
FCSI GLOBAL REVIT Standards 2022 v1.0

MANUFACTURER CONTENT DEVELOPMENT GUIDE
FOODSERVICE EQUIPMENT



**We share,
we support,
we inspire.**

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1.0 GENERAL

1.1 PREFACE

FCSI has established the standards outlined in this document to ensure consistency, optimum functionality and quality of the BIM content provided for foodservice equipment.

The foundation and source of the BIM Software used to create Revit family content are manufacturer spec sheets or other published product information. This document is not intended as training to implement these standards, or on how to use Revit.

Autodesk and Revit are registered trademarks or trademarks of Autodesk, Inc., in the USA and other countries.

This document has been created in cooperation with input from representatives of the three FCSI divisions APD, EAME & TAD, having formed the FCSI BIM Taskforce (2020 – 2021) of Professional Consultants. The FCSI BIM Taskforce proposes that this document is used as **guidelines** to assist content creators globally.

The objective of this Standard is provided as a template when content creators are commissioned with producing Revit families of foodservice equipment for the manufacturers of foodservice equipment.

This document is not catch all to solve all issues in all regions. We acknowledge that some additional work will need to be tailored to suit local applications and codes.

N.B. The reference to *QF Specialty Equipment* will be phased out with the replacement of "FOODSERVICE EQUIPMENT" from 2022 onwards.

1.2 REVIT VERSIONS

Autodesk allows for previous versions of program releases to be used, currently this is a maximum of four version years. NEW content should be created in a version that is four years back from the current release to allow multi-year project compatibility.

1.3 FILE SIZE

Maintain single family files at an optimum size to balance performance and complexity. In general, all files sent to hosting platforms should be no larger than 1MB. Only complex families should be near 1MB in size, simple families should be much smaller. Once complete, purge all content to ensure the file is carrying only the required parameters and materials.

1.4 UNITS

Develop all families using native units of weights and measures. Use dynamic parameters that will allow the software to convert as required for the project based on its regional application.

If units of measure are included in a TEXT parameter, provide both imperial and metric. Due to TEXT not being automatically convertible it may be necessary to create families in multiple languages to capture these text parameters.

1.5 CATEGORY

Equipment in Revit is included under the much broader category of **Specialty Equipment**. This category will be used for most types of equipment. However, in selected cases, it may be appropriate to use the **Casework or Generic Model** category for certain items. Casework category and Generic Model allows equipment to be cut in elevation and section.

1.6 FAMILY TYPE CLASSIFICATION

Associate each product with a single family.rfa. If a product has only one model number with a range of varying attributes, it should only have one family type and configure the varying attributes as a family **Instance Parameter**. Rename the default family type with the model number listed on the manufacturer's documentation.

For simple families, **Family Types** may be used for dimension variations in equipment that have no utility connection or connection variations. For example, a wall shelf or a worktable. It is recommended for families that contain six or more types to create type catalogues. Type catalogues must have the same name as the associated family. Type catalogues must be created for all languages in which a family is to be used.

For more complicated equipment with multiple options and utility configurations, create a separate family for each model number for products with multiple model numbers. **Family Types** should be created for models that are available in different utility options, such as gas types and voltages. The family type names should match the relevant model numbers and/or utility information as listed in the manufacturer's documentation.

1.7 FILE NAMING FORMAT

Name families using the following format:

QF_<Manufacturer Name>_<Model Number>_<Description><Language>

Use for <Language> the syntax that is also used in the file names for shared parameters: USE ISO 639-1 Standard for Language

Examples: QF_Perlick_TS24LS_Underbar Bottle Display Unit
 QF_Wells_HT200_Hot Well
 QF_Advance Tabco_7-PS-80_Hand Sink_EN
 QF_Meiko_MiClean-U Mašina-za-pranje-sudova_SR

The QF identifies the family as Foodservice Equipment.

1.8 PREVIEW IMAGE

Set family preview image to the following:

- Default 3D View: Southeast orientation or Top-Front-Right
- Visual Style: Shaded with Edges
- Detail Level: Medium

2.0 GRAPHICS

2.1 DETAIL & GEOMETRY

Limit family geometry and its level of development for manufacturer content to:

- Identifying elements
- Dimensioned geometry in manufacturer's documentations
- Parts critical to spatial and functional identity
- Use Coarse for LOG 100, Medium for LOG 200 and Fine for LOG 300 to 400

Avoid or simplify excessive/tedious replication of product details in favor of geometric clarification and enhanced family performance. While the temptation to add every element like bolts, screws and identification plate may be strong, rarely are such details required to determine clearances, convey design intent, or accurately specify specific equipment choices. Do not model internal components such as insulation, hidden frames or other elements that will never appear in view.

Model Lines are only used to add detail when they appear in 3D and they are **not** used to outline modeled geometry. Use **Model Lines** (work plane-based) for any additional details that are flush to the face or use in place of complex details rather than using geometry. **Detail Items** or masking regions should not be used to outline equipment geometry, it should only be symbolic lines. If required, **Detail Items** or **Masking Regions** should have visibility controlled with a Yes/No Parameter. Lock all lines to respective geometry or **Reference Planes** if the family is parametric to ensure that the lines move accordingly when the family flexes. If the item is mounted above counter height, create a **Symbolic Line** in elevation with an invisible line style at the back center of the equipment to aid in showing items located above the cut plane.

Avoid use of imported content developed in other CAD platforms as a replacement for family geometry. Only native Revit is acceptable within a family. The general practice is to set **origin** to the back left of the equipment. Some items may have an alternate origin i.e. a faucet or a heat lamp.

Refrain from creating excessive **Reference Planes** and **Reference Lines**. Only name the main **Reference Planes** that define the geometric identity of the family. In parametric families be sure to snap geometry to **Reference Planes** rather than other geometry and assign the dimensional parameters to the **Reference Planes**. Doing so will allow for optimum flexibility and will help prevent over-constraining the family.

Do not use color to categorize lines or geometry. Everything should be modeled in black. Any color identification can be done in the project environment by the end user rather than inside the family. This will allow for global controllability on all families in a single project.

2.2 SUBCATEGORY

The below list of Subcategories has been determined as the minimum at this time. The main consideration in subcategorizing is the optimum controllability of the **Object Styles** and **Visibility/Graphic Overrides** in the project environment. Refrain from creating new subcategories with unassigned geometry. Failure to capture **EXACT** naming conventions for Subcategory Names will result in duplicate and uncontrollable Subcategories.

2.3 SUBCATEGORY LIST

Subcategory Name

QF_Clearances_Proximity*
QF_Clearances_Door_Drawer
QF_Details_Overcounter
QF_Details_Undercounter
QF_Details_Surface
QF_Logo
QF_Centerlines
QF_Foodservice_Equipment
QF_Hidden_Lines
QF_Media_Connections
QF_Media_Connections_On-site
QF_Media_Lines

*Proximity refers to manufacturers minimum clearances to adjacent appliances including serviceability, maintenance, Code Mandatory, and operations per the manufacturer's documentation. (Local Country or State specific installation clearances must be managed by each division where applicable.)

2.4 CLEARANCES

Clearances should be shown using **Symbolic Lines**. The **Symbolic Lines** should always be assigned to their respective **Subcategory**. Refer to the **Subcategory** list to assign the clearances accordingly. A Show Clearances Y/N Shared parameter will be preferred. Any geometry modeled to represent clearances must be controlled with a Yes/No visibility parameter. Detail level should not be used to control door swing visibility.

2.5 VISIBILITY

Control any geometry that is not pertinent to all models of a product by a concisely named **Instance** or **Type** visibility parameter. For example, if a back-bar cooler has the option to be on casters, legs or on a curb (plinth), these items would have a Yes/No instance parameter (for example named 'Casters') to control visibility.

In the **Visibility Settings**, all 3D geometry is to be turned off in Plan/Reflected Ceiling Plan (RCP). All 3D geometry is to be turned on in Front/Back and Left/Right views. All options for **Detail Level** (coarse, medium, & fine) must be available representing the proper LOD based on which option is chosen. For example; in Coarse LOD (100) no logos or other distinguishable details shall be visible, it is used for simple schematic and symbolic representations. In Medium LOD (200) "classic" planning (approval planning, construction planning, installation planning) is carried out. In Fine LOD (300-400) Revit® families are presented realistically so that the professional kitchen planner can use them for visualizations. Ensure that all Detail Levels are checked as well in the family.

2.6 MANUFACTURER LOGOS

While logos and other brand assets do not serve any functional purpose within the family geometry, manufacturer specific identification is permitted in the family if they are controlled with a Yes/No visibility parameter named **Show Logo**. Logo geometry in 2D and 3D should be assigned to the QF_Logo Subcategory to allow global control. A Show Logo Y/N Shared parameter will be preferred.

2.7 DIMENSIONS & FLEXING

Ensure that all dimensions are legible and do not overlap in the annotated views. All dimensional parameters that control the family geometry are to flex as intended. Only create a dimensional parameter for dimensions that change per family type. Delete all dimensions used to aid the creation of the family unless they are used to constrain for parametric flexing. Do not hide dimensions within a sketch.

2.8 MATERIAL APPLICATION

To ensure consistency in projects, all equipment families should use the distinct materials from the **FCSI Approved Material Library**. Define new materials only when the standard predefined materials in Revit are inadequate for representing the product materials. Be concise and clear when naming new materials, using the naming convention of **QF_<material>_<color>_<finish modifier>**. Failure to capture **EXACT** naming conventions for Material Names will result in duplicate and uncontrollable Materials. Do not use any delimiters or special characters in material names. Define all available material identity data accordingly when creating new materials. Do not use any bumps or textures for new materials.

Although photorealistic rendering is not the current intent of this standard, proper representation of the manufacturers content when appearing in 3D Renderings and Virtual Reality is the goal. Please recognize the file size impacts as well.

3.0 FUNCTIONALITY

3.1 FCSI Shared Parameters List

All family data must be created with the FCSI Shared Parameters. This enables data to schedule in projects.

3.2 PARAMETERS

Select all parameter types according to the nature of the units and values of the manufacturer's documentation information with which they are associated. Consider the type and the relevance of any given parameter to other parameters when grouping parameters. As an example, keep all electrical parameters in the same group.

Create **Instance Parameters** for additional options on the manufacturer's documentation that would change the plan or elevation view of the family. Associate any nested families or group's visibility with the **Instance Parameter** created for the option. This will allow for toggling the options on/off per instance in the project. Examples of this are: door swings, drawer options, backsplash, legs vs. casters, etc. It is also important to have the **Item (Position) Number Parameter** as an Instance Parameter. That way multiple pieces of the same equipment can have different Item Numbers.

Only create new parameters when critical product attributes are reflected in the family; be concise and clear when naming new parameters. Do not use any delimiters or special characters in parameter names + - / \ * () " ' < > | ^ \$ { } []. Unless the parameter is being used as a future placeholder, refrain from creating any parameters with blank values. Do not leave any **System Parameters** with blank values unless they cannot be associated with a value from the manufacturer's documentation. Refrain from using the formula column in the parameters list for the purpose of locking data.

*** Refer to the Shared Parameters List for all parameters and their classification. ***

3.3 MANUFACTURER & PRODUCT INFORMATION

The following **Identity Data** parameters are mandatory. Do not leave them blank or locked with a formula in any family:

- Description: the brief industry name of the item from the manufacturer's documentation
- Model: use product model number found on manufacturer's documentation
- URL: link to webpage with the manufacturer's documentation
- Manufacturer: found on manufacturer's documentation
- Weight: found on manufacturer's documentation.

3.4 HOSTING

Families are not to be made as **Wall Based** or **Face Based**. Equipment cannot be hosted to walls and floors in linked models, which is where they are typically located.

Do not use the **Work Plane Based** option unless necessary for the function of a family. For example, a sink that is cut into a worktable. Be sure to check the **Cut with Voids When Loaded** box if geometry needs to cut other geometry within the project environment. This is intended for the instance where two independent families are built to interact with each other in the project, like a sink cutting into a table.

3.5 NESTED FAMILIES

Nested families should **ONLY** be used with repeating items such as doors, casters, and legs for ease and consistency in building the family.

You may also utilize **Nested Families** if there are multiple connections for utilities/information in a single family. For example, a booster heater connection for a ware-washer, a fryer battery with multiple connections or a double stacked combi oven. Please note that if a configurator is available, it shall create the nested family in the same way.

If a nested family is going to be scheduled and tagged, check the **Shared** option in the **Properties Dialogue** box of the nested family. Do not check this box for simple accessories like doors, castors or legs.

3.6 MEP CONNECTOR

Any piece of equipment that contains a utility, such as water supply, water drain, power, gas, etc., should use a **MEP Connector**.

Host connectors by independently modeled 3D geometry with Annotation Symbols and Item Number and use **Associate Family Parameters** to map the provided **Shared Parameter** to the built-in connector parameter. Always assign **Connector Description** parameters a value with no exception.