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Restraint Length Calculator V 1.0

The Restraint Length Calculator is a specifically designed calculator application. This web based system easily allows the user to input application parameters to retrieve quick and accurate restrained length values.

The GUI is divided into seven categories: the Top Menu Bar, Project Name, Iconic Bar, Site Location, Calculation Parameters Area, Calculated Restraint Length and finally the Calculation History. The following pages will look at each one of these categories individually.

1. Top Menu Bar

REPORT :: REFERENCES :: PRINT (Current Page) :: PRINT (Report) :: HELP

The Top Menu Bar is located at the top of the calculator.

REPORT – Opens a Report page that shows all the Item Calculations for a particular Project. Initially this is inactive. To make it active the user needs to Create/Open a Project.

REFERENCES – References for Restraint Length Calculator.

PRINT (Current Page) – Print existing project page.

PRINT (Report) – Print existing project page.

HELP – It contains a User Manual that guides the user to use the Calculator.

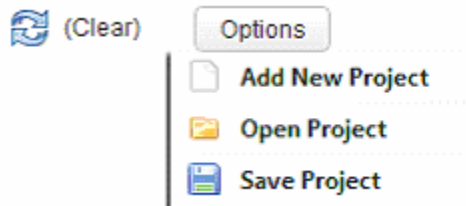
2. Project Name

Project Name:

The Project Name text box allows the user to name the particular Project being worked on.

3. Iconic Bar

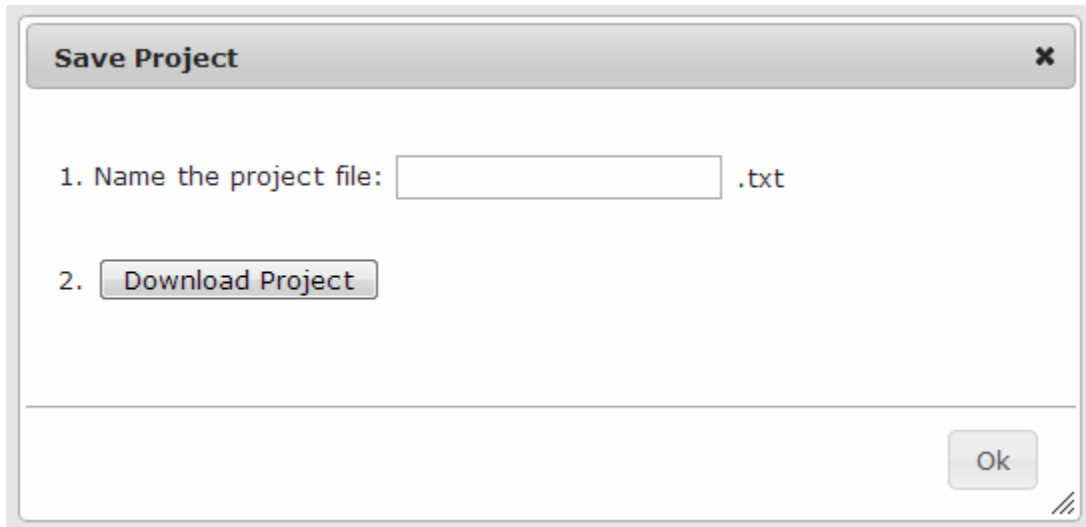
The Iconic Menu Bar is directly below the Project Name. It is a short cut to the functions that includes Add New Item, Clear, Add New Project, Open Project and Save Project.



Clear – It clears all the Calculation Parameters that has been entered.

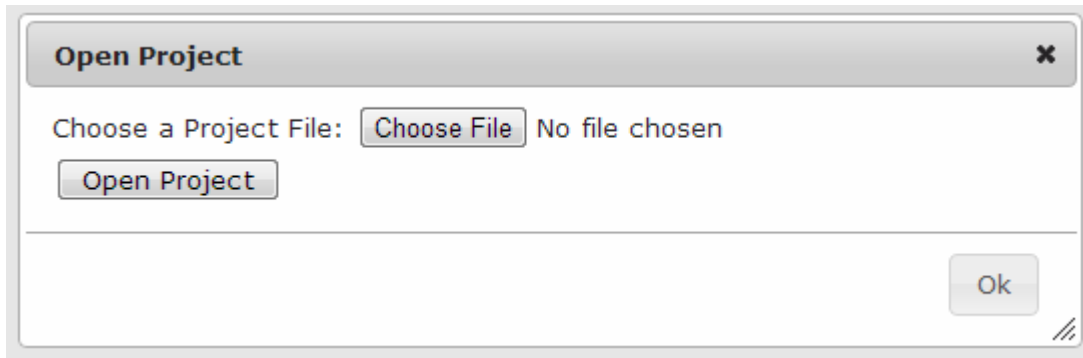
Add New Project – Create a new project file.

Save Project – Save current project file.



When you select the 'Save Project' option, you will be able to see a popup message (like the one above). In order to save the project file it is mandatory to fill in the 'Name of the project file' info. Then click the 'Download Project' button to down load the project file (It is .txt file).

Open Project – Open an existing project file.



When you select the 'Open Project' option, you will be able to see a popup message (like the one above). In order to open an existing project, choose the project file (a .txt file that has been saved before using 'Save Project' option) and click the 'Open Project' button.

4. Site Location

Site Location:

The Site Location text box allows the user to name each fitting item. This is helpful when several fittings are used in one project.

5. Calculation Parameters

The Calculation Parameters are the most essential part of the calculator. In order to get the Restraint Length Values the user needs to define the parameters. Once the parameters are defined the calculator calculates the restraint value and displays it on the Calculated Restraint Length area.

The fitting types available are Horizontal Bend, Vertical Offset, Tee, Reducer, and Dead End.

To perform the calculation operation on each fittings there are six common parameters needed: Pipe Type, Size, Factor of Safety, Soil Type, Trench Type, Depth of Bury and Test Pressure.

Apart from the common parameters that are mentioned above, each fitting type has its own set of specially required parameters.

Site Location:	<input type="text"/>
Pipe Type:	- <input type="text"/>
Size:	- <input type="text"/>
Factor of Safety:	- <input type="text"/>
Soil Type:	- <input type="text"/>
Trench Type:	- <input type="text"/>
Depth of Bury:	- <input type="text"/>
Test Pressure:	- <input type="text"/>
Fitting Type:	- <input type="text"/>

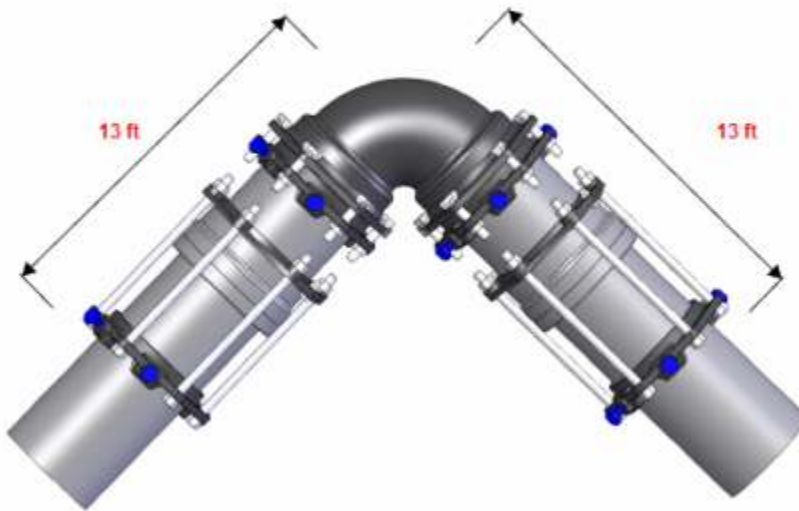
5.1 Fitting Specific Calculation Parameters

- **HORIZONTAL BEND**
 - Bend Angle
- **VERTICAL OFFSET**
 - Bend Angle
 - Low Side Depth
- **TEE**
 - Branch Size
 - Length Along Run
- **REDUCER**
 - Large Size
 - Small Size
- **DEAD END**

6. Calculated Restraint Length

The Calculated Restraint Length Value obtained by the calculator is the length in feet. When the calculator obtains the restrained length, it will inform the user which side of the line needs to be restrained with the help of a graphic.

13 ft = Length to be restrained on each side of bend



7. Calculation History

It contains the list of all calculated fitting items for the current Project. This is helpful for the user when he performs several calculations in one project.

Site Location	Pipe Type	Fitting Type	View	Delete
1 Site2	Ductile Iron	Horizontal Bend		
2 Site1	Ductile Iron	Reducer		
3 Site1	Ductile Iron	Dead End		
4 Site1	Ductile Iron	Horizontal Bend		

- At any point of time during the calculation this button helps the user to view the calculated item along with calculation parameters and graphics.

✕ - At any point of time during the calculation this button helps the user to delete a particular calculated item from the project.

Calculation History will be refreshed automatically during the calculation process.