



Concrete Features Catalogue Creation in AVEVA E3D

Symbols and Assemblies

Summary

Many process facilities utilise concrete as a key construction material, taking advantage of its compressive strength and ability to be formed into an infinite variety of shapes and structures. While most 3D plant design software includes functionality enabling the modelling of orthogonal slabs and walls, including holes, it often falls short for more complex shapes. Creating elements such as sumps, pedestals, plinths and drains, or when slopes and falls must be incorporated, requires more effort and time.

To address this problem, TecSurge leverages the power of AVEVA E3D Design templates, creating a comprehensive, parametric concrete feature catalogue enabling users to easily and accurately design elements complying with company or project standards.

TecSurge has prepared various types of panel fitting and civil foundation catalogues, including items such as drain trenches for underground pipes, and penetration catalogues for pipes, floors, and walls.

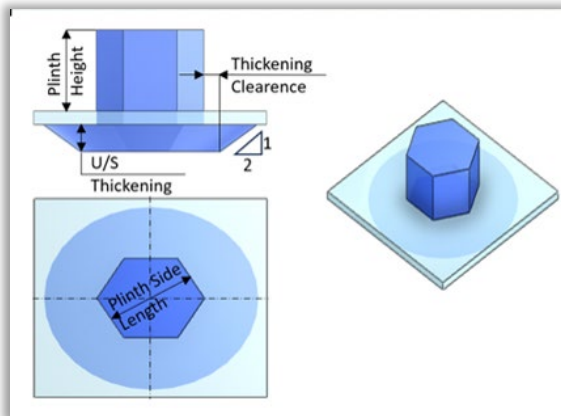


Figure 1 Plinth on slab hexagonal sample concrete catalogue sketch

Differentiators

- One-time effort reduces costs in future projects
- Standardization increases efficiency in design and construction
- Reduces user time drastically when modelling civil structures

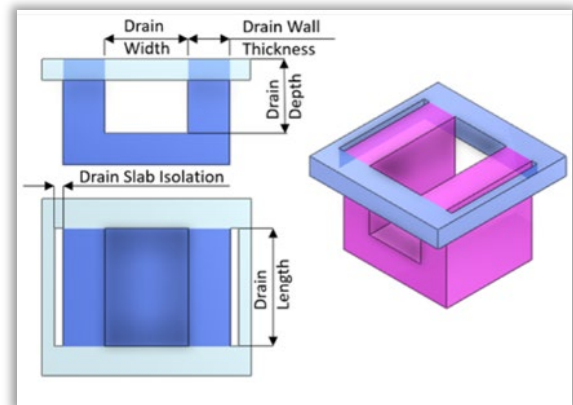


Figure 2 Internal drain sample concrete catalogue sketch

Deliverables

- Concrete feature catalogue
- Specification files for the concrete catalogue
- Detail plots for each concrete fitting
- Parameter validation according to standard
- Validation reports for quality assurance

Work Process

We create a new concrete feature catalogue in the AVEVA E3D Design environment, addressing geometry elements, parameterization, and orientation requirements. This involves:

- Developing clean, error-free geometric definitions.
- Implementing reusable parameters and properties to ensure scalability and cross-project compatibility.
- Conforming to naming conventions and dimension types to prevent modelling errors.



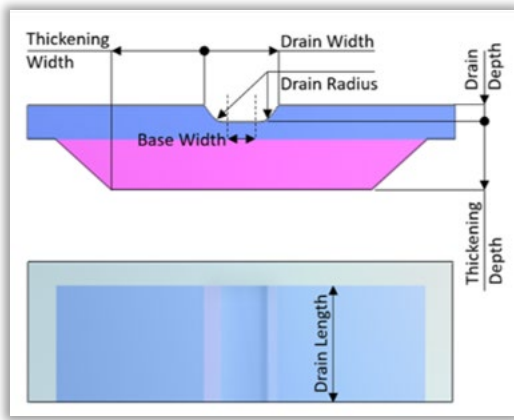


Figure 3 Spoon-v-drain sample concrete catalogue sketch

The new catalogue may include items such as plinths with various profiles, and configurations (e.g., on slab, isolated, on existing foundations, tank plinth, & isolated tank plinth), sumps, penetrations, pedestals, bollards and drains.

After completing the creation of concrete (civil structural fittings) catalogues, we use them to develop concrete specifications. These specifications can then be applied to create various civil structures within the AVEVA E3D Design model.

These concrete catalogues are developed purely based on design parameters, meaning users can modify these parameters at any time as needed and update the model accordingly.

This work process enables end users to efficiently create concrete features in AVEVA E3D Design by guiding them using concrete feature specifications, ultimately saving time and ensuring consistency in structural modelling.

Users select the required fitting from the available options, easily adjusting design parameters if required. By clicking the 'Detail' button, users can view a detailed sketch of the parameters, saving time locating and referring to the standard drawing.

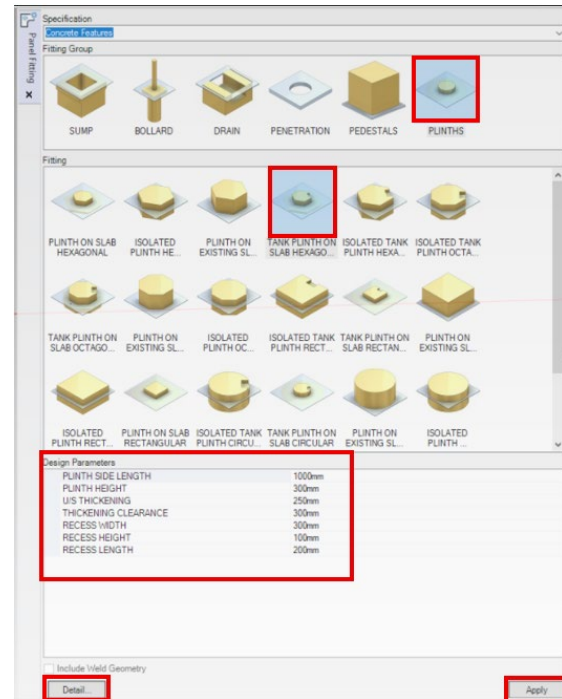


Figure 4 AVEVA E3D Design panel fitting specifications list

Quality Assurance

Prior to submission of deliverables, every symbol is tested on an environment utilizing the created symbol library. Upon successful completion, the handover package is sent for customer verification.

During the customer verification period, the client confirms their acceptance of the customized symbols and provides comments or feedback regarding the delivered package. Any issues raised during this stage will be resolved before final handover.

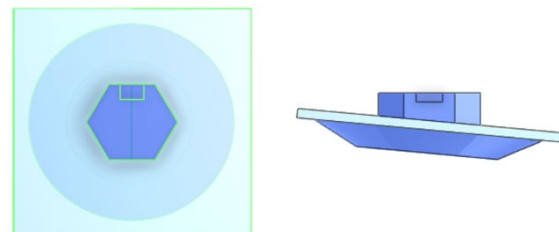


Figure 5 Tank plinth on slab hexagonal AVEVA E3D fitting catalogue sample



Getting Started

TecSurge is engaged early in the project lifecycle to ensure that all client requirements are understood, allowing us to customize our services to meet the specific needs of your project. Our approach ensures that we deliver high-quality Civil Structural Fittings that are tailored to the exacting standards of your project.

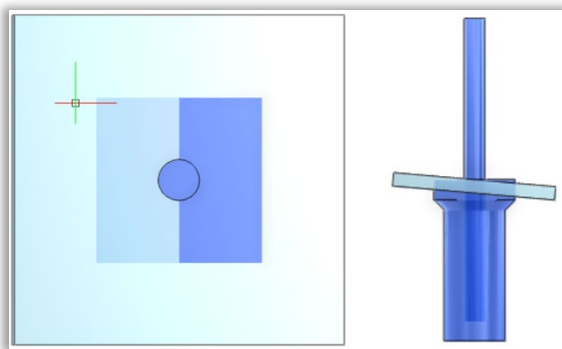


Figure 6 Bollard base & pipe AVEVA E3D fitting catalogue sample

To understand the scope of the work, we ask a series of questions, such as:

What are the specific standards or client-specific requirements for the civil structural fittings?

Why: This information is crucial for configuring the AVEVA E3D environment and developing fitting families that meet the necessary standards.

What types of civil structural fittings are required, including penetration fittings & different types of foundations?

Why: We customize or parameterised the fitting catalogues based on the complexity and type of fittings required, ensuring they fit seamlessly within the project's structural civil work.

When is your target completion date, and when do you expect to start?

Why: Understanding these parameters helps us allocate resources efficiently, manage timelines effectively, and adjust the scope of work based on project needs.

If this service describes your situation, and you're able to provide the engineering inputs and answers to the questions listed here, please [contact us](#) today for Concrete Features Catalogue Creation in AVEVA E3D.

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