



Revit plugin manual

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design services

2023-11-01

table of contents

table of contents	1
general information	3
request and install.....	4
how do I get the Aalberts IPS Revit plug-in?	4
installation conditions	4
how do I install the Aalberts IPS Revit plug-in?.....	4
launching Revit for the first time after installation.....	5
toolbar Aalberts IPS add-in	6
automatic updates	7
general commands.....	8
command “about us”	8
command "contact"	8
command “online help”	8
command “settings”	8
command “pipe type wizard”	11
definition of the Aalberts IPS Revit pipe type	11
parts of the Aalberts IPS Revit pipe.....	12
commands “fittings” and “valves”	14
select a product group	14
generate and place family.....	16
available Aalberts IPS connection technologies.....	16
naming of the Revit families and family types	18
"tools" commands.....	20
command “cut pipe/set pipe length”	21
command “remove tube”	23
command “rotate around pipe”	24
command "branch to pipe".....	25
command "branch from pipe"	26
command “disconnect”	28

command "move and connect"	29
command "copy and connect"	30
"schedules" commands.....	31
command "product schedule"	31

general information

- appears as Aalbert's IPS toolbar in BIM software Revit.
- available for free
- suitable for Autodesk Revit (2019..2023).
- unlocks the Aalberts IPS product folio
- contains also tools for design and product schedules.

the Aalberts integrated piping systems Revit plug-in:

- is a piece of software that works on top of the BIM software Autodesk Revit (version 2019..2023).
- appears as a separate Aalberts IPS toolbar in Revit.
- unlocks the product portfolio of Aalberts IPS for MEP designers and engineers.
- also includes additional tools for designing and creating product schedules.
- generates the product content (Revit families) using current product data (live connection to central product database) based on ETIM-MC (Modelling Class) standards.
- this ensures that the product content is always up-to-date and can be localized automatically (eg language, local BIM standards and units).
- works with projects in which the Revit project units are “millimetres” as well as project units in “imperial” (inches).

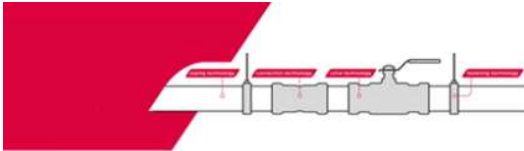
request and install

- can be requested for free on the website
- instant download and installation

how do I get the Aalberts IPS Revit plug-in?

You can fill in the application form for the plug-in on the Aalberts integrated piping systems website.

We will then automatically send you an email with information about the license and instructions and links for download and installation. If you do not receive the license email in your inbox, please check your spam email.



Beste John,

hartelijk dank voor het aanvragen van de Aips Revit Plug-in.

hierbij sturen wij u de bijbehorende licentiegegevens en installatie-instructies.

uw licentiegegevens:

- e-mailadres: myname@mycompany.com
- licentiesleutel: **FF23cf68c82f8601**

voorwaarde voor installatie:

- minimaal één van de Revit-versies 2019, 2020, 2021 of 2022 moet op de computer zijn geïnstalleerd
- een internetverbinding tijdens het gebruik van de Aips Revit Plug-in

download en start het installatieprogramma via deze link: [download Aips Revit Plug-in](#).

eerste keer starten van Revit:

- na installatie, de eerste keer dat de Revit-installatie wordt gestart, wordt u gevraagd of de plug-in mag worden geladen.
- vervolgens verschijnt het dialoogvenster "instellingen" waar de licentiegegevens (e-mailadres en licentiecode) moeten worden ingevoerd. Kopieer en plak de gevraagde licentiesleutel uit deze e-mail.
- selecteer als taal "Nederlands (NL)" voor Nederlands

functionaliteit:

- "fittings" en "valves": catalogus voor het selecteren van fittings en afsluiters. Optioneel filteren op toepassing en keurmerk.
- "Pipe system wizard": genereren van een Revit leidingsysteem met alle bijbehorende fittings in één klik door het selecteren van een leidingserie en een fittingtechnologie. Optioneel filteren op aanvraag en keurmerk.

installation conditions

- at least one of the Revit versions 2019, 2020, 2021, 2022 or 2023 must be installed
- administrator rights on the computer are required to install the plug-in.
- a live internet connection while using the Aalberts IPS Revit plug-in

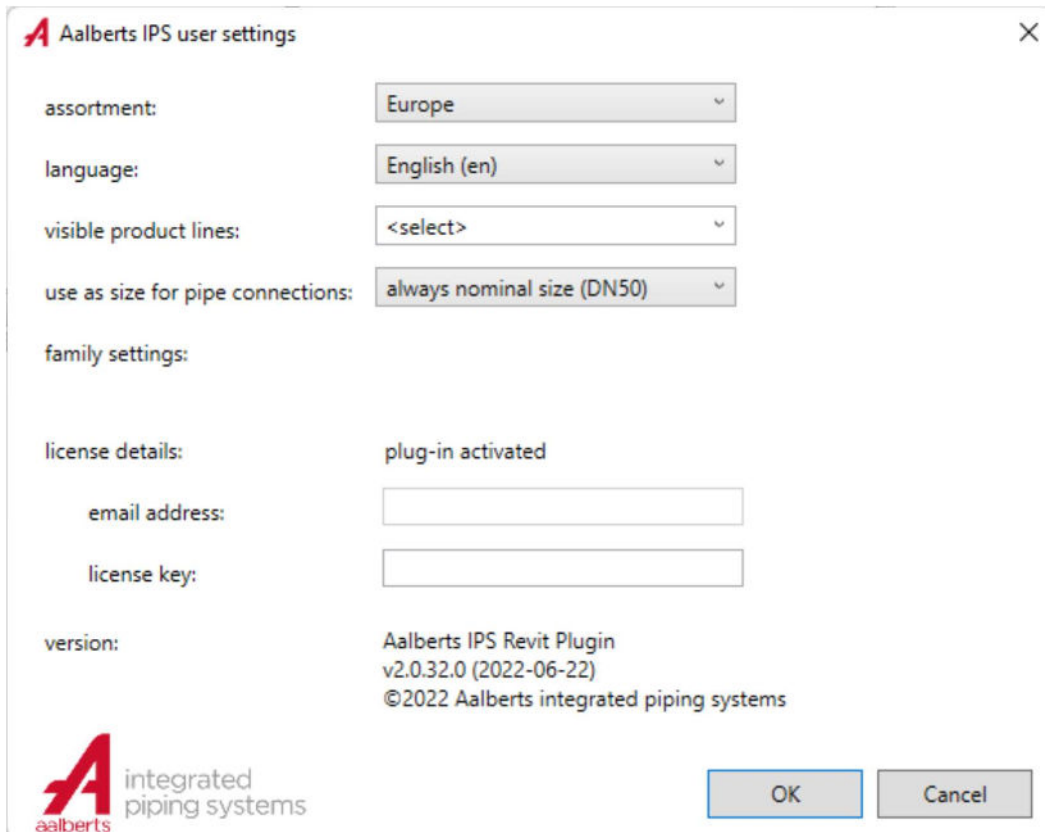
how do I install the Aalberts IPS Revit plug-in?

Download and launch the installer by clicking the download link in the license email

launching Revit for the first time after installation

After installation, the first time the Revit program is launched:

- you will be asked if the plug-in can be loaded.
- then the “settings” dialog box appears:



Aalberts IPS user settings

assortment: Europe

language: English (en)

visible product lines: <select>

use as size for pipe connections: always nominal size (DN50)

family settings:

license details: plug-in activated

email address:

license key:

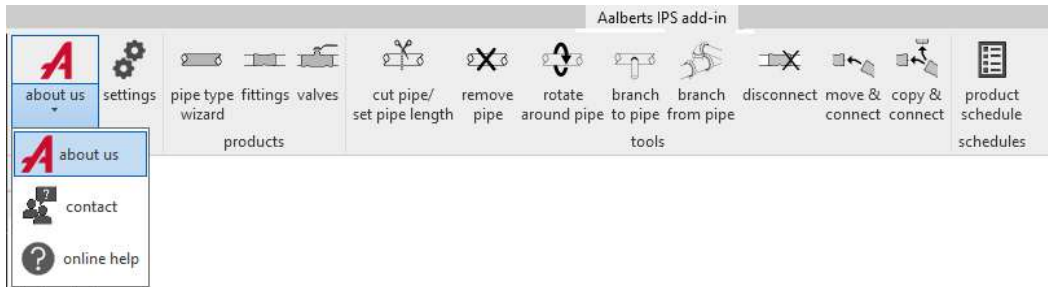
version: Aalberts IPS Revit Plugin
v2.0.32.0 (2022-06-22)
©2022 Aalberts integrated piping systems

OK Cancel

- fill in the license details (e-mail address and license key). Copy and paste the requested license key from the license email.
- if necessary, change the other user settings such as the desired assortment and language (for more explanation see command “settings”)
- finally agree to the “license agreement”

toolbar Aalberts IPS add-in

Finally, a new toolbar has been added within Revit.



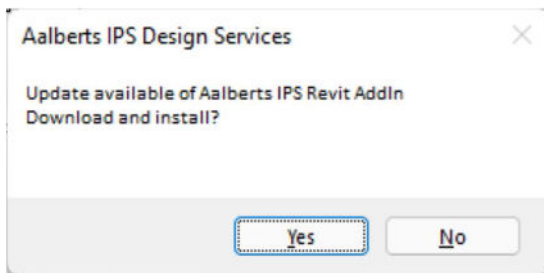
The commands are explained in the following chapters.

automatic updates

When an update of the Revit plug-in is available, an additional command “update available” appears in the toolbar:



Press the button to install the update.



Then close all open Revit windows so that the installation process can be completed.

general commands

General purpose commands and user settings:

- about us
- contact
- online help
- settings

command “about us”

Visit the website of Aalberts-ips.eu

command "contact"

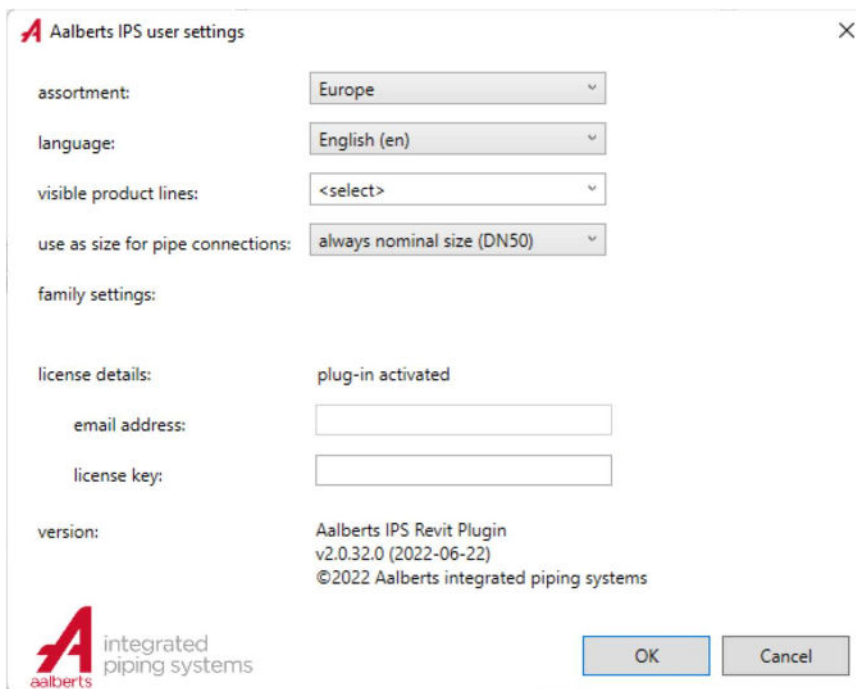
Visit the 'Aalberts IPS design service' page on the website to contact them.

command “online help”

Go to the documentation about the Revit plug-in on the Aalberts IPS website.

command “settings”

Change the user settings of the Revit plugin.



The screenshot shows the 'Aalberts IPS user settings' dialog box. It contains the following fields and options:

- assortment: Europe (dropdown)
- language: English (en) (dropdown)
- visible product lines: <select> (dropdown)
- use as size for pipe connections: always nominal size (DN50) (dropdown)
- family settings: (empty field)
- license details: plug-in activated (text)
- email address: (text input)
- license key: (text input)
- version: Aalberts IPS Revit Plugin v2.0.32.0 (2022-06-22) ©2022 Aalberts integrated piping systems (text)

At the bottom, there is an 'OK' button and a 'Cancel' button. The Aalberts logo is visible in the bottom left corner.

assortment

Select the desired product range.

language

Select the desired language.

visible product lines

By default, all Aalberts IPS product lines are visible. Optionally, groups of product lines can be made invisible here.

use as size for pipe connections

Here you can set how the diameters of pipe connections should be handled in the plug-in:

1. *"always nominal size (DN50)"*

In this case, pipes and pipe connections are always controlled by a nominal diameter (eg 50). This is the default setting, the advantage here is that it is also used within generic pipe types within Revit. These can be more easily converted to an Aalberts IPS pipe type.

2. *"standard outer diameter (54), nominal size for threaded connections (DN50)"*

Here, pipes and standard pipe connections (no thread) are always controlled by means of an outer diameter (eg 54). Threaded pipe connections are controlled by a nominal diameter (eg 50).

3. *"standard outer diameter (54), for threaded connections nominal size converted from inches (50.8)"*

Here, pipes and standard pipe connections (no thread) are always controlled by means of an outside diameter (eg 54). Threaded pipe connections are controlled using a nominal diameter converted from inches (eg 50.8).

Option 2 and 3 only work if the project units are millimetres.

family settings

Depending on the selected range and language, different options can appear.

license details

Indicates whether the license is activated based on the entered license data (email address and license key)

- email address
email address as entered during registration
- license key
entered license key that corresponds to the entered e-mail address (provided by Aalberts IPS via the registration e-mail)

version

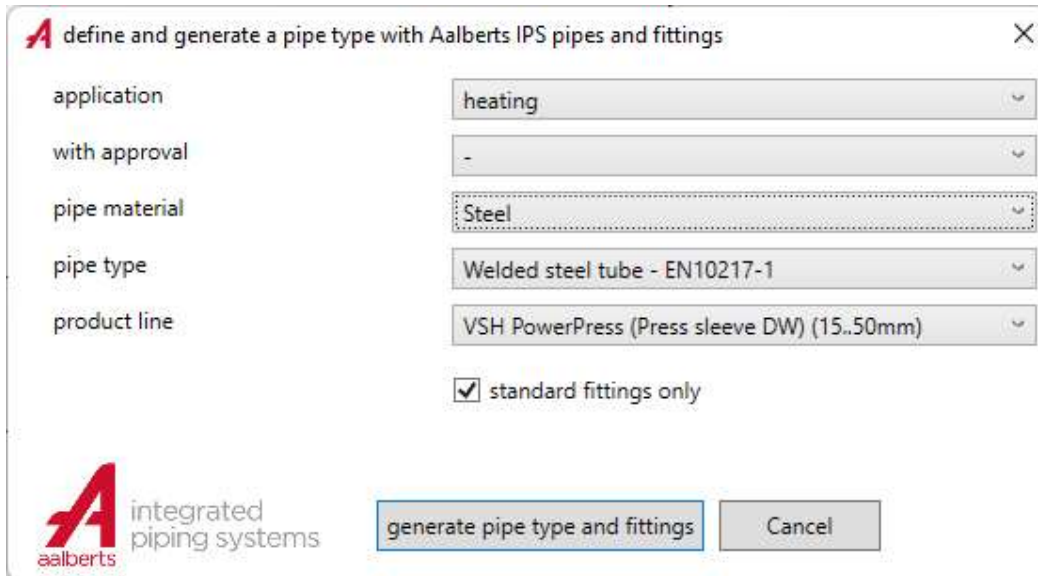
information about the installed version

command “pipe type wizard”

generate an Aalberts IPS Revit pipe type:

- define and generate a Revit pipe type with all associated Aalberts IPS fittings in one step
- optionally filtered by application and approval.
- automatically merged in Revit routing preferences

definition of the Aalberts IPS Revit pipe type



A define and generate a pipe type with Aalberts IPS pipes and fittings

application: heating


with approval: -

pipe material: Steel

pipe type: Welded steel tube - EN10217-1

product line: VSH PowerPress (Press sleeve DW) (15..50mm)

standard fittings only

 generate pipe type and fittings Cancel

This is done by selecting the desired options from top to bottom in the dialog:

application

select the desired application of the piping system. Only product groups that are allowed for this application are applied.

with approval

select an optional approval to determine which approval the fittings should have. Only products that have the selected label are applied.

pipe material

select the desired pipe material. The list of available pipe materials is filtered by the previously made selections in the top rows.

pipe type

select the type of pipe, this can be a pipe type from the Aalberts IPS product range or pipes according to international standards (EN..). The list of available tube types is filtered by the previously made selections in the top rows.

product line

select the corresponding product line. The list of available product lines is filtered by the previously made selections in the top rows.

option “standard fittings only”

If checked, only Revit families for fittings with standard connection types are generated. For example, in the case of a product line with press Fittings, only products with connection type “press sleeve” and “tube end” are loaded, products with connection type “thread” are skipped (multi ports).

It is possible to generate a family of non-standard product afterwards by manually selecting the product group in the command “fittings” (with the same filter settings as application and approval).

button “generate Revit pipe type and fittings”

By pressing this button, the plug-in automatically generates all required Revit families for the fittings, the Revit pipe type with associated pipe routing.

parts of the Aalberts IPS Revit pipe type

Revit families of fittings

Content in the form of Revit families of all necessary fitting product groups of the selected Aalberts IPS product line, optionally filtered by application and approval.

Revit pipe settings “segments and sizes”

The properties of the pipe segments and the inner and outer diameters.

Revit routing preferences

Definition about the automatic pipe routing behaviour of the Revit fitting families in the pipe type.

When all necessary Revit content has been automatically generated, the command is started to draw a pipe with the newly created pipe type.

Comments:

- While generating the Revit families, the progress is displayed in Revit in the lower left corner.
- When the job is started while a fitting/pipe was pre-selected in the Revit model, the product filters are automatically filled in, otherwise the most recently used filters are shown.
- the group generated families of fittings are identical to individually generated families. For more details see: generating a Revit family from single fitting

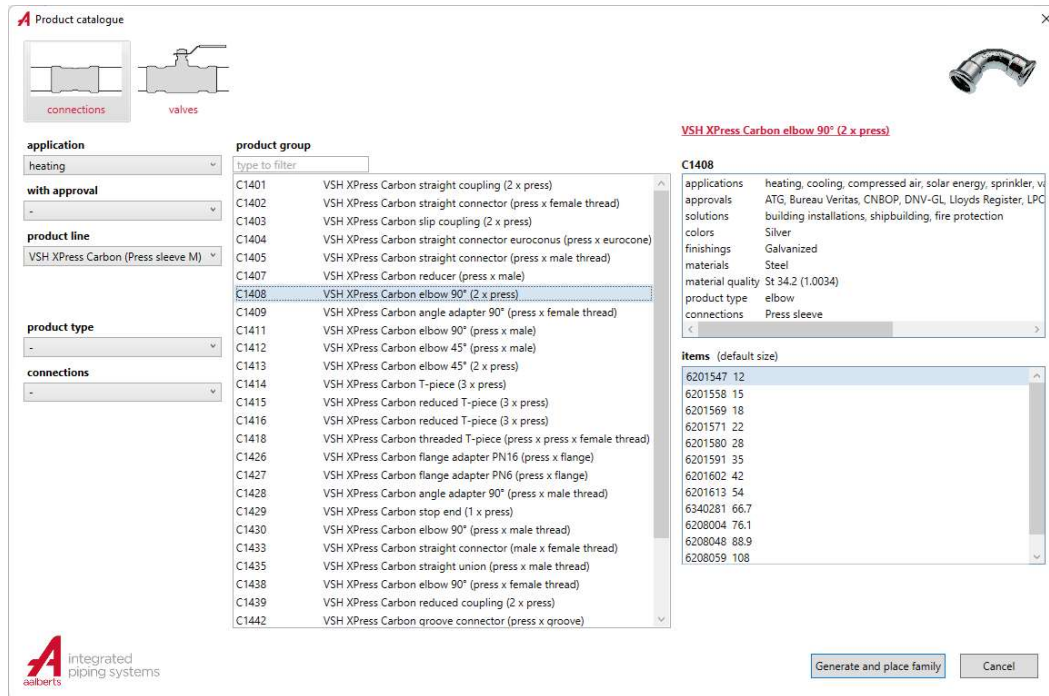
commands “fittings” and “valves”

product catalogue of Aalberts IPS fittings and valves

- define and generate a Revit family from
 - an Aalberts IPS fitting product group
 - an Aalberts IPS valve
- optionally filtered by application and approval
- available Aalberts IPS connection technologies
- naming of the Revit families and family types

select a product group

When the command “fittings” or “valves” is started, the following window appears:



1. Select the desired product group

Product groups can be easily filtered using filters on the left:

- **application:**
select the desired application of the piping system. Only product groups that are allowed for this application are applied.
- **with approval:**

select an optional label to determine which label the fittings should have. The list of available approvals is filtered based on the selected application.

- *product line, product type, connections*
select the desired product line, product type and/or connection. The list of available choices is filtered by the previously made selections in the top rows.

In addition, you can easily filter by product group and/or description in the search bar.

2. When the product group belongs to the main group:

1. *“fittings”*:
all measure variants from the list “items” are automatically included in the family. If necessary, select another size variant that should be used as the standard size. The selected item is the preferred size for situations where the fitting family is placed loosely in the model without connecting it to a pipe.
2. *“valves”*:
in the family a separate “family type” is created for each selected size variant from the “items” list. Select one or more desired size variants using the Control key

generate and place family

To generate a Revit family of single fitting or valve.

With this button the Revit content (family) of an individual Aalberts IPS fitting product group is generated. Optionally filtered by selected application and approval.

When the Revit family is automatically generated, the command is started to place a fitting/valve with the newly created fitting Family.

Comments:

3. With a fitting, all items (size variants) are always included in one family type (filtered by application and approval). The selected item is the preferred size for a situation where the fitting family is placed separately in the model without connecting it to a pipe.
4. Unlike a fitting, a separate “family type” is generated for each size variant for a valve. So for each selected item a family type.
5. While the content is being generated, the progress is displayed in Revit in the lower left corner.
6. When the job is started with a fitting/valve/pipe in the Revit model pre-selected, the product filters will be filled in automatically, otherwise the most recently used filters will be shown.
7. With regard to the generated families of fittings:
 - In some cases, more than one product group is automatically combined into one family type (for example, combining all the different corners of a bend or combining a standard tee and reduced tee).
 - In some cases more than one family is created for a product group (for example a groove coupling as Revit multiport, Revit flange and as Revit union family).

available Aalberts IPS connection technologies

thin-walled pipe:

- VSH XPress (press sleeve M)
- VSH SudoPress (Press sleeve V,M)
- VSH MultiPress (Press sleeve TH/U)
- VSH Super (Compression ring)
- VSH Tectite (Insert, push)
- VSH Ultraline (Slide sleeve)
- VSH Thread (internal/external thread)
- VSH Solder (solder socket)

thick-walled pipe:

- VSH PowerPress (DW press sleeve)
- VSH Shurjoint (groove)

multilayer polyethylene pipes:

- VSH MultiPress (Press sleeve TH/U)
- VSH XPress Sprinkler ML (Press sleeve M)

naming of the Revit families and family types

naming of created families of fittings and valves:

example of pipe fitting product group 7270, VSH XPress Copper straight coupling (2 x press) for drinking water system and with KIWA approval:

- family name: "AIPS_potable water_VSH XPress Copper coupling (union) KIWA_od"
- family type name: "VSH XPress Copper straight coupling (2 x press)_7270"

family name:

- "AIPS" : Aalberts-IPS fitting
- "potable water": selected application
- "VSH XPress Copper": selected product line
- "union": Revit subtype of the family (Part Type)
- "KIWA": selected approval
- "_imp" or "": the value "_imp" is used when the family is generated within a project where the project units are imperial (inches)
- "_od" or "_odn" or "": indicates which size is used as size for pipe connections (see command Settings)
 - "_od": "standard outer diameter (54), for threaded connections nominal size converted from inches (50.8)"
 - "_odn": standard outer diameter (54), for threaded connections nominal size (DN50)"
 - "": always nominal size (DN50)

family type name:

- "VSH XPress Copper": selected product line
- "straight coupling (2x press)": name of selected product group
- "7270": code of selected product group

naming of created Family of a pipe type:

This one is similar to the one above. Example of a pipe type with tube type "Carbon steel VSH SudoXPress C1459 EN10305-3 1.0034 galvanized" and product line "XPress Galvanized steel (12..108mm)" for application "heating" without approval:

- family name: "AIPS_heating_Carbon steel VSH SudoXPress C1459 EN10305-3 1.0034 galvanized od - VSH XPress Galvanized steel (12..108mm)_od"

properties of the Revit families and family types

Revit properties are automatically added to the generated families in the following groups:

- Dimensions: control parameters of the family (diameters, angle)
- Material and Finishes: material and color
- Identity data: general product identification information
- IFC Parameters: data for export to IFC
- General: general data about the content, ETIM classes, connection types...
- Other : geometric properties that determine the shape of the family instance, if a parameter is based on ETIM-MC data, the hint also contains the corresponding ETIM EF code.

Using properties in Tags

In order to use certain properties in a Revit “tag” family it is sometimes necessary to select a “Shared parameter” file. For this, the file “AIPS_SharedParameter.txt” can be selected. This is located within the installation folder of the plugin: “C:\Program Files\Aalberts integrated piping systems\AIPS Revit Add-In\SharedParameter”. This file contains the most important parameters from the Identity data group, such as item_code, GTIN, product_type, item_Description, item_Size...

"tools" commands

pipe manipulation tools:

- cut pipe/set pipe length
- remove pipe
- rotate around pipe

branch generation tools:

- branch to pipe
- branch from pipe

connect elements tools:

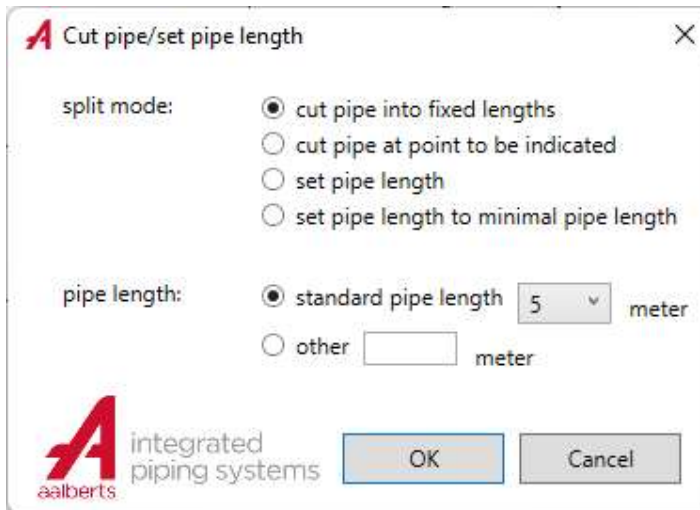
- disconnect
- move & connect
- copy & connect

schedule tools:

- product schedule

command “cut pipe/set pipe length”

Cut a pipe into pieces or set the length of a pipe.



A Cut pipe/set pipe length

split mode:

- cut pipe into fixed lengths
- cut pipe at point to be indicated
- set pipe length
- set pipe length to minimal pipe length

pipe length:

- standard pipe length 5 meter
- other meter

A integrated piping systems

OK Cancel

cut mode

- *cut pipe at point to be indicated*
after pressing the OK button, a point on the pipe must be designated. The pipe is then split into two pieces.
- *cut pipe into fixed lengths*
after pressing the OK button, the pipe is split into a number of pipes of a fixed length according to the pipe length entered.
- *set pipe length*
after pressing the OK button, the pipe length is changed according to the entered pipe length.
- *set the pipe length to the minimum pipe length*
after pressing the OK button, the length of the pipe changes to the minimum required pipe length according to the standards of its product line.

tube length

Choose a fixed standard tube length or enter a length manually

comments

- When the command is started while a pipe in the Revit model was preselected, this pipe is automatically selected in the job, otherwise a pipe must be selected after closing the cut tube window.
- If there is no pre-selected pipe, you can influence which side (beginning or end) of the pipe should be moved. The start/end point of the tube closest to the point where the tube is selected is not moved.
- The order takes into account the minimum required pipe length of the product line of the selected pipe. The last pipe segment will never be shorter than this minimum pipe length. In that case, the penultimate pipe segment is also shortened.
- Finally, another pipe may be repeatedly designated for cutting.

command “remove tube”

Remove the selected pipe, move and connect the fittings.

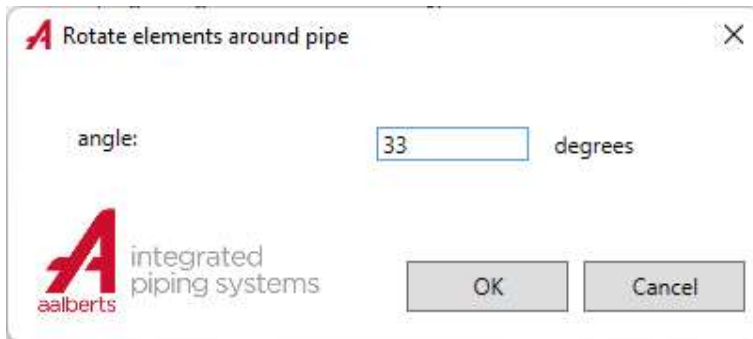
comments:

- When the command is started while a pipe in the Revit model was preselected, this pipe is automatically selected in the job, otherwise a pipe must be selected.
- If there is no pre-selected pipe, you can influence which side (beginning or end) of the pipe should be moved. The start/end point of the tube closest to the point where the pipe is selected is not moved.
- When removing a pipe between two press connections, the command tries to find an alternative pipe-end fitting. If found the question “Alternative fitting found with pipe end. To apply?” is requested. If yes, the fitting is exchanged for a pipe-end fitting. If the answer is no, the pipe is not removed, but the length of the pipe is changed to the minimum pipe length.
- Removing a pipe between two compression or push connection types does not remove the pipe but changes the pipe length to the minimum pipe length.

command “rotate around pipe”

Rotate selected elements around a pipe at a given angle

1. select the elements to rotate (if no elements were preselected)
2. select the pipe to spin.
3. enter angle. Optionally use a negative value to rotate down.



While entering the angle, a preview of the view after rotating is shown.

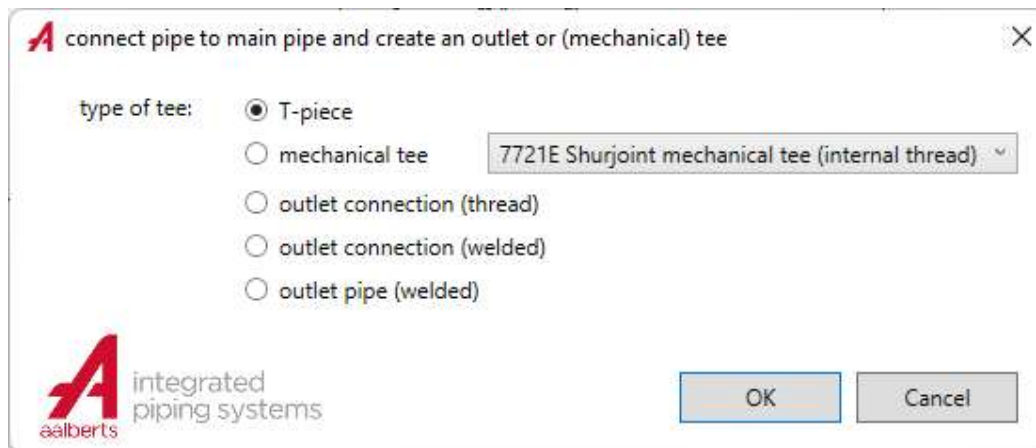
comments:

- When the command is started while elements in the Revit model were preselected, these elements are automatically selected in the assignment, otherwise the elements to be rotated must be selected first.
- It is recommended to pre-select the elements first, because in that case the 'Tab' key can be used to automatically select (a part of) a pipe system.

command "branch to pipe"

This command is mainly made for thick-walled pipe connections. It creates a Revit tee/tap/outlet connection by extending the end of the tube into a T-joint with a main tube.

1. Select the pipe to be extended (if not already pre-selected)
2. Select the pipe with which the T-connection is to be made.
3. Then the dialog appears:



type of tee:

Optionally, the following T-connection can be made:

- T-piece
- mechanical tee (Shurjoint mechanical tee products)
- outlet connection (thread)
- outlet connection (welded)
- outlet pipe (welded)

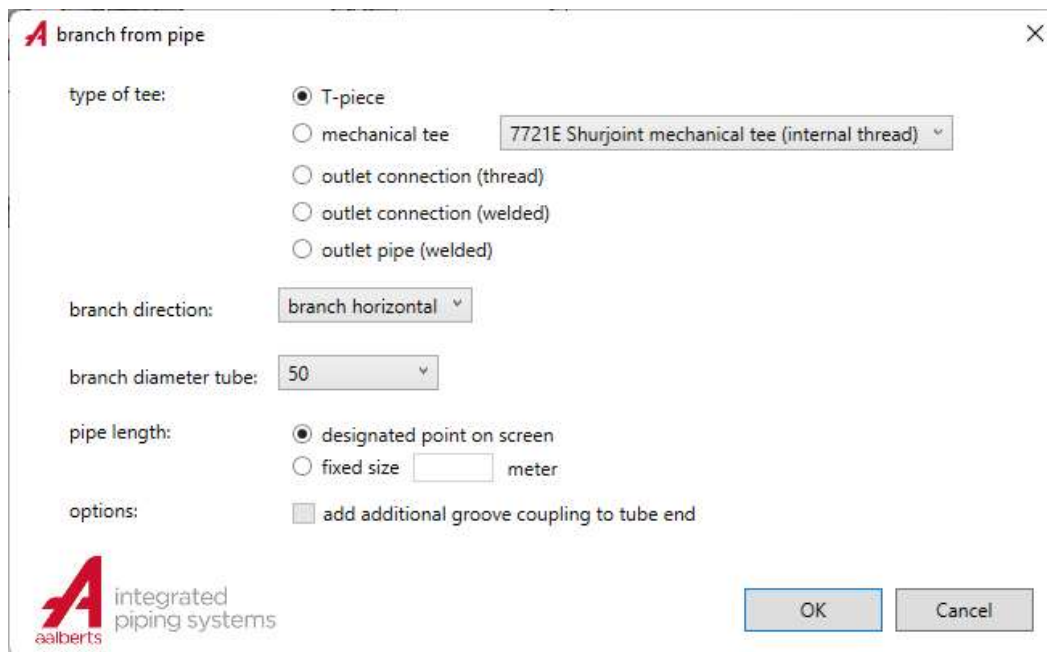
comments:

- When the command is started while a pipe in the Revit model was preselected, this pipe is automatically selected in the job as the pipe to be extended. Otherwise, the tube to be extended must be selected after closing the cut tube window.
- After selecting the pipe to be extended, the pipe must be selected to connect to.
- When the pipes have the same offset, a horizontal connection is created. In other cases, a vertical connection is made with an additional 90-degree bend. In that case, the difference in offset should be sufficient for the size of the T-joint and the size of the bend.
- Finally, another tube can be repeatedly designated to extend.

command "branch from pipe"

This command was created to generate a branch from a main pipe. This branch may also be vertical or skewed (45 degrees). This function simplifies the process of creating a branch from an existing main pipe.

1. Select the main pipe on which the branch is to be made (if not already pre-selected)
2. Indicate a point where the end point of the branch pipe should be.
3. Then the dialog appears:



type of tee:

Optionally, the following T-connection can be made:

- T-piece
- mechanical tee (Shurjoint mechanical tee products)
- outlet connection (thread)
- outlet connection (welded)
- outlet pipe (welded)

branch direction:

Choose the branch direction:

- horizontal branch
- branch first 90 degrees upwards

- branch first 90 degrees downwards
- branch first 45 degrees upwards
- branch first 45 degrees downwards

branch pipe diameter:

select the diameter of the branch pipe

pipe length:

- designated point on the screen
- the branch pipe ends exactly at the designated point.
- fixed size .. meter
- the branch pipe ends at the entered length, measured from the centre of the main pipe.

options:

- add extra groove coupling at pipe end
- select this option to have an extra groove coupling at the end of the branch pipe. This option is only available in case of pipe type with groove couplings.

comments:

- When the command is started while a pipe in the Revit model was preselected, this pipe is automatically selected as the main pipe in the job. Otherwise, the main pipe must be selected first after closing the cut tube window.
- After selecting the main pipe, it is necessary to designate the point where the branch pipe is to end.
- In the case of a non-horizontal branch, the resulting offset height is automatically the result of the size of the possible T-piece, the size of the bend used and the minimum required pipe length according to the standards of the product line between the bend and the T-piece.
- When using a T-piece (so no tapping saddle or outlet) with the use of a bend two Press connections, an alternative bend fitting with pipe end is found. If found the question "Alternative fitting found with pipe end. To apply?" is requested. If the answer is yes, the pipe end bend is used. If answered No, the standard bend with a tube with minimum tube length is used between the bend and the T-piece.
- Finally, another pipe can be repeatedly designated to extend. When using a T-piece (so no tapping saddle or outlet), a main pipe must also be selected first.

command “disconnect”

This can break the connection that Revit has made between a fitting/valve/pipe with another adjacent fitting/valve/pipe.

Select a fitting/valve/tube near the connector (common point) with the other fitting/valve/tube.

comments:

- After breaking the connection, there is no visual change, but when one fitting/valve/pipe is moved, the other adjacent fitting/valve/pipe is no longer automatically moved.

command “move and connect”

Allows a part of an assembly with a fitting/valve/pipe connector at the end to be moved and connected to another free connector (unconnected) of a fitting/valve/pipe in the model. The elements to be moved are automatically moved and rotated in the direction of the selected free connector in the model.

1. Select the elements to move (if not already preselected)
2. Select a connector at the end of the selected elements, which will later be connected to another free connector in the model. This is done by picking a point within the selected elements, as close as possible to this connector.
3. Select a fitting/valve/pipe as close as possible to the free connector to be connected to. This is done by designating a point in the model as close as possible to this connector.

comments:

- When the command is started while elements in the Revit model were preselected, these elements are automatically selected in the command, otherwise the elements to be moved must be selected first.
- It is recommended to pre-select the elements first, because in that case the 'Tab' key can be used to select (a part of) a pipe system.

command “copy and connect”

Allows a part of a system with connector at the end of a fitting/valve/pipe to be copied and connected to another free connector (not connected) of a fitting/valve/pipe in the model. The elements to be copied are automatically copied and rotated in the direction of the selected free connector in the model.

1. Select the elements to be copied (if not already preselected)
2. Select a connector at the end of the selected elements, which will later be connected to another free connector in the model. This is done by picking a point within the selected elements, as close as possible to this connector.
3. Select a fitting/valve/tube as close as possible to the free connector to be connected to. This is done by designating a point in the model as close as possible to this connector.

This last step can be applied iteratively so that the selected elements can be copied multiple times.

comments:

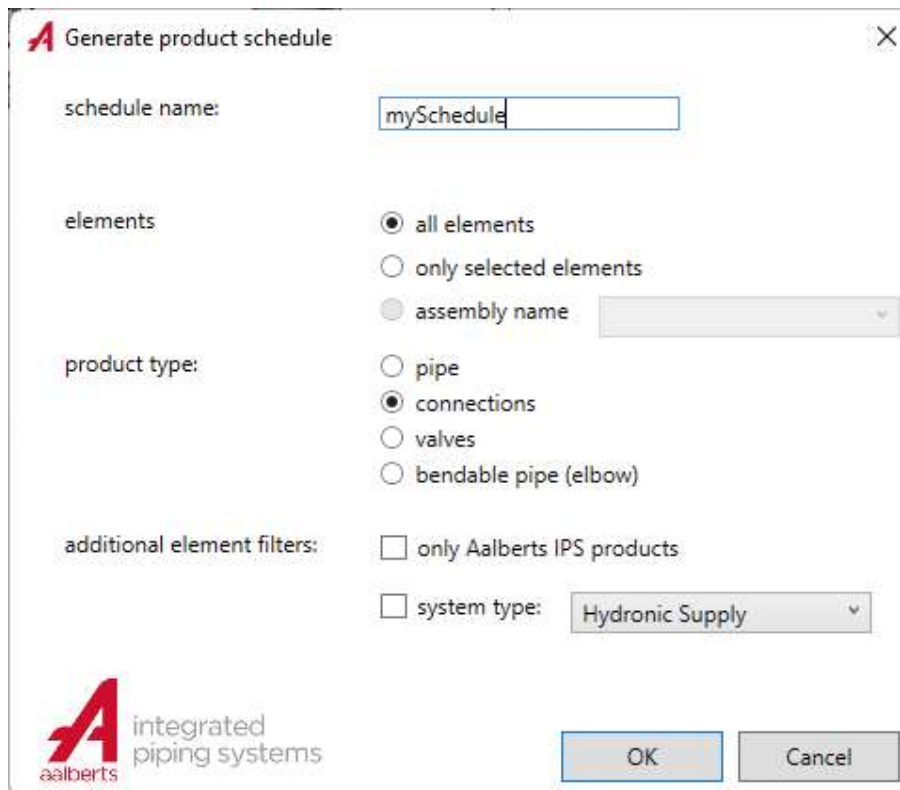
- When the command is started while elements in the Revit model were preselected, these elements are automatically selected in the command, otherwise the elements to be moved must be selected first.
- It is recommended to pre-select the elements first, because in that case the 'Tab' key can be used to select (a part of) a pipe system.

"schedules" commands

Product schedule: create a Revit schedule (counting list) of used Aalberts IPS products.

command "product schedule"

Make a Revit schedule (counting list) of used Aalberts IPS products. The following dialog appears:



schedule name

enter the name of the schedule. The schedule name must not yet exist.

elements

select the range of the schedule

- all elements
scope is all elements in this model
- only selected elements

scope are all selected elements in this model. If no elements were preselected when the job was started, they must first be selected after pressing the OK button.

- assembly name
scope is a Revit assembly. Select the assembly name from the drop-down list. If the command is started with a preselected assembly, it is automatically selected.

product type

There are 4 types of schedules. Select the desired scheme type:

- tube: Revit pipes
- fittings: Revit pipe fittings
- valves: Revit-pipe accessories
- bendable pipe (elbow): Revit bendable pipe (its length)

additional element filters:

- only Aalberts IPS products
If this option is selected, only products from Aalberts-ips will be shown.
- system type
If this option is selected, only products with the selected system type are added to the schedule, other elements are skipped.

comments:

- the bendable tube is counted as length. However, since it is also a Revit Pipe Fitting, it will automatically become