



## BEST PRACTICES COURSE – WEEK 17 – Complex Modeling PART 2- Intro to Complex Profiles

Hello, this is Eric Bobrow. In this lesson we'll take a look at complex profiles and see how you can work with them and set up your own as needed.

I will draw a box of walls to begin with and we will explore how we can at anytime select these elements here. Let's go and move around where we can see them. I will select all of these walls, and I can switch them from just simple straight up and down walls or tilted walls to a complex profile. When I do that, it allows me to choose which profile I'd like. Now in the standard U.S. template, there are three wall complex shapes that are available. In the international one it's probably somewhat similar. I'm going to pick the one that says brick wall with moldings and footings rather than foundation or this precast concrete here. [0:00:52]

Having selected that, you can see that the walls instantly change and have now a material brick on one side or painted on the other side and have the molding top and bottom there. Let's go to the floor plan and we'll draw a section just to see what this looks like. When we open the section, we'll see that it's giving a very nice, clean representation. When I select this wall, you can see it actually includes the hot spots that extend out to where the moldings are. Let's go look at how this is defined under the Design menu, Complex Profiles, Profile Manager. [0:01:36]

It will bring up a small palette here that will expand as we work with it. I choose which profile I'd like to look at. And I'm going to select that brick wall with molding and footing. Before I do so, I will point out that there are other profiles that we weren't seeing that were designed or designated for beams and columns. The only ones we were seeing were the ones that were designated for walls. Let's go to the brick wall with molding and footing and say we'd like to edit it, and then we can study what we've got. [0:02:08]

So this is a separate editing window called the Profile Editor. As we zoom in on it, we can see that there is one fill that represents the main body of the wall; it's actually a fill. Here is another one that, in this case, has no line work in it but it's still considered a fill. This fill here, if we look at it, it says that its side material is this white paint. Whereas when I select the main wall, it says that there are custom edges for this one. As you recall, if we go to 3D, we've got one side being brick and the other side being painted. [0:02:48]

Let me go and press down on the edge of this fill that's selected and we'll see the usual options for changing fills or that you can use for fills or polygons; plus this extra one that only available in certain cases when you're able to edit one edge individually. So for the custom edge settings, it says that this is set for brick. Now if I wanted to, I could switch it and decide whether that would affect only that one



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surface or edge or all of them. Let me cancel this and let's go to the other side and do the same command; and you can see that it's set for a paint color. That's how this is working the way we saw it. [0:03:30]

Now let's look at the base here. This molding down here, I'm going to change its shape to demonstrate that any changes that I do in this dialog box and the definition for the profile are then immediately seen in the 3D window and section. So if I go and click on this point and stretch it up by typing in a value, that made the base molding taller. Then let me go ahead and store the profile. And as soon as I go back to 3D, you will see that this gets color, it updates here. Let's go back to that section and we will see there it is. So let me go back and say edit that profile and we will fix it, I will put it back down the same distance that I did here, and then store that. And again that will update in 3D and in section as soon as I go back to those windows. [0:04:24]

These new elements here, in addition to having the fills and the materials that we're looking at, also have a structural designation. So this element here is core, and that makes sense. If we were to say show the core only of this wall then that's what we would want to see. If I select this one, a molding, it says core as well, that is incorrect. Let me demonstrate that this is setup improperly by going to that 3D window and then switching in our Quick Options here to instead of entire model let's say core only. We don't see a change. [0:05:03]

So let me go and correct that. I will go and edit that chosen profile, and I will have this selected as well as the lower one, and change them from core to finish and then store the change. Now in 3D, we'll see that the moldings disappear unless I go back and say show the entire model, and then of course they do return. [0:05:26]

So we can make whatever corrections or changes we want to this definition and any elements that are drawn with this will update. Let's go and create a new profile. So I'll go here and say new, and we will see that in the dialog box initially there's just a little hot spot for the reference point. That's actually where the reference line will take place when we are drawing with this wall. Now to create a new solid, we use the Fill tool. And we can set it up for whatever fill we want. This is what we would see in a section. So I'm going to say that is going to be a stone base wall, and that it's going to go up. Let's say go 1 foot across and 3 feet up. So that will be its original shape there. [0:06:20]

And then I'll switch to a simple fill here, and we'll take this a little thinner. And so now we have a wall with a stone base and an upper area. Now I didn't pay attention to the material, so let me go ahead and select this one and change it from brick here to one of the stone types. And then I will select this one. And for now, let me just change it to one of the paint colors there. Now I'll go ahead and store this. Before I do that, I'll point out that it is now setup to be used with walls rather than beams or columns. We can turn this off or on as we wish. [0:07:03]



I will just say store it. It'll ask me for a name. I will call this "Wall with Stone Base". And we go back to the floor plan. And I could select these walls to change them, but let me just draw some new walls. So I'll go to the Wall tool, and we'll go ahead and - let me just move this back into position here. So I will go ahead and say that I would like to draw a profile wall and select this new wall, which now is added to the list. [0:07:34]

Then I will go and create a sequence of walls. And we'll just draw this down like this here. You can see how it cleans all of that up nicely. If I look in 3D and we zoom out a little bit, and you can see how everything is being drawn very nicely here. Now we are actually looking at the inside face of the wall because when I was drawing this, the reference line was on this point here. If I select the wall you can see the heavy blue line, which we see in ArchiCAD 15 and later representing the axis. In earlier versions, you would just see it's a heavier reference line. [0:08:24]

Now let me show you what happens if we adjust this. So I'll go ahead and edit this profile. Let's say we wanted to draw it with the reference line being on the outside here. Let me just move these over. So now I've defined it so that when I'm drawing this is going to be the reference line. And the store this. You'll see that it actually updates this here; the reference line is now over at this point. And when I draw on the floor plan that will be the point in space. [0:08:53]

Now I actually might prefer to have it in line with the face of the wall. So I may prefer that the reference line being along this line here of the upper wall, that might be a good guide. So let's go and edit this profile again and perhaps move it. So I'll just drag it so that this point is above the origin and store it. And again having made that change, this will update. And if I select it you can see where the reference line is. Let me just draw a few more walls like this to show how they clean up as we come around. [0:09:33]

We'll go back to 3D. So having done that, I want to point out that the edge here does not have multiple surfaces. It has only one material. Now we can select this element here and change the material of a profile using the material choice here. But you'll notice that the other sides are gray because it's controlled by the profile definition. So here I will just switch this let's say to a different color just to make it red so we see what happens. We will see that the entire surface changed there. [0:10:13]

So if we wanted to make this actually have the stone here and different color up there, the best solution that we can do - and by the way I just undid the change - is to return the wall. So in other words if I'm drawing the wall, instead of drawing the wall for a whole long piece, I can just draw it just a short little piece that will create this little return shape. And when I go back to 3D, you can see that this is the stone. So let me go and move our sun around in our 3D projection settings so we can see that a little better here like this. [0:10:53]



And now you can see that we've got the stone on the side. Now having done that, we'll see that this piece now has an issue. And of course we actually haven't even addressed the fact that the interior we'd like to have that to be maybe painted all one color. So let's go and edit this profile, and let's select this fill, go to the edge and use this option that I showed you earlier to set the material to the interior paint color that I'd like. Do the same thing with this surface here, and now when I store this and I go back, you'll see how this updates and now it looks quite clean like it's all one surface material. [0:11:40]

However this little piece, if I move my viewpoint around, you can see there's a little return piece. Now I need to update that, and let's say go to the edge and change it to that same material, and then it will blend in very nicely here. Now what happens when we put in doors or windows, and what happens when we want to stretch the wall? Let's take a look at some of the options there. [0:12:10]

So if we go back to that section here and we select this wall and I go to the top, with normal walls you can use the stretch option to make it taller. And there is a similar but slightly different pet palette option here to make it taller, but what you'll notice is that when I make it taller, the molding didn't change its shape. That is because - and I will just undo this back - that is because in this wall when I look at the profile here, there is a stretch zone defined. So you can see these little pair of lines here, these define the vertical stretch zone. So when we make it taller, the area between these two lines is deformed or stretched, whereas the area outside, top and bottom, is left alone which of course gives us a nice, clean result. [0:13:06]

In the same way we have horizontal stretch zones available. By the way, if you're not sure which is which, you can always turn off using these layer eyeballs to see what is controlled there. Now let's take a look at that section and see that you can actually make the wall thicker. If I select this and use the option here for making it thicker, then we could make it as thick as we like, keeping the moldings the same profile. So let me just undo that. [0:13:43]

Now be aware that if I go here to make it taller, I can make it taller, but I can't make any shorter than it originally was. This is considered the minimum size. So if you are creating your own profile, then you would want to make it the shortest and thinnest that you would ever want to use it and then you can always draw it on the fly to make it taller or thicker if you wish. Now in addition when we're working on this profile, you'll see if we turn off these stretch zones here - actually this is the visibility. If we turn the check boxes off, then the element will not be able to be stretched, it will be a fixed size. Whatever is defined here, it will not be able to be made any taller or thicker. Of course you can make a longer piece of wall but not make the wall change its profile. [0:14:35]

If we hide the construction layer, we will see that the actual volumes representing the solid parts of the wall disappear and we have these two lines remaining. These are the opening reference lines. I'll just turn it off so you can see that that's what they are referred to. And basically these define where



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windows and doors will be placed. So if you place a window or door and you say face it one way or face it the other way for that element, this defines where the face of that window or door will be. [0:15:10]

So in general what we want it to be is the surface that makes sense as opposed to of course sticking out beyond that. If we didn't have the opening reference activated, then it might inadvertently place the window if you set it faced this way, it might actually stick it out in empty space there. So you'll want to avoid that. [0:15:31]

There's one more layer here called the drafting layer, which we can turn off or on, but actually there's nothing currently drawn on here. When we activate the Fill tool, you can see that fills are construction elements whereas lines and arcs are drafting elements. So you can draw or paste in 2D elements such as lines, arcs, or poly lines into the profile editor to use as guides for drafting; but they will not actually show up in the 3D model in your section or defining something that you see in the 3D window, but you can use them for alignment purposes. [0:16:11]

So this completes our basic introduction to the concept of complex profiles. We'll return with another lesson, looking at some more of the advanced, interesting and innovative ways that you can use complex profiles. This has been Eric Bobrow; please add your comments and questions to the page down below. Thanks for watching.

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