

INTERNAL SUPPORTS IN 2D SVSLOPE MODELS

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Introduction

Hi, my name is Murray Fredlund. Welcome to the session Internal Supports in SVSlope 2D Models within the *SVOffice 2009 Next Generation* geotechnical software suite. The purpose of this session is to show the user how to apply supports in a slope stability model.

Defining Supports

In the example shown (**Slopes_Group_1>VS_15_Circular**) we will be applying supports to this model. To define supports they are located under the **Model** menu, under the **Support** item and then you have **Types of Supports** and **Geometry of supports**. First we are going to define a type of support. This is the support manager. Any number of support types can be created and applied to different supports in the model. You'll first notice there are a lot of different types of supports that can be applied in the numerical model. The user is free to choose any particular example and give it a name.

Once the supports has been given a name, a dialog will pop up which allows the user to specify different properties of that particular type of support. We're going to change a few properties as an example (Adhesion, Friction angle, Percent of length). Now that we have a support type defined, you'll notice it's not applied to any particular geometry in the model. This is because we haven't defined it yet but we're just defining different types of supports. We're going to define another type of support (Soil Nail) before we continue. We'll set some basic properties (Bond Strength, Support Color).

Now we have two different types of supports defined. Now we will return to the **Model>Support** menu and define the geometry of these supports. Here is the default geometry dialog that comes up. The easiest way to define geometry is by drawing it on the screen or the user can enter coordinates for starting and end points of any support but it is easier to draw them. The user can click the first point (on the model) somewhere near the boundary. If the user defines their first point outside of the model, the point will automatically be truncated at the model boundary and the new location is calculated.

Adjusting Supports

Now that we've drawn the geometry you can see that we can adjust the orientation. We've drawn it manually, in this case, but the user can also draw it normal to the boundary and you'll notice the support updating as we change various items (vertical, horizontal, angle from horizontal or angle from boundary) on the **Support Geometry** dialog. Next we can apply (select Property Name) one of our pre-created properties to this particular geometry. Another small aspect of this program is that multiple supports can be defined quite easily (Number of Supports). Rather than one support, a user might have five supports. Each of those five supports can be drawn (Draw) by clicking once on the starting location and stretching out from the boundary and clicking the final location. You can see it's quite easy to define different supports. Alternatively, if we want to change the property, we can select a different Property Name to change what the property is.



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