

CADvent plugin for Revit Manual - v2.1

Contents

| General | 2 |
|------------------------------|--|
| Installation and setup | 2 |
| Prerequisites | 4 |
| Ribbon Menu | 5 |
| Duct Series | 5 |
| Update Model function | 8 |
| lindQST Terminal | 8 |
| lindQST silencer function | 9 |
| Bends to Offset | 11 |
| Link to LindQST project | 12 |
| CADvent Properties | 16 |
| Edit Flanges | 16 |
| Manage Ducts | 18 |
| Model Checker | 19 |
| Bill of Materials | 19 |
| Webshop Upload | 23 |
| TEKNOsim export | |
| MagiCAD template and Dataset | |
| Production Model Updater | 32 |
| Split segments function | 34 |
| | Installation and setup Prerequisites Ribbon Menu Duct Series Update Model function lindQST Terminal lindQST silencer function Bends to Offset Link to LindQST project CADvent Properties Edit Flanges Manage Ducts Model Checker Bill of Materials Webshop Upload TEKNOsim export MagiCAD template and Dataset Production Model Updater |





1 General

All features in CADvent plugin works on Revit without any additional application. However, it is also possible to use Duct Series created with MagiCAD for Revit.

2 Installation and setup

You need to download the CADvent plugin for Revit for Revit installation file from:

http://itsolution.lindab.com/downloads/cadventplugin/latest/CADventPluginSetup.exe

Double click on the EXE file to start the installation. Please note that you need to have local administrator rights to start the installation. If the User Account Control for Windows is activated on your computer, please click the "Yes" button to proceed with the installation if invoked.

The installation dialog will guide you through the installation process:



Please read the license agreement carefully. You must accept the agreement to continue with the installation:





| End-User License Agreement | | |
|---|---|-------------------|
| Please read the following license | agreement carefully | |
| | | |
| END-USER LICENS | | OR LINDAB |
| | SOFTWARE | |
| | | |
| READ CAREFULLY: This End agreement between you entity) and Lindab AB or a | (either an individual | or a single legal |
| agreement between you | (either an individual ny other company with | or a single legal |
| agreement between you entity) and Lindab AB or a | (either an individual ny other company with nse Agreement | or a single legal |
| agreement between you entity) and Lindab AB or a | (either an individual ny other company with nse Agreement | or a single legal |

Select then the market area you want to be supported in the plug-in:

| farket Dialog Please select the market you are inte | rested in |
|--|------------------|
| O Belgium | () Latvia |
| O Bulgaria | O Lithuania |
| O Czech republic | O Norway |
| ○ Denmark | O Poland |
| 🔘 Estonia | O Portugal |
| ◯ Finland | 🔘 Romania |
| O France | 🔘 Russia |
| ◯ Germany | Sweden |
| O Hungary | O Switzerland |
| ◯ Ireland | 🔘 United Kingdom |
| ◯ Italy | |
| anced Installer | |

Push the "Next" button to go to the next dialog where the installation place on your computer is shown and then continue to start the installation. The installation ends with the final dialog that shows the completion of the installation:



×



| Completing the CADvent Plugin Setup Wizard |
|---|
| Click the "Finish" button to exit the Setup Wizard. |
| |
| |

Now the setup is completed. The CADvent plugin for Revit requires no separate license.

3 Prerequisites

CADvent plugin runs on Autodesk Revit. All commands to create and manage CADvent Duct Series are included. No other application is required.

To create and use Duct Series with MagiCAD please see the last chapter in this document. MagiCAD for Revit requires a separate license from <u>www.magicad.com</u>.





4 Ribbon Menu

The CADvent tab contains the CADvent commands



4.1 Duct Series

The Duct Series function allows the user to add Lindab Safe or Rectangular fitting families to the Revit project and use them for the ductwork design.

When pushing the Duct Series button the user will get a dialog to add the Lindab Safe or Rectangular Duct Series to Revit:

| | Duct Serie | |
|--------------|-------------|--|
| | Safe | |
| \checkmark | Rectangular | |
| | | |
| | | |
| | | |

On "OK" the families will be loaded and, if necessary, upgraded to the current version of Revit in use:

Loading Duct Serie Lindab Safe

Please note that the Lindab families are designed in Revit 2017, hence this is the oldest version of Revit which can be used with the Lindab Revit families.

When all families have been generated into Revit, they are available under the Duct Fitting family type:



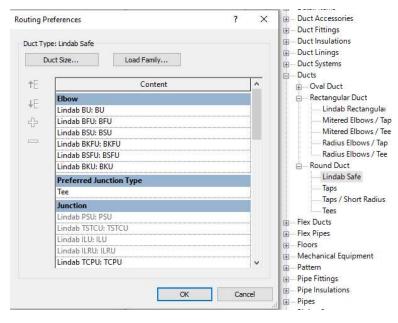


- Duct Fittings
 - 🗄 ---- Lindab BFU
 - 🗄 ---- Lindab BKFU
 - Lindab BKU
 - Lindab BSFU
 - ± Lindab BSU
 - im Lindab BU
 - Lindab EPFH
 - E---- Lindab ESHU
 - E Lindab ESU
 - Lindab ILF
 - E Lindab ILRU
 - indab ILU
 - Lindab MF
 - E Lindab NPU
 - E Lindab PSU
 - ⊥indab RCFU
 ⊥indab RCFU
 ⊥indab RCLU

 - Lindab RU
 - Lindab SMFU
 - ⊥ Lindab SNPU
 - Lindab TCPU
 - E---- Lindab TCU
 - Lindab TSTCU
 - E- Lindab TU
 - Lindab TVU45
 - Lindab XCPU
 - indab XCU
 - i Lindab XU



Routing preferences are set automatically in the Duct system family for Lindab Safe or Rectangular ducts:



| Lindal TCPU | ь тсри 🚽 |
|----------------------|----------------|
| Duct Fittings (1) | 🗸 🔓 Edit Type |
| Constraints | \$ |
| Level | Level 1 |
| Elevation from Lev | /el 3000.0 |
| Graphics | \$ |
| Use Annotation Sc | ale 🗸 |
| Materials and Finish | nes 🎗 |
| DF_Material1 | DF_Material1 |
| Dimensions | \$ |
| D1 | 315.0 |
| D1Half | 157.5 |
| D3 | 200.0 |
| D3Half | 100.0 |
| DimL2Def | 182.0 |
| FAB | |
| L1 | 306.0 |
| L1Def | 306.0 |
| L2 | 182.0 |
| R | 0.0 |
| Size | 315ø-315ø-200ø |
| Mechanical | \$ |
| CV_R1 | 157.5 |

Use standard Revit functionality to draw ductwork while having the Duct Type Lindab Safe or Rectangular selected. Make sure that the duct size you are using exists for ducts and fittings depending on the Lindab market. Sizes in Revit are shared for the whole project. They are not assigned to a specific Duct Type.

If the Dimension property FAB for a Lindab fitting is checked it means that the size for that fitting is valid and can be fabricated.





4.2 Update Model function

The Update Model command will replace fitting products when needed to match size and connection rules. This way you can get the correct dimensions in Revit for the different duct fittings as well as the correct connection types (Male/Female) which aren't managed by standard Revit functionality.

Please note that the design of the duct fitting might not be exactly as in reality, important are though the outer dimensions like lengths, diameters and angle.

Use the Model Checker function to check for any issues and fix them with the Update Model function.

4.3 lindQST Terminal

This function opens LindQST and the user can select or calculate air diffusors and chilled beams and transfer the products into the Revit project by pressing Export to Revit.

| Login Sign up Settir | ngs Untitled p | project | | | | | | | | | | C Lindab |
|--|--------------------|----------------------|----------------|--------------|-----------------------|----------------------|-------------------|----------------------|---------------------|-------------------|------------|----------------------|
| lindQST - Start | Documentation | Downloads Nev | rs Support | | | | | find (| products, documents | se Q | Global | • Q |
| lindQST / Airborne Calculate | or | | | | | | | | | | | |
| Product category | | VAV diffusers | | | T | LCPV-160+MBB- | 100-160-S | | | | | |
| Product name | | LCPV | • | Q Rese | | 🖾 Generate PDF | Generate DXF | Visualize | + Add to project | Expo | t to Revit | |
| Duct connection size | | 100 | | | • | LCPV-160+MBB-10 | 10 160 S successf | ully exported | | | | |
| Function | | Supply | | | | ECH V- TOO HMBB-TO | 10-100-0 Successi | uny exporteu. | | | | |
| Plenum box | | Yes | | | • | Product information | Results | | | | | |
| Working setup | | 4-way | | | • | Face velocity | | v 0.0 | | | | m/s |
| Article name | | LCPV-160+ME | B-100-160-S | | • | Total pressure loss | | Δpt 51 | | | | Pa |
| Air volume | q _v | 35 | | l/s • | | Sound power level | | L _{wA} 36 | | | | dB(A) |
| Room attenuation | Dr | 4 | | | dB | Sound pressure level | | L _{pA} 32 | | | | dB(A) |
| Adjustment pressure | Δр | 0 | | | Pa | Throw | | L _{0.2} 1.6 | | | | m |
| Description | | | | | | | | 1.0 | | | | |
| | | Galculate | | | | Pressure and sou | nd power diagra | m | | | | ^ |
| * = these criterias must be o | completed | | | | | 250 200 - | | | - | - | X | 55 dB |
| Note: All technical datas are | e for 1 diffuser | | | | | 150 - | | 4 | | $\langle \rangle$ | X | |
| Note: Results for grilles with page for other settings. | i damper option ar | e for open damper. P | ease use the c | orrection fa | tors in the catalogue | | 2 | | | 3 | CEIAI 40 | 50 dB 45 dB dB |

The product will also be added to the MagiCAD Dataset in Revit if MagiCAD is installed:

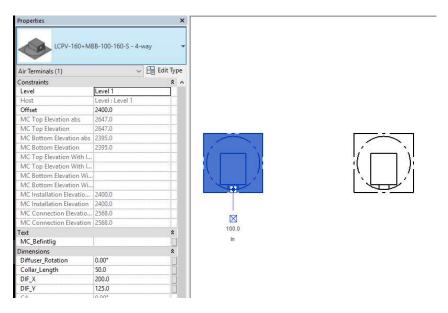




| General Propert | es | Air flow arrow | 2D symbol |
|--|--------------------------------|----------------|-----------|
| User code: | SD-12 | | |
| Description: | | | |
| Manufacturer: | Lindab | | |
| Product: | LCPV-160+MBB-100-160-S - 4-way | | |
| National code: | | 2D Symbol | 2D Symbol |
| Product variable | s | | Remove |
| Pv-1: | | Product | |
| Pv-2: | | | |
| Pv-3: | | | |
| | | | |
| Pv-4: | | | |
| | | | |
| Pv-5: | | | |
| Pv-4: Pv-5: Defaults Device installatio | an level: 2400 | | |
| Pv-5: Defaults | on level: 2400 | | |
| Pv-5: Defaults Device installatio | | | |
| Pv-5: Defaults | | | |

Place the product then one or multiple times into Revit. Settings like the selected airflow are added to the product properties in Revit:

Rotate the product during the placement with "Space" bar.



4.4 lindQST silencer function

Use the lindQST silencer function and select the duct in which you want to place the silencer. A browser window will pop up.

Make the 3 Step selection and calculate your silencer. Change the parameters if you like.

Press finally Export to Revit. A green text field will inform you about the succeeded data transfer.

Press Continue in the bottom right corner of the browser window to finalize the transfer.

NOTE: You can calculate the branch or network before using the silencer function for lindQST, then the sound data will be transferred as well.





| lindQST - Start Documentation | Downloads News Support | find products, document |
|-------------------------------|------------------------|--|
| indQST / Silencer Calculator | | |
| 1 | 2 | KVAP-250-600-0 |
| ∠ 3 4 | 4 | Generate PDF Generate DXF + Add to project Export to R |
| System | Extract | KVAP-250-600-0 successfully exported. |
| Placement | Before fan 🔹 | Product information Results |
| an | Not selected • | Total pressure loss 9 |
| w before 63 125 250 500 | 1K 2K 4K 8K | Face velocity 5.1 |
| 0 0 0 0 | 0 0 0 0 | 63 125 250 500 1K 2K 4K 8K dB(A) N |
| | | Lw before 0 0 0 0 0 0 0 0 7 8 |
| Duct type | Circular 🔹 | Insertion loss 7 6 13 19 25 28 19 13 |
| ilencer type | Straight • | Self-generated noise 🚱 26 26 25 24 23 22 17 12 28 24 |
| roduct name | KVAP v Q Reset | Lw after 26 26 25 24 23 22 17 12 28 24 |
| ouct connection size | 250 • mm | dB dB dB dB dB dB dB dB dB(A) N |
| ength | 600 * mm | |
| | | |
| Design option | 0 * | |

Add the silencer to the MagiCAD Dataset and place it then into the ductwork:

| General Propertie | 25 | 2D Symbol |
|-------------------|----------------|-----------|
| lser code: | SL10 | |
| escription: | | |
| lanufacturer: | Lindab | |
| roduct: | KVAp-250-600-0 | |
| lational code: | | |
| roduct variables | 1 | Select |
| v-1: | | Product |
| v-2: | | |
| v-3: | | |
| v-4: | | |
| v-5: | | |
| efaults | | |
| evice installatio | n level: 0 | mm |
| | | |
| FA in Revit proj | ect | |
| | KVAp-250-600-0 | |
| FA name: | | |





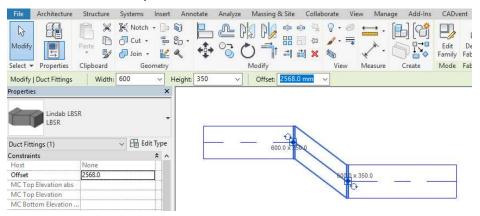
| Properties | | × |
|--|-----------------|-----------|
| KVAp-250-1 KVAp-250-1 Duct Accessories (1) | | Edit Type |
| onstraints | | * ^ |
| Level | Level 1 | |
| Host | Level : Level 1 | |
| Offset | 2568.0 | |
| MC Top Elevation abs | 2719.5 | |
| MC Top Elevation | 2719.5 | |
| MC Bottom Elevation | 2416.5 | |
| MC Bottom Elevation | 2416.5 | |
| | | |

4.5 Bends to Offset

This function creates a rectangular Offset from two bends and a short piece of duct. Just select one the two bends and press the "Bends to Offset" button:

| File Architecture | e Structure | Systems | Insert | Annotate | Analyze | Massing & Sit | e Collaborate | View | Manage | Add-Ins | CADven |
|--|--------------|------------|----------|------------|---------|---------------|--------------------|--------|--------|---------|--------|
| | | 10 | | | | | T | | | | |
| | | luction | | | | | TEKNOsim | | | | |
| and the second sec | | Updater Se | gments | C | | erials Upload | Export | | | | |
| Products | Ma | giCAD | | | Co | mmon | | | | | |
| Modify Duct Fitting | s Width | : 600 | ~ H | eight: 350 | ~ | Offset: 256 | 8.0 mm 🗸 | | | | |
| Properties | | | × | | | | | | | | |
| Lindab L LBXR | BXR | | • | 1 | | | + | | | | |
| Duct Fittings (1) | | ~ 🛱 Ec | dit Type | | | 600.0 × | | | | | |
| Constraints | | | * ^ | | | 000.0 / | 600.0 x 350.0 | | | | |
| Level | Level 1 | | | | | | $\langle \rangle$ | \sim | | | |
| Host | Level : Leve | el 1 | | | | | \setminus \vee | | | | |
| Offset | 2568.0 | | | | | | \sim | | | | |
| MC Top Elevation ab | s | | | | | | | 3 I. | | | |
| MC Top Elevation | | | | | | | | | | | |

This will convert the 3 products into 1 Offset:







4.6 Link to LindQST project

With this function the user can transfer Revit MEP-Spaces to LindQST and create all levels and rooms to LindQST.

When clicking the function you will be asked to sign into LindQST with your account details:

| IindQSTL | ogin | |
|----------|-------------------------|---|
| User | kai.bingstrom@gmail.com | _ |
| Password | | |
| | Forgot your password? | |
| | Register New User | |
| ок | Cancel | |

A new dialog will open where you have the following functions:

- Change user
- Select or add a new LindQST project
- Select or add a new floor to the selected project
- Upload Spaces to LindQST

| kai.bingstrom@gmail.com | | Change User | |
|-------------------------|-----------|------------------|---|
| | | ↓Date | |
| Project | 라 | Test2 | Ŷ |
| Floor | 42 | 1.floor | ~ |
| ^ | Upload Sp | aces | |
| | | Check/Uncheck al | 1 |
| | | | |





When crating a new project you don't necessarily to add a floor. These can be included to the export from Revit:

| 🔘 Add Project | × |
|------------------|----------------------|
| New Project Name | Test_Project_2201017 |
| Create Floor | Floor 1 |
| ОК | Cancel |

When uploading the project you will be asked which floors you want to upload:

| Levels & Spaces Spaces | | |
|---|--|--|
| 2. floor: 31 spaces | | |
| 3. floor: 12 spaces Parking: 3 spaces | | |
| 1. floor: 36 spaces | | |
| 4. floor: 0 spaces | | |

When selecting Floor export it is possible to select which floors and spaces to be exported and to which existing floor in LindQST:

| 🔘 Uploa | ad Spaces | | | | _ | | × |
|---|---|---|----|------------|---|--------|---|
| Levels & | Spaces Spaces | | | | _ | | |
| Offic Offic Offic Offic Offic Meet | 2. floor 2. floor 3. floor 9 Parking 4. floor 4. floor 210 211 ing Room 220 | ~ | => | Test Floor | | | |
| Offic Offic Offic Offic Offic Offic Offic Offic Offic | e 224 e 225 e 226 e 223 e 214 e 227 e 215 e 215 e 222 e 221 | | | | | | |
| Offic | e 217 e 216 | | | | | Cancel | |

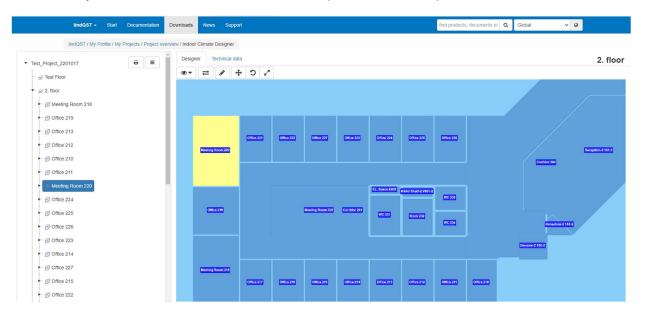




After executing the export the available uploaded spaces will be visible in dialog in CADvent plugin and your default web bbrowser will open with LindQST:

| kai.bingstrom@gmail.com | | Change Us | er |
|--|-----------|---------------------|---------|
| | | ↓Date | |
| Project | 라 | Test_Project_220101 | 7 ~ |
| Floor | 42 | 1.floor | > |
| | Upload Sp | aces | |
| | | Check/Unch | eck all |
| Meeting Room 135 WC 139 WC 138 | | | 1 |
| EL. Space E001 | | | |

In LindQST you will then be able to see floors and spaces that were uploaded and created:



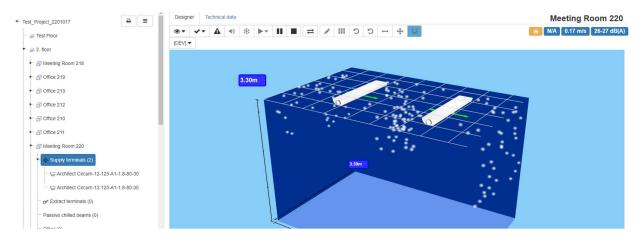




Besides the geometry the values for required supply and extract airflows are exported as well if available in Revit:

| lindQST / My Profile / My P | rojects / Project overview / Indoor Climate Designer | | | | | | | |
|-----------------------------|--|--------------|-------------------|------|-----|-------------------------------|------------------|----------|
| - | Designer Technical data | | | | | | | |
| ► 🔗 Office 211 | General Geometry | Dimension cr | riterias Occupied | zone | | Area | A _r | Required |
| Ge Meeting Room 220 | Supply air volume | qa | 95 | ÷ | l/s | Volume | Vr | |
| Supply terminals (0) | Extract air volume | qa | 63 |]÷ | l/s | Temperature difference | Δt_{ra} | |
| | Function | | Cooling | | ~ | Sound pressure level | L _{pA} | 35 |
| Passive chilled beams (0) | Outdoor air CO ₂ concentration | | 400 | | ppm | Total supply air volume | qa | 95 |
| - Other (0) | CO ₂ activity | | Sitting, resting | | * | Total exhaust air volume | qa | 63 |
| - Wiring (0) | Number of persons in room | | 1 | | | Velocity | Vaj | 0 |
| ► 🗇 Office 224 | CO ₂ per person | | 17 | | l/h | Cooling | | |
| ► 🔗 Office 225 | Threshold value | | 1000 | | ppm | Supplied thermal power | P | 0 |
| ► Ø Office 226 | Air change per hour | | 3 | | h-1 | Supplied thermal power / area | P/A _r | |

Now you find, configure and calculate Lindab air terminals and chilled beams and simulate them in LindQST:



You can use the <u>LindQST MagiCAD</u> plugin to download the products from LindQST and insert them into Revit.





4.7 CADvent Properties

In the CADvent Properties the user can view and adjust settings for material, webshop upload and the Product Approximation. The approximation function interprets certain products if the Production Model can't be applied. In that case the Revit object will be substituted by a real Lindab product, including product code so that it can be ordered while the representation in Revit might not be accurate.

| Misc | | _ |
|-------------------------------|------------|---|
| Misc Material | Galvanized | |
| Webshop Uploaded | False | |
| Disable Product Approximation | True | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

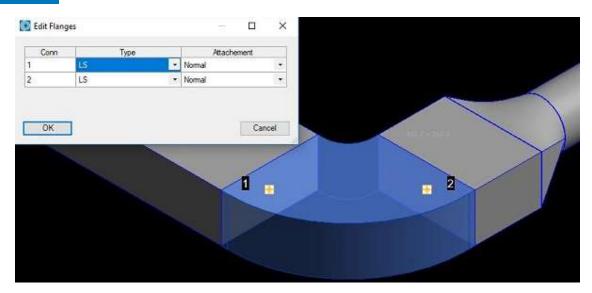
4.8 Edit Flanges



Select a single rectangular duct to show the current connection of flanges. In the dropdowns you can choose the type and attachment options.











4.9 Manage Ducts

The Manage Ducts function allows you to cut ducts into standard lengths, set flange type and insert connectors automatically.

| | Duct cut length | 3000 | | ~ |
|------------|------------------------|----------|---------|-------|
| () | Duct to duct couplings | ◯ Insert |) Erase | Leave |
| Rectangula | r. | | | |
| | Duct cut length | 1250 | | ~ |
| | Couplings | ◯ Insert | ⊖ Erase | Leave |
| | Assign flange type | LS | | ~ |

In the Round Selection you can set parameters to insert duct to duct and fitting to fitting couplings and select a standard length to cut round ducts into standard lengths. You can select a market dependent standard length or manually type a standard length.

The buttons Insert, Erase and Leave define whether you want to cut or re-cut the ducts (Insert), whether you want to remove existing duct cutting (Erase) or you want to leave the round duct cutting as is, f. ex. if you want to change only the rectangular settings.

In the Rectangular selection you have similar functions for duct cutting and insertion of flange types as in the round selection. In addition you also have a selection of market specific flange types and a check button to assign the selected flange type to the rectangular ductwork.

Now you can select the products to be cut by dragging a window or press right mouse click or Return/Enter to select all products in the drawing.

| | 73 | | | | |
|--|----|--|--|--|--|

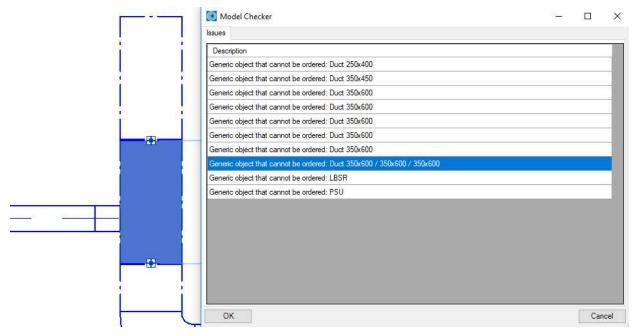
Round and rectangular ducts with inserted flanges and connectors





4.10 Model Checker

This function selects objects and checks whether they are OK to order. The list shows all objects that are not OK to order. By double-clicking on the product in each line the selected product is moved into focus in the current Revit View to be able to find the related products:



4.11 Bill of Materials

The Bill of Material function creates a material list for the selected ventilation products.

BoM has following settings:

| Project | | |
|---------------------------------|------------|-----------|
| Floor | | |
| Date | 31.10.2018 | |
| Show piece labels | | |
| Cut all ducts to drawing length | Standard C | ut Length |
| Separate InCapsa Systems | | |
| | | |
| Excel report (Requires Microso | ft Excel) | |
| | | |

Project: Enter the name of the project if you want to show it on the printouts





| Floor: | Add the description of the floor that you want to show on the printouts |
|---|---|
| Date: | Sets the current date by default |
| Show piece labels: | Check this button if you want the BoM to divide each product that has a unique piece label |
| Cut all ducts to drawing lengths: | This will list all ducts with the individual length, as designed in the Revit project. Otherwise all ducts length will be summed up an listed in standard length. |
| Standard cut lengths: | Adjusts the standard Lindab cut length according to user standards |
| In-Capsa system: | Not yet used for CADvent plugin for Revit |
| Excel report | Exports the current selection and format to Microsoft Excel |

When you are finished with setup for the Bill-of-Materials you can push the OK button to get to the selection to select the objects that should be included in the BoM-report:

| Object Selection | | <u>20</u> 2 | | × |
|---|------------------------------------|-------------|-----|-----|
| Range | Systems | | | |
| O Select objects | Supply 1 | | | 1 |
| Ourrent View | Extract 1 Mechanical Outd | | | |
| Selected objects | Mechanical Exha Mechanical Supp | | | |
| O Selected levels | Undefinied | | | |
| 2. floor 3. floor Parking 1. floor 4. floor | | | | |
| | | | | - C |
| | | | | |
| ОК | | | Can | cel |
| | | | | |

The Model Checker function will automatically check if the selected objects have any deviations from the standard and addresses in a table as shown below:





| 🔘 Model Checker | 8 <u>—</u> 8 | | × |
|---|--------------|-----|-----|
| Issues | | | |
| Description | | | ^ |
| Duct length 4279 is longer than cut length 3000 | | | |
| Duct length 5222 is longer than cut length 3000 | | | |
| Generic object that cannot be ordered: Duct 300x400 | | | |
| Generic object that cannot be ordered: Duct 300x400 | | | |
| Generic object that cannot be ordered: Duct 300x400 | | | |
| Generic object that cannot be ordered: LBXR | | | |
| Generic object that cannot be ordered I BXR | | | ~ |
| ОК | | Can | cel |

When pushing the OK button 2 dialogs will be opened. One dialog for the circular duct system components and technical products like diffusers, silencers and dampers and one dialog to show the rectangular ductwork:

| | specification | | CADventplug-in 1.19. |
|------------------------------------|-----------------|----------|----------------------|
| Projekt | | rojekt | |
| Del | Entre | | |
| Datum | 31.1 | .2018 | |
| Typ / Tillverkare / Material | Produkt | Pos. nr. | Antal |
| Lindab | | | |
| Galvanized | | | |
| | LCA-125 | | 2 |
| | MBB-125-125-E | | 2 |
| | NS19-H-S-2-125 | 4-way | 2 |
| Lindab | | | |
| Galvanized | | | |
| | SLCU 125 600 50 | | 1 |
| | SLCU 125 900 50 | | 1 |



lindab | we simplify construction



| | | | Projek | t | | Test | projekt | | | | | | |
|------------|--------------|-------|--------|-----|------|------|-----------|----|----|---------|---------|---------|------------------------|
| Antorialor | adification | | Del | | | | éplan | | | | | | CADvent plug-in 1.19.1 |
| naterialsp | pecification | | Datum | ı | | 31.1 | 0.2018 | | | | | | |
| Galvanized | | | | | | | | | | | | | |
| LKR | Pos. nr. | Antal | A | В | L | | | | | fläns 1 | fläns 2 | fläns 3 | |
| | | 1 | 600 | 400 | 1019 | | | | | LS | LS | | |
| | | 1 | 600 | 400 | 1042 | | | | | LS | LS | | |
| | | 2 | 600 | 400 | 1250 | | | | | LS | LS | LS | |
| | | 14 | 600 | 400 | 1250 | | | | | LS | LS | | |
| | | 1 | 600 | 400 | 249 | | | | | LS | LS | | |
| | | 1 | 600 | 400 | 495 | | | | | LS | LS | | |
| | | 1 | 600 | 400 | 749 | | | | | LS | LS | | |
| | | 1 | 600 | 400 | 969 | | | | | LS | LS | | |
| | | | | | | | | | | | | | |
| LBSR | Pos. nr. | Antal | A | в | С | E | L | | | fläns 1 | fläns 2 | fläns 3 | |
| | | 1 | 600 | 400 | 600 | 518 | 1100 | | | LS | LS | | |
| | | | | | | | | | | | | | |
| LBXR | Pos. nr. | Antal | A1 | A2 | В | R | ANGL E | L1 | L2 | fläns 1 | fläns 2 | fläns 3 | |
| | | 2 | 600 | 600 | 400 | 100 | 45 | 25 | 25 | LS | LS | | |
| | | 1 | 600 | 600 | 400 | 100 | 90 | 25 | 25 | LS | LS | | |
| | | | | | | | | | | | | | |
| LEPR | Pos. nr. | Antal | Α | В | L | | | | | fläns 1 | fläns 2 | fläns 3 | |
| | | 1 | 600 | 400 | 0 | | | | | LS | | | |





4.12 Webshop Upload

The webshop upload allows the user to collect and upload products to the Lindab webshop.

NOTE: The webshop is available in specific markets, for more information please contact your local representative.

When pushing the webshop button, the user is prompted to select the range of products to upload:

| Object Selection | | <u>200</u> 7 | | × |
|---|--|--|-----|-----|
| Range Select objects Current View Selected objects Selected levels 1 - Entry Level 2 - Roor 03 - Roor Roof Parapet | Systems Mechanical Supply A Mechanical Supply A Mechanical Supply A Mechanical Supply A Mechanical Supply A Mechanical Return A Mechanical Return A Undefinied | ir 4 ir 3 ir 5 ir 6 ir 1 ir 1 | | |
| ОК | | | Can | cel |

Just in the BoM function, the products to be uploaded will be checked for compatibility with the Model Checker:

| 🔘 Model Checker | а <u>т</u> а [| o x |
|---------------------------------|----------------|--------|
| Issues | | |
| Description | | ^ |
| Approximated product: BU-125-15 | | |
| Approximated product: BU-125-15 | | |
| Approximated product: BU-125-15 | | 2°- |
| Approximated product: BU-125-60 | | |
| Approximated product: BU-200-45 | | |
| Approximated product: BU-200-45 | | |
| Approximated product: BU-250-15 | | 2.5 |
| Approximated product: BU-250-60 | | ~ |
| ОК | | Cancel |

In the next step the user will be shown whether there have already products been uploaded and will give alternatives as shown below to upload only the remaining products or to upload all products, including those that have already been uploaded once:





| 🔘 Webshop Upload Scope | × |
|--|---|
| 145 parts of total 204 parts have already been uploaded. | |
| Select upload scope: | |
| Additional - Upload only parts that have not been uploaded already | |
| Everything - Upload all including previously uploaded parts | |
| Cancel | |

After selecting which the upload function the actual connection to the webshop will be opened:

| Jser | | | |
|---------------------|--|---|-----|
| Username | @lindab.se | | |
| Password | | | |
| | Connect | | |
| roiect | | | |
| Project Customer | Lindab Demokund | ~ | |
| | Lindab Demokund CVplugin Test Revit | ~ | Add |
| Customer | | ~ | Add |
| Customer Project | CVplugin Test Revit | ~ | Add |

- Username: Enter your or your company's user name for the Lindab webshop
- Password: Your or your company's password for the Lindab webshop
- Connect: Connects to the Lindab webshop
- Customer: After connecting it shows the customer's identity
- Project: Select a project in the webshop from the list or create a new project
- Sub project: Creates a new sub project in the webshop

After finishing the settings push the "Upload Products" button to execute the upload.

Push the open webshop button to open the Lindab webshop in your default web browser on your computer.





In the browser you must first login and then go to the import tab:

| 👔 Lindab Demokund (30348) 🕀 Helsingborg lag | r × | ିଙ୍କ 🚺 SEK 0,00 🖉 🚢 🚽 |
|---|--|-----------------------|
| HEM PRODUKTKATALOG V FAVORITER IM | ORT MINA SIDOR KONTAKTA OSS PRISLISTOR | C Lindab |
| Sök i Lindabs webbshop | | ٩ |

Projekt

| | Namn 🔶 | Skapad - | Skapad av 🔶 | Senast redig 🔶 | | |
|---|-------------------|------------|----------------|----------------|---|---|
| > | CVpluginTestRevit | 2018-11-01 | demo@lindab.se | 2018-11-01 | Ø | 8 |

Select your project and sub project to list the products you have uploaded.

NOTE: Mainly rectangular and circular products for the duct system are supported and partly air diffusers. Chilled beams or rectangular silencers are not supported.

Check the list of products and push to confirm the selection:





Projekt : CVpluginTestRevit » 1

| | Status Mottagna | | Ritning | Skapad av demo@lindab.se | Skapad 2018-11-01 | Godkā |
|-----|---|-----------|-----------|-----------------------------|----------------------|-------|
| | rtiklama måste godkännas innan de kan överföras till varukorgen | | | | | |
|) 3 | 33 Mottaget 🛛 🧶 0 Godkänt 🏾 🌦 0 Tillagt i Varukoigen 🛛 🐹 0 M | isslyckat | | | | |
| | | | | | | |
| Na | amn | Kommentar | Kvantitet | Pos | ition på ritninger | 1 R |
| LK | (R.600.400.1019 * | | 1 | 0 | | 0 |
| LK | (R 600 400 1042 * | | 1 | 0 | | G |
| LK | KR 600 400 1250 * | | 2 | 0 | | G |
| LK | KR 600 400 1250 * | | 14 | 0 | | G |
| LK | KR 600 400 249 * | | 1 | 0 | | 0 |
| LK | KR 600 400 495 * | | 1 | 0 | | 0 |
| LK | KR 600 400 749 * | | 1 | 0 | | 0 |
| LK | (R 600 400 969 * | | 1 | 0 | | G |
| SF | R 125 3000 | | 1 | 0 | | G |
| SF | ₹ 125 3000 | | 20 | 0 | | G |
| SF | ₹ 200 3000 | | 7 | 0 | | O |
| | L | | 3 | 0 | | G |

NOTE: The verification of the uploaded products might take a few minutes depending on number and type of products uploaded.

In the end you will get a report of the transactions:



Products which have not been accepted cam then be replaced or manually configured:





Projekt : CVpluginTestRevit » 1

| Status Godkännande av fast | | | | Ritning | Skapad av demo@lindab.se | Skapad 2018-11-01 | verför till \ | /arukorg |
|---|-------------------------------|---------------------------|-------------|---------|-----------------------------|-----------------------|---------------|----------|
| Artiklarna är godkända | | | | | | | | |
|) 0 Mottaget 📀 27 Godkânt 👘 0 Tr | lagt i Varukorgen | 🔀 6 Misslyckat | | | | | | |
| S Följande produkter kunde inte godkännas (| och har därför ej överfö | irts till varukorgen | | | | | | |
| | | | | | | | | |
| Namn | | Kommentar | | Kvant | itet | Position på ritningen | E | R |
| LBSR 1 0 1 1 * (285843) | | | | 1 | | 0 | Ø | 0 |
| .BXR 600 400 600 45 100 * 25 25 (285842) | | | | 2 | | 0 | ø | 0 |
| BXR 600 400 600 90 100 * 25 25 (285842) | Ersatt artike | 1 | | | | × | ø | Θ |
| PSU 125 125 (252349) | SLCU 125 60 Sök efter ersa | 10 50 ättningsartiklar | _ | | | | ø | 0 |
| SLCU 125 600 50 (279198) | sicu | | | _ | _ | | Ø | 0 |
| SLCU 125 900 50 (279198) | 279164 | SLCU12560050 | LJUDDÄMPARE | | | <u> </u> | Ø | 0 |
| | 279170 | SLCU16060050 | LJUDDÄMPARE | | | | | |
| | 279171 | SLCU16090050 | LJUDDÄMPARE | | | | | |
| .indab 2015 🛛 😭 🛗 🗟 🖬 Gilla | 279176 | SLCU20090050 | LJUDDÄMPARE | | | | Private | Polic |
| | 770101 | SI CH35000050 | | | | • | | |
| | | | | | | | | |
| | | | | | | | | |
| | 5 | | | | 5mm | tt artikel | | |
| | | | | | LISA | T ST SINCE | | |

In the last step you can export all products to your shopping cart and place the order:





Produkter i varukorgen

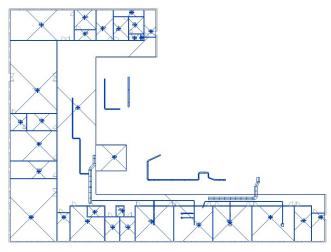
| nabb best | ällning | 1 | Lägg till | Ō | Funktione | 5 | \sim | Ĩ |
|-----------|---------------------------|------------|-----------|---------|-----------|-------------|--------|---|
| | BESKRIVNING | BRUTTOPRIS | NETTOPRIS | RABATT% | KVANTITET | LAGERSTATUS | BELOPP | |
| | BU 250 90 GALV RÖRBÖJ | 463,00 | 185,20 | 60% | 3 | 0 🛕 | 555,60 | 8 |
| 257012 | 📕 Kommentar 🖌 🧳 Godsmärke | | | | | | | |
| | BU 125 15 GALV RÖRBÖJ | 162,00 | 64,80 | 60% | 4 | 46 🗸 | 259,20 | 6 |
| 257120 | 📕 Kommentar 🛛 🥜 Godsmärke | | | | | | | |
| | BU 125 60 GALV RÖRBÖJ | 175,00 | 70,00 | 60% | 1 | 0 🛕 | 70,00 | 6 |
| 257034 | Kommentar 🖉 Godsmärke | | | | | | | |
| | BU 125 90 GALV RÖRBÖJ | 175,00 | 70,00 | 60% | 2 | 164 🗸 | 140,00 | 6 |
| 257006 | Sommentar | | | | | | | |

4.13 TEKNOsim export

The TEKNOsim export function the TEKNOsim software from Lindab for energy and climate calculations. For more information please visit: http://www.lindab.com/global/pro/downloads/software/ventilation/Pages/TEKNOsim.aspx

This function exports the geometry of the marked Revit rooms or MEP-Space including their surfaces and some properties and saves them to a file, which can be imported into TEKNOsim.

Mark the Rooms/MEP-Spaces of the floor you want to export and push the TEKNOsim export button:

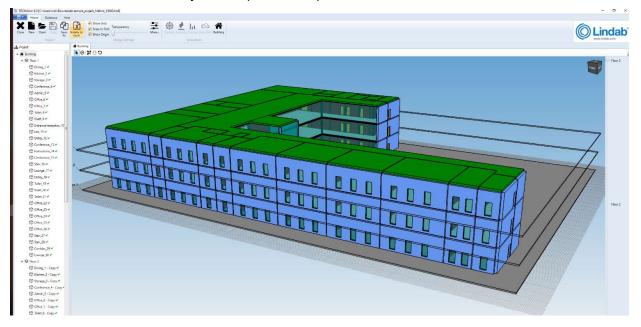


NOTE: you can just select any view with visual Rooms/Spaces and mark all objects in the View. The export function will filter all objects which are not Rooms or Spaces!





You can now save the file on your computer and open it in TEKNOsim:







5 MagiCAD template and Dataset

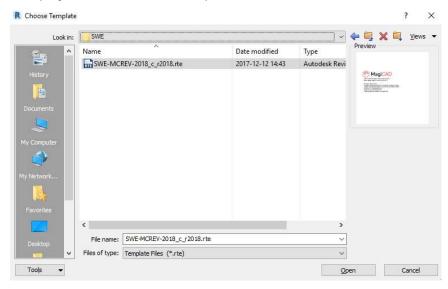
In order to use MagiCAD functionality a MagiCAD installation is required with an active Ventilation module license. This will add an extra panel to the CADvent tab.



MagiCAD provides a number of localized Revit and Dataset templates for different markets. These can be downloaded from:

https://portal.magicad.com/Download/GetProductCategoryList?categoryId=7#

After downloading the localizations, you can install them on your computer. Start Revit and start a new project with a localized template for Revit:



In the same way you can now select a localized Dataset for MagiCAD. Go to the MagiCAD Common tab and select "New Dataset", then you can create a copy of the template Dataset for your Revit project:

| 🔊 New Dataset | 3 |
|--|-----------|
| Create | |
| ○ Empty data set | |
| Copy from another data set | |
| C:\ProgramData\MagiCAD-RS\2018_r2018\Datasets\SWE\SWE-MCREV-2018_c_r2018.mrv | Copy from |
| New dataset filename | |
| C:\ProgramData\MagiCAD-RS\2018_r2018\Datasets\CADvent Revit plug-in Test.mrv | Filename |
| | |

Open then the Dataset with the "Modify Dataset" function and navigate to the Duct Series:





| Dataset: CADvent Revit plug-in Test | ↓ Type name | User code | Description | |
|--|-------------------|-----------|------------------------------|-------|
| - Ventilation | Aerotex | 8 | Aerotex, Textilkanal | |
| Duct series Insulation series Sizing methods | Cirkulär kanal | 1 | Spirokanal | |
| | Lindab LKR | 1 | Lindab rektangulär kanal LKR | |
| Balancing methods | Lindab SR | 1 | Lindab cirkulār kanal SR | |
| ⊕ Devices and components | Rektangulär kanal | 1 | Rektangulär kanal | |
| Piping | Spiro ALU | 4 | Cirk, kanal, Aluminiumplåt | |
| 🗄 - Drainage | Spiro ALZ | 5 | Cirk, kanal, Aluzinkplåt | |
| Electrical | Spiro PP | 7 | Cirk, kanal, PP-plast | |
| Communication and data | Spiro PVC | 6 | Cirk, kanal, PVC-plast | |
| Schematics | Spiro RF | 3 | Cirk, kanal, Rostfri | |
| • Variable settings Report templates for Bill of Materials | Spiro SVP | 2 | Cirk, kanal, Svartolåt | |
| Provision for builderswork openings | Ventilationsslang | 9 | Slang till ventilation | |
| - Dataset settings | | | | |
| | | | | |
| Merge | | | | Close |

When double-clicking on the Duct Series the dialog for the current Duct Series opens:

| eneral D: ype name: lser code: lescription: taterial: lational code: | 000009 I Lindab SR (for Revit family) I Lindab cirkulär kanal SR I | | r Revit family) | Properties Roughness: Is flexible duct | 0,15000 | | | |
|--|--|---------|-----------------|--|--------------|--|--|--|
| uct sizes | Products / Priority List | t | | | | | | |
| Size ^ | ↓ Type | Product | | Description | | | | |
| 53 | Duct bend | BU | | | | | | |
| 30 | Duct bend | BFU | | | 1 | | | |
| 00 | Duct bend | BKU | | | | | | |
| 125 | Duct bend | BKFU | | | | | | |
| 160 | Duct bend | BSFU | | | | | | |
| 200 | Duct bend | BSU | | | | | | |
| 250 | Duct joint | SNPU | | | | | | |
| 315 | Duct joint | NPEU | EU | | | | | |
| 400 | Duct joint | NPU | | | | | | |
| 500 | Duct plug | EPFH | | Market Area SWE,NOR,RUS,FIN,EST,LTU,LVA | | | | |
| 530 | Duct plug | ESU | | | | | | |
| 300 | Characterite | | | | | | | |
| 1000 | Change priority | | Manage products | | | | | |
| 1120 🗸 | | | Add duct | Add reducer | Add X-branch | | | |
| | Move product | up | Add bend | Add cap | Add tap | | | |
| Add | Move product d | own | Add joint | Add T-branch | Add Y-branch | | | |
| Delete | | | Add S-part | Remove | | | | |

In most of the Dataset templates, the Lindab SR Duct Series is already set up. You can also create a new Duct Series and add Lindab ductwork products in the "Manage products" section.

After finishing the Duct Series, you must go to the Ventilation tab in MagiCAD and select the "Duct Series" function to make the products available in Revit:



| Site | Collaborate | View | Manage | Add-Ins | CADvent Ma | igiCAD Common | MagiCAD | Ventilation | Ma |
|------|---------------|-----------|-----------|----------------------------|-----------------|------------------------|-------------------------|------------------|----|
| ıg | Angle to Ho | | Duct | 口 公 投 Duct Series | Install Product | Calculation Control | +- ×÷ Calculation | Change System | |
| | | 0 to | | eries | | | Ventilation | | |
| | Duct Series | | 2 | þater | | | | | |
| | Create and up | date duct | series to | project | 1 | | ¢ | | |

Click on the Duct Series button and select the Duct Series you want to have available in the Revit project. Repeat this function for all Duct Series you want to have available in the Revit project.

Now you can start designing your ventilation project with Revit or MagiCAD ductwork drawing functions or use the functions in the CADvent plugin for Revit for the LindQST or TEKNOsim connection.

5.1 Production Model Updater

The Production Model Updater is a MagiCAD function that updates the generic Revit product models to "real" products. In Revit, the products are not designed according to the Lindab Production Model. This command updates the ductwork in your system into fabrication models, that can be ordered in the Lindab Webshop. Examples are different types of products (pressed bends to segmented bends) or male/female connection types like a reducer with a female connector directly connected to a T-piece.

Any product that is edited in Revit AFTER using the Production Model Updater will be reversed into the generic model, therefore this function should be last to use before making a bill of materials, use the CADvent Model Checker or the webshop upload.

When using this function you have to select a branch or a complete network. We recommend that you run the Production Model Updater function regularly to check smaller ready made parts of the ductwork. This to secure to not get a lot of errors so that Revit's built in functions reverse the changes MagiCAD does with the project when exchanging products or update product measures.

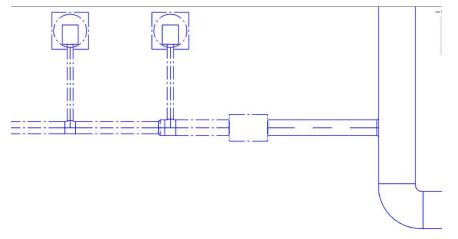




| Supply | | 🔘 Outdoor su | pply | | | |
|-----------|----------|--------------|-------------------------|-----------------|----------|----------|
|) Extract | | Outdoor ex | haust | | | |
| Level | Туре | Series | Product | Size | L [m] | Warnings |
| Level 1 | DUCT | 1 | SR-100 | 100 | 1.2 | |
| Level 1 | DUCT | 1 | SR-100 | 100 | 1.2 | |
| Level 1 | BEND-90 | 1 | BU-100-90 | 100 | | |
| Level 1 | DUCT | 1 | SR-100 | 100 | 1.2 | |
| Level 1 | REDUCER | 1 | RCFU-160-100 | 160/100 | 1 | |
| Level 1 | DUCT | 1 | SR-100 | 100 | 1.2 | |
| Level 1 | T-BRANCH | 1 | TCPU-160-100 | 160/100 | 1 | |
| Level 1 | DUCT | 1 | SR-160 | 160 | 1.3 | |
| Level 1 | REDUCER | 1 | RCFU-200-160 | 200/160 | | |
| Level 1 | DUCT | 1 | SR-100 | 100 | 1.2 | |
| Level 1 | T-BRANCH | 1 | TCPU-200-100 | 200/100 | 1 | |
| Level 1 | DUCT | 1 | SR-200 | 200 | 1.3 | |
| Level 1 | T-BRANCH | 1 | TCPU-200-100 | 200/100 | | |
| Level 1 | DUCT | 1 | SR-200 | 200 | 1.3 | |
| Level 1 | REDUCER | 1 | RCFU-250-200 | 250/200 | 1 | |
| Level 1 | DUCT | 1 | SR-100 | 100 | 1.2 | |
| Level 1 | T-BRANCH | 1 | TCPU-250-100 | 250/100 | 0.000 | |
| Level 1 | DUCT | 1 | SR-250 | 250 | 0.9 | |
| Level 1 | DUCT | 1 | SR-250 | 250 | 1.8 | |
| Level 1 | TAP | 1 | ILRU-250 | 250 | 1 | |
| Level 1 | PLUG | 1 | LEPR-400-250 | 400x250 | | |
| Level 1 | DUCT | 1 | LKR-400-250-1500-* | 400x250 | 1.5 | |
| Level 1 | REDUCER | 1 | LDR-600-350-400-250-45 | 600x350/400x250 | 1 | |
| Level 1 | DUCT | 1 | LKR-600-350-972-* | 600x350 | 1.0 | |
| Level 1 | DUCT | 1 | LKR-450-350-1998-* | 450x350 | 2.0 | |
| Level 1 | T-BRANCH | 1 | LTTR-600-450-600-350-*- | 600x350/450x350 | | |
| _evel 1 | DUCT | 1 | LKR-600-350-972-* | 600x350 | 1.0 | |
| Level 1 | BEND-90 | 1 | LBXR-600-350-600-90-10 | 600x350 | 1 | |
| Level 1 | DUCT | 1 | LKR-600-350-2899-* | 600x350 | 2.9 | |

When using the function you can see in the "Product" column, which is the product that will be used or configured in the Revit project. If a product is not available or can't be configured, the dialog will show warnings.

After pushing the "OK – Update to model" button, MagiCAD will adjust the products in the Revit project according to the Lindab Production Model.







5.2 Split segments function

"Split segments" function is a MagiCAD function to split ducts into standard lengths. In this option you can add standard lengths and apply those to cut ducts into their standard lengths including additional features for tolerances and other limitations. For description of the full functionality please read the MagiCAD for Revit User Manual.

| lange | Ventilation Piping Electrical | | | | | |
|--|--|----------------------------|---------|---------|--|--|
| O Project | Settings | | | | | |
| Select objects Current view | Round duct couplings: | Insert | ○ Leave | C Erase | | |
| Selected objects Network Selected levels | Rectangular duct couplings: | Insert | 🔿 Leave | ⊖ Erase | | |
| | Tolerance before tap: | | 50 | | | |
| Level 2 | Do not split if the result is shorter than: | | 0 | mm | | |
| Level 3 Level 4 | Use constant length for all series: | | 0 | mm | | |
| Level 1 | Ducts | | | | | |
| Level 5 | Round Duct | | | - I - | | |
| | Round Duce | | | | | |
| | Lindab SR | | | - 11 | | |
| | Lindab SR | | | -1 | | |
| | | | | - | | |
| | Lindab SR Rectangular Duct 1200 | | | - | | |
| | Lindab SR Rectangular Duct 1200 | | | | | |
| | Lindab SR Rectangular Duct Lindab LKR Round Duct Cirkulār kanal | | | | | |
| | Lindab SR Rectangular Duct Lindab LKR Round Duct | | | | | |
| | Lindab SR Rectangular Duct Lindab LKR Round Duct Cirkulär kanal Round Duct Cirkulär priority order | | | _ | | |
| | Lindab SR Rectangular Duct Lindab LKR Round Duct Cirkulär kanal Round Duct | | | Assign | | |

If you push the "Split segments" button, the above dialog is shown. Select the range in the upper left corner to make a selection to which this function will apply. Select the Lindab duct series' and add the standard lengths in which the ducts should be cut.

NOTE: You can apply several values, the prioritization goes from left to right values. This means that in case the first value can't be applied because of any limitations, MagiCAD will use the next available value to cut the duct.





Push the OK button to execute the function. Depending on which range you have selected the user might be prompted to select the products to be cut and confirm the action in Revit:

| Multiple Finish Ca | ancel | | | | |
|----------------------------|----------------------|--------------|---|-------------|--|
| Properties | × | | | | |
| Floor Plan V57 | • | | | | |
| Floor Plan: V57-100-p | Self Edit Type | 0 | | D | |
| Graphics | \$ | | - | | |
| View Scale | 1:50 | | | 1 1 march 1 | |
| Scale Value 1: | 50 | and a second | | | |
| Display Model | Normal | | | | |
| Detail Level | Medium | | | | |
| Parts Visibility | Show Original | | | | |
| Visibility/Graphics Overr. | Edit | | | | |
| Graphic Display Options | Edit | | | | |
| Orientation | Project North | | | | |
| Wall Join Display | Clean all wall joins | | 0 | | |
| Discipline | Mechanical | | | | |
| Show Hidden Lines | By Discipline | | | | |
| Color Scheme Location | Background | | | | |
| Color Scheme | | | | | |

Now the product are cut and connectors are inserted where applicable.

NOTE: As Revit adjusts the ductwork objects you will need to perform the Production Model Updater function once more to convert all products into the Lindab Production Model.

