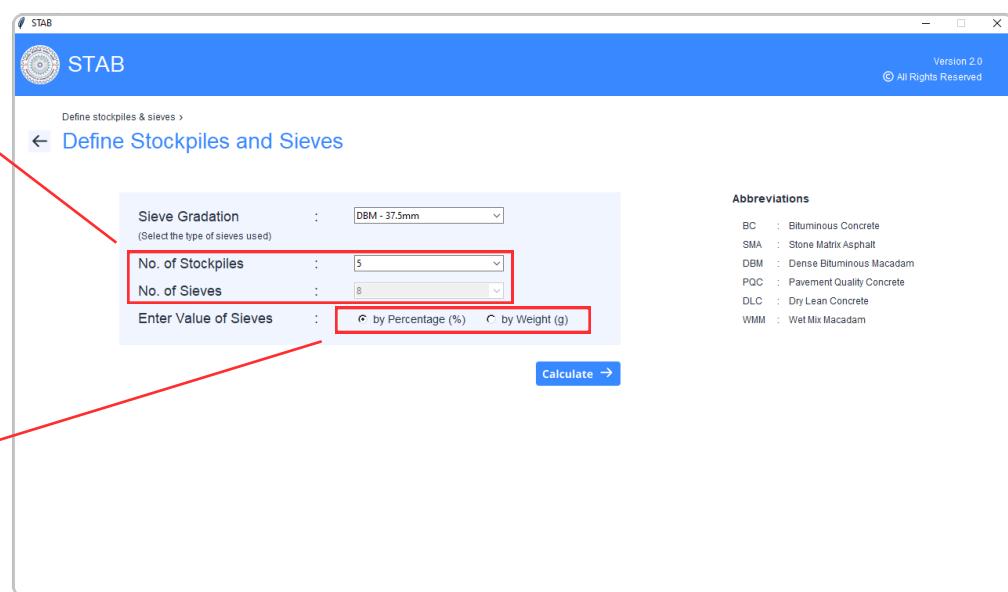
2. Using STAB

- Select the **No. of Stockpiles & No. of Sieves**



Sieve Gradation : Other
Selected the type of sieves used
No. of Stockpiles : 2
No. of Sieves : 1
Enter Value of Sieves : by Percentage (%) by Weight (g)
Calculate →

- If you have any standard Sieve gradation selected, then the no. of stockpiles and no. of sieves will be fixed accordingly



Sieve Gradation : DBM - 37.5mm
(Select the type of sieves used)
No. of Stockpiles : 5
No. of Sieves : 8
Enter Value of Sieves : by Percentage (%) by Weight (g)
Calculate →

Abbreviations
BC : Bituminous Concrete
SMA : Stone Matrix Asphalt
DBM : Dense Bituminous Macadam
PQC : Pavement Quality Concrete
DLC : Dry Lean Concrete
WMM : Wet Mix Macadam

- Select the data type to be entered in the future steps:

Note: If you choose “**by Weight**” here, you will see an option to calculate **%passing** after you enter all the weight values in the next step.

Get % Passing

- And when you are good to go, click on continue

Continue →



2. Using STAB

- On the next page, Enter the values of % passing/wt. retained corresponding to each sieve size:

STAB

Define stockpiles & sieves > Enter values >

← Enter Values

Sieve	Size(mm)	Lower Bound	Upper Bound	Stockpile 1	Stockpile 2	Stockpile 3	Stockpile 4	Stockpile 5
Sieve1	45	100	100					
Sieve2	37.5	95	100					
Sieve3	26.5	63	93					
Sieve4	13.2	55	75					
Sieve5	4.75	38	54					
Sieve6	2.36	28	42					
Sieve7	0.3	7	21					
Sieve8	0.075	2	8					

Calculate →

Reset

- If you had selected "Other" as the sieve gradation, you also need to enter the lower and upper bounds for all the sieves in the selected gradation:

STAB

Define stockpiles & sieves > Enter values >

← Enter Values

Sieve	Lower Bound	Upper Bound	Stockpile 1	Stockpile 2	Stockpile 3	Stockpile 4	Stockpile 5
Sieve1							
Sieve2							
Sieve3							
Sieve4							
Sieve5							
Sieve6							
Sieve7							
Sieve8							
Sieve9							
Sieve10							
Sieve11							
Sieve12							

Calculate →

Reset

- And when you have entered all the values, click calculate:

Calculate →



2. Using STAB

- On the Results window, you get the no. of possible solutions to the given values, the detailed values & graph of the best solution & other options.

Properties of Stockpile (in % passing) **best solution***

Use these options to analyze the **graph** by:

- Pan
- Zoom
- Scale filter
- Save graph

Total number of possible integral solutions with the given values

Save all possible solutions as a .csv file to view them in Excel.

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Define stockpiles & sieves > Enter values > Result < Result

No. of possible solutions: 915 **Save Report**

Best solution

Values

Stockpiles	Percentage(%)
Stockpile 1	37
Stockpile 2	6
Stockpile 3	52
Stockpile 4	5

Filter Solutions

Graph

Lower Limit Upper Limit Solution

Percentage Passing (%)

Sieve Number

Note:
Best solution:
Best solution is defined by minimizing the root mean square error from the mid point gradation.
Mid point gradation is the mean of upper bound and lower bound values.
Save report feature:
Save solution as a csv file.
Filter solutions feature:
Get alternative solutions to this search by fixing values of particular stockpiles.
You can also see the graph plotted for any particular solution by entering values for all stockpiles.

Find alternate solutions with constraints on one or more stockpiles.

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Define stockpiles & sieves > Enter values > Result > Fix stockpiles < Fix Stockpile(s)

No. of possible solutions: 915

Best solution

Values

Stockpiles	Percentage(%)
Stockpile 1	40
Stockpile 2	
Stockpile 3	
Stockpile 4	2

Filter by Fixing

Graph

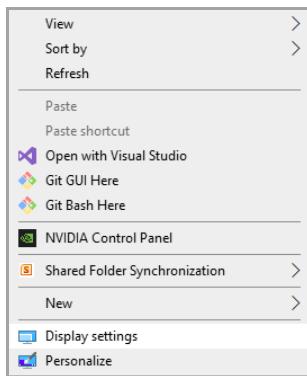
Best solution:
Best solution is defined by minimizing the root mean square error from the mid point gradation.
Mid point gradation is the mean of upper bound and lower bound values.
Save report feature:
Save solution as a csv file.
Filter solutions feature:
Get alternative solutions to this search by fixing values of particular stockpiles.
You can also see the graph plotted for any particular solution by entering values for all stockpiles.



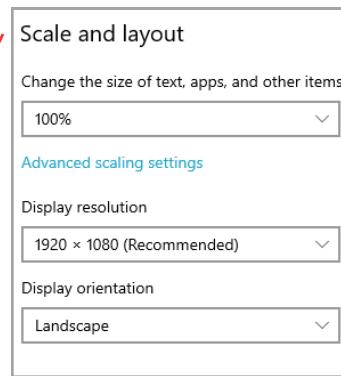
3. Help & Feedback

- In case the STAB window covers up all of your screen and/or STAB window appears to be bigger than the screen area, kindly change the display settings on your device to increase resolution.

1. Right Click

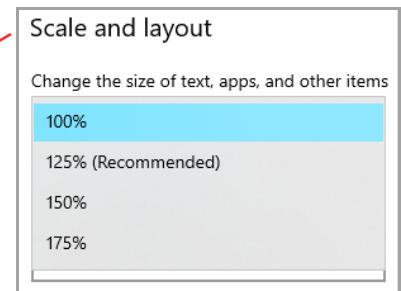


2. Go to Display settings



3. Under Scale & Layout

4. Reduce the zoom size to 100%



- For any further queries kindly contact:

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