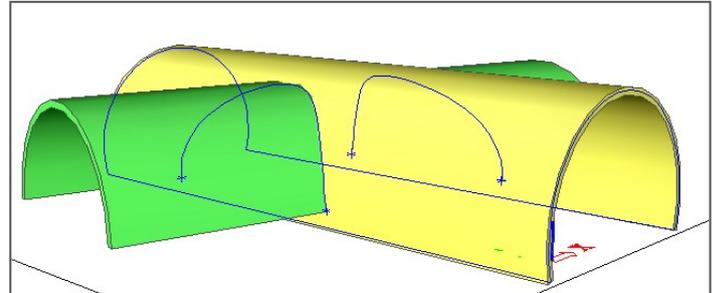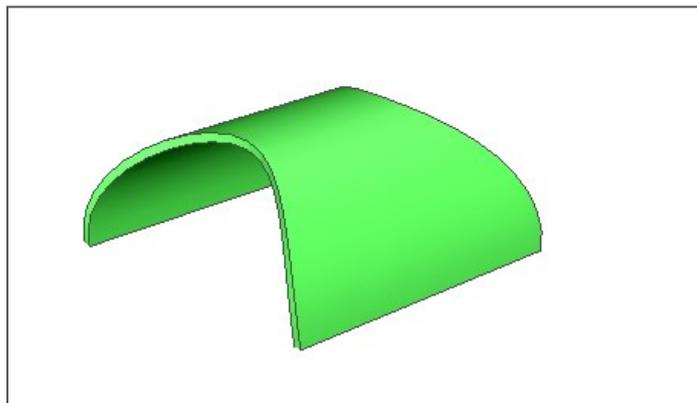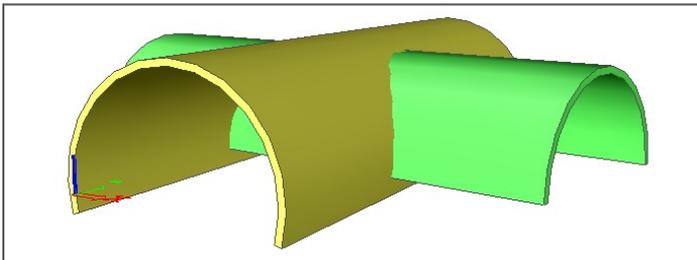# Cut-outs of 2D members

CPE *esa.04*

This module extends the possibilities of SCIA Engineer which are given by the generation of intersections of 2D members. Under certain circumstances the generation of the intersection (i.e. the intersection line or curve) is sufficient, for example when the user needs to connect a plate and a wall so that they "know" about each other and act as one unit. On the other hand, especially curved surfaces require more than a simple calculation of the intersection curve. It is usually necessary to remove a part of the structure on one side of the intersection and to keep just the other part.


What is a cut-out ?

When two or more 2D entities intersect, a decision needs to be made concerning the intersected part(s)

The real problem is in fact split up in 2 separate problems:

- calculation of the intersection (i.e. intersecting curve)
- removal of the part (the "cut-out") that should not be taken into account in the calculation (when exists)

How to generate a cut-out ?

Intersecting curves are generated by connecting shells and by removing the useless parts.

The user has full control over the parts of the model he wants to keep and which parts to remove.
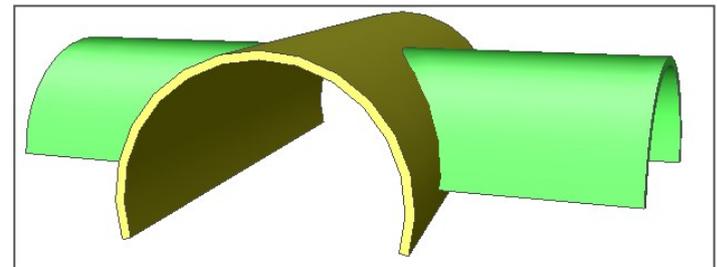
The resulting shape is checked by representing the FE-mesh
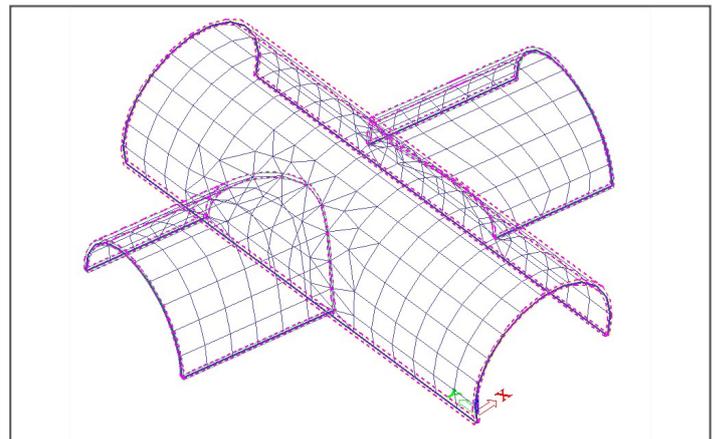
The cut-out is considered - in SCIA Engineer terminology - to be Additional Data, linked to the shell. It's not actually removed from the 3D scene; the shell remains unchanged as such

As soon as you move one of the shells, the initial shape of the shells is reset.

Required modules
esa.01