

Here are some points about the ItemTypesPlus app:

1. Setup

- a. Run the installation package as administrator
- b. It will install the following:
 - i. The primary app: ItemTypesPlus.dll
 - ii. A couple of other dll's that support reading from a spreadsheet
 - iii. An example "Supplemental Info" spreadsheet
 - iv. An example MicroStation configuration file
- c. Copy the configuration file to the ...\\config\\appl folder of you MicroStation CONNECT installation
- d. Edit the configuration file to reflect the correct path of the app (should be okay)
- e. Edit the configuration file to reflect the correct path and file name of a lookup table spreadsheet (if needed)
- f. Edit the supplemental info spreadsheet as follows:
 - i. Any item types for which you wish to have a picklist, a calculated property, or a lookup property must be included in this spreadsheet
 - ii. The first four columns must match the naming of your Item Type Library, Item Type Name, Property Type (if used), and Property Name
 - iii. The fifth column can contain very simple to somewhat complex (not a lot of testing here) expressions using property names within the same Item Type. For example:
 1. Length * Width
 2. Price Per Area Unit * Area
 3. Area / 9
 - iv. The fifth column is also used for lookup table entries, in combination with the Property Name column, with the following requirements:
 1. The expression for lookup tables must be of the following form: LOOKUP_TABLE_NAME[KEY_PROPERTY_NAME]
 2. The expression part "LOOKUP_TABLE_NAME" must match the name of the tab (worksheet) in the lookup table spreadsheet, and must contain the word "LOOKUP" (not case-sensitive)
 3. The expression part "KEY_PROPERTY_NAME" must match a column name in the lookup table worksheet and is used to match values in other columns
 4. The Property Name in the supplemental info spreadsheet where a lookup table entry exists, must match a column name in the lookup table worksheet to be matched. Here's an entry in the supplemental info spreadsheet:

Property Name	Property Calculated Expression
CATALOG_NUMBER	
HEIGHT	CAT_NUM_LOOKUP[CATALOG_NUMBER]
WIDTH	CAT_NUM_LOOKUP[CATALOG_NUMBER]
THICKNESS	CAT_NUM_LOOKUP[CATALOG_NUMBER]

And a corresponding entry in the lookup table spreadsheet:

	A	C	D	E
1	CATALOG_NUMBER	Thickness	Width	Height
2	30-3402	0.08	84	12

So, in the ItemTypesPlus tool, when a catalog number of 30-3402 is entered, the Thickness, Width, and Height properties will be filled in automatically with the values in the lookup table.

2. Usage

- The tool is meant to look like the Item Types tool in MicroStation CONNECT and follow a similar workflow for attaching the properties
- The left panel tree view will be filled in with item types found in the existing model as well as all dgnlibs attached
- Select from the tree view the item type you want to assign to an element and click the Add button. You can add as many item types as you want to assign an element
- Edit the property values in the right panel. Lookup table and calculated properties will be read-only
- Click the Attach button and identify the element to attach the item type(s) to
- Or create a selection set first, then click the Attach button, and issue an accept data point to attach the item type(s) to a selection set of elements
- By clicking the "Edit Item Types on Element" button you can identify an element and modify the property values, then apply the changes
- By clicking the "Remove Item Types from Element" button you can remove all attached item types from an element

The supplemental info spreadsheet must match up with your Item Types, and refers to your lookup table spreadsheet in the Calculated Expressions column. Here's a description of lookup tables:

- Lookup Tables

- The lookup table spreadsheet to be used must be defined in the MicroStation configuration variable named MS_LookupTables (I've added this to the cfg file included in the installation package but you can define it anywhere you like, and of course set it to a valid location and file name for your setup)
- Lookup table worksheets within this spreadsheet can be named whatever you like as long as the name contains the word "Lookup" in any case (lower, upper, mixed)
- A property can have its value derived from a lookup table as specified by a special entry in the Property Calculated Expressions column of the supplemental data spreadsheet:

Property Name	Property Calculated Expression
MUTCD_CODE	SIGN_FACE_LOOKUP[CATALOG_NUMBER]
ACTUAL_LEGEND	SIGN_FACE_LOOKUP[CATALOG_NUMBER]
BACKGROUND_COLOR	SIGN_FACE_LOOKUP[CATALOG_NUMBER]

- This indicates the name of the lookup table worksheet (SIGN_FACE_LOOKUP) and the name of the column to be used as the key for the lookup (CATALOG_NUMBER)
- The value for a given property will be found by a column in the lookup table matching the property name. In combination with the expression defined above this example indicates BACKGROUND_COLOR will be matched (notice I changed the name of the sheet in the example you sent so I know it's a lookup table, following the rule above,

and 'Post Selection' isn't a lookup table; you can change it to something else if you like, as long as it contains 'Lookup'):

	A	G
1	CATALOG_NUMBER	BACKGROUND_COLOR
2	30-3402	BLUE
3	30-3403	YELLOW
4	30-3405	WHITE
<div><div></div><div></div></div>		Post Selection