

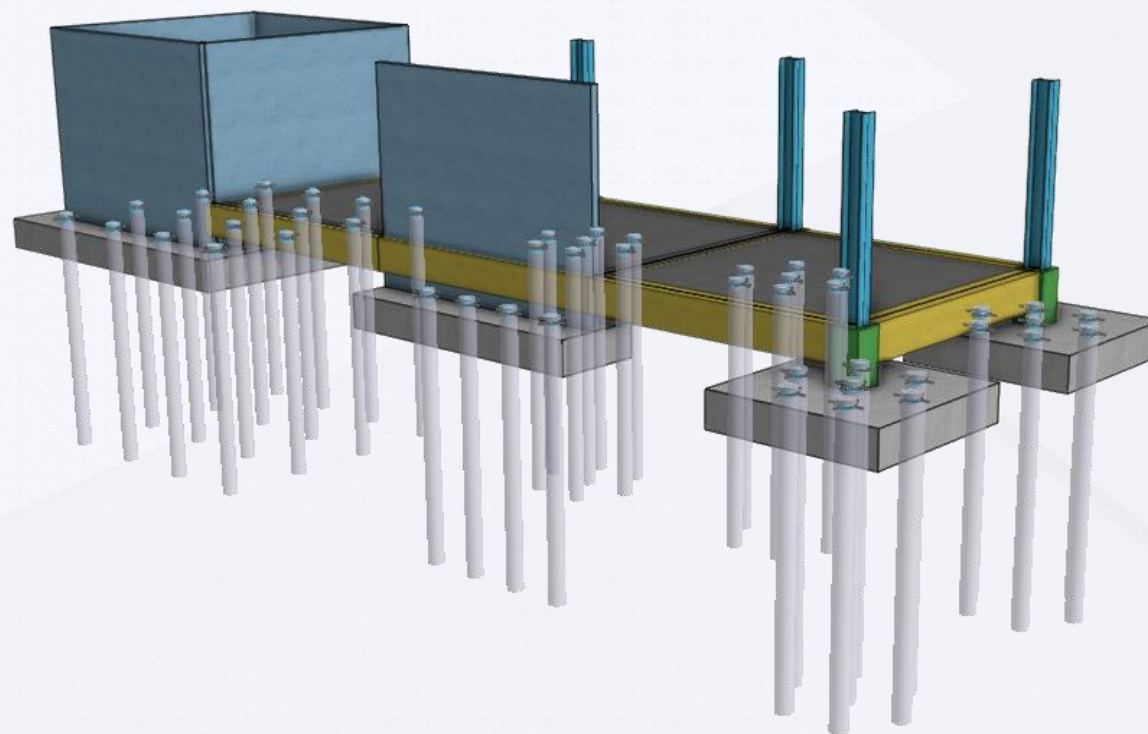
Footing Design

HOW TO DESIGN ISOLATED FOOTING WITH RIGID METHOD

User's Guide

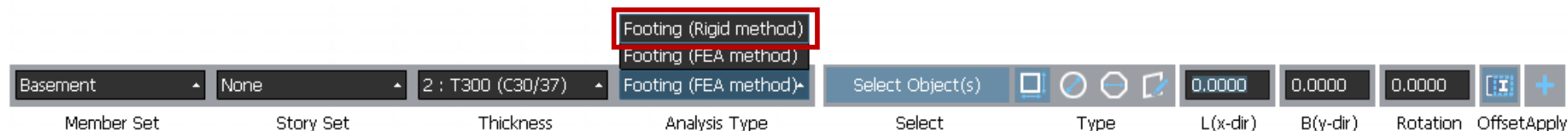
Footing Design - 04

How to design isolated footing with rigid method



<i>midas nGen version</i>	<i>nGen 2021 (v1.1)</i>
<i>Revision Date</i>	<i>20, Feb., 2021</i>

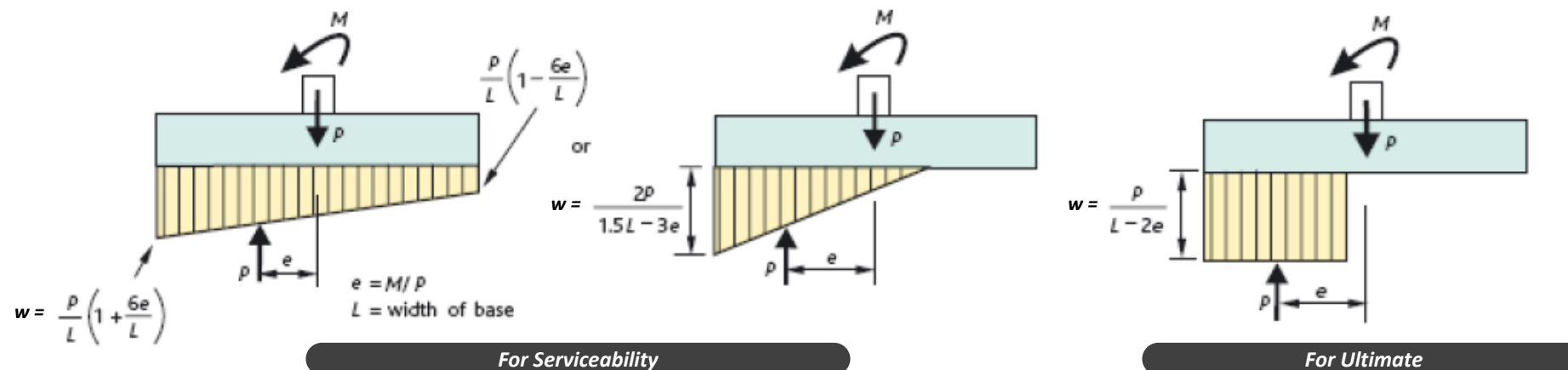
How to Design Isolated Footing with Rigid method



An isolated mat footing transfers the loads from a single column to the supporting soil. The size of the footing is determined by the allowable soil bearing pressure. The footing is designed for flexure, punching or two-way shear and one-way shear. The depth of the footing is generally governed by punching shear.

[Calculation of Pressure Distributions by each status]

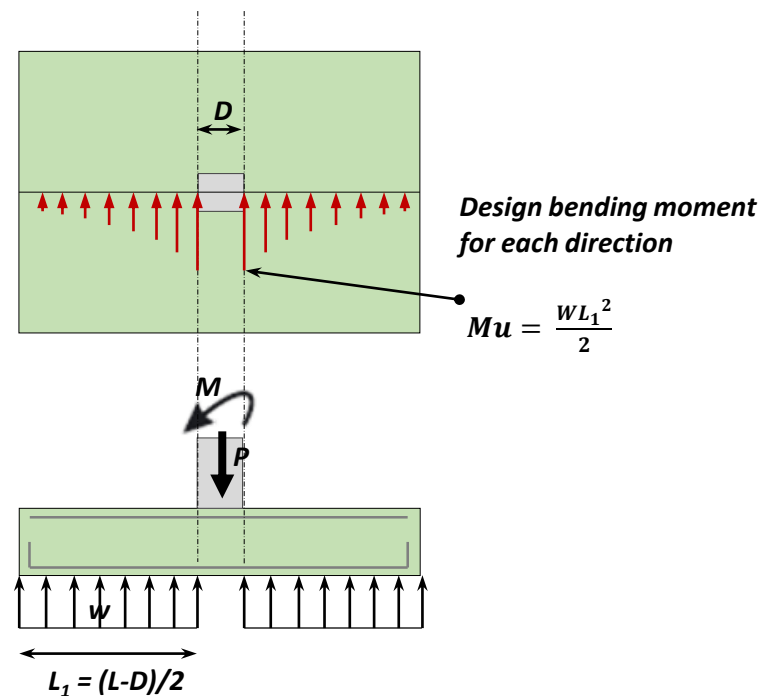
The calculation of soil pressure in serviceability state and ultimate state as below.



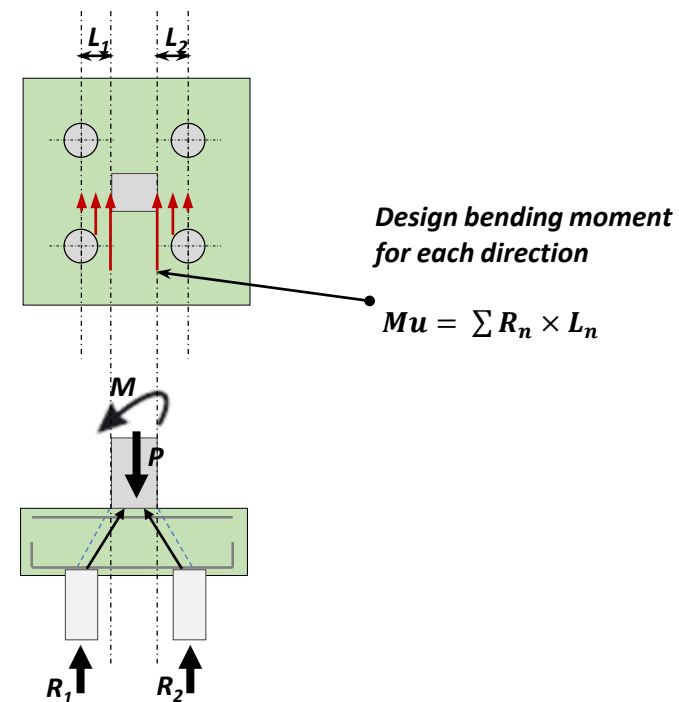
How to calculate a design bending moment

The value of design bending moment at the column face is applied to the calculation.

Isolated Footing

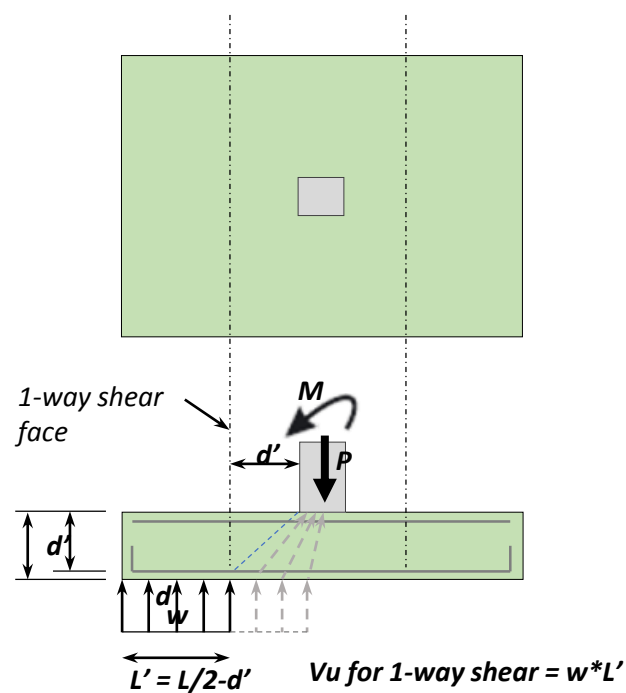


Isolated Footing with Piles

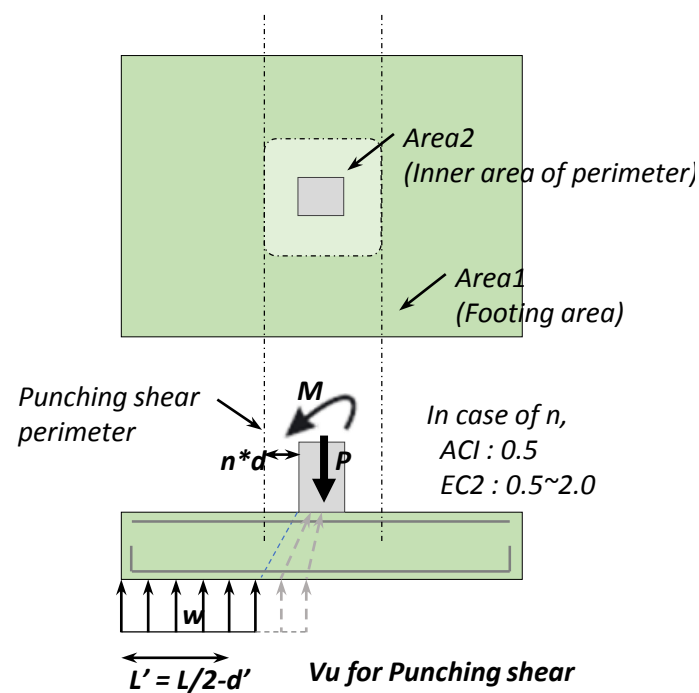


How to calculate a design shear force

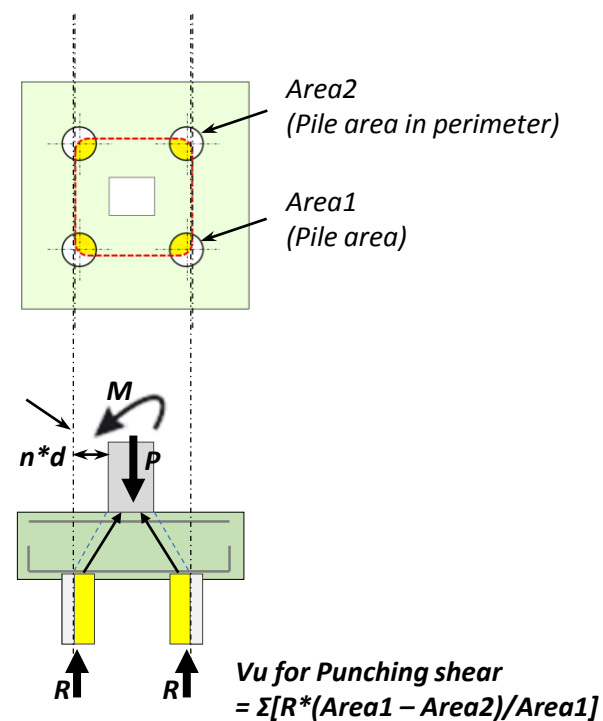
The soil pressure inside the shear face or shear perimeter is not considered in the design shear force calculation, assuming the load is transferred to the column.



1-way shear force



Punching shear force



Supporting Design Items for Rigid Method

Ultimate Status	<i>Flexural design</i>		<i>All</i>
	<i>1-way shear design</i>		<i>All</i>
	<i>Punching shear design</i>		<i>All</i>
Serviceability Status	<i>Stress limitation check</i>		<i>Only Eurocode-2</i>
	<i>Crack width check</i>		<i>Only Eurocode-2</i>
	<i>Linear creep check</i>		<i>Only Eurocode-2</i>
Stability	<i>Sliding</i>		<i>All</i>
	<i>Bearing capacity of Soil</i>		<i>All</i>
	<i>Bearing capacity of Pile</i>		<i>All</i>
	<i>Overturning</i>		<i>All</i>
	<i>Sliding</i>		<i>All</i>

Thank you