Trimble EC-CAD

This document contains summary information on new features, late-breaking product information, updates, and troubleshooting tips not covered in the Trimble® EC-CAD documentation.

Introduction

These release notes describe the features and enhancements that are new in version 10.1 of Trimble EC-CAD. For further support information, go to mep.trimble.com/support/.

Trimble EC-CAD

Trimble EC-CAD Version 10.1 is a full installation for new customers and applies software enhancements and corrections for customers who are upgrading from an earlier release (V9.1 or earlier version) of all the Trimble EC-CAD software components, including MEP Design to Fabrication, Trimble EC CAD, PartManager, and DuctMaker. Your license and specific installation may include some, or all, of these components.

Quick Links

Trimble EC CAD Specific Features and Changes

Trimble EC-CAD Upgrade Procedure

Trimble EC-CAD New features and changes

The following improvements have been made to the Trimble EC-CAD Product:

New Features

Trimble EC-CAD Version 10.1 is designed for use with Autodesk's Revit 2020 and AutoCAD MEP 2020 Platforms.

Several features have been added to EC-CAD V10.1. The features implemented have been aimed both at improving the Revit interoperability workflow for Duct and at making EC-CAD easier to use. Revit interoperability is the ability to import engineering design models from Revit to be used as a baseline for your coordination model via our Design to Fabrication workflows and it is the ability to be able to send your models back to Revit natively via EC Project. EC Project enables contractors to export multiple CAD drawings to a database to be later consumed into a single Revit project. EC Project also enables revision tracking throughout the process.

Design to Fabrication - Duct Fabrication Preferences:

Version: 10.1
Date: September 2019

We have improved the design to fabrication workflow experience by allowing customers to create multiple DuctFabricationPreferences and select the desired setup during import of your Revit data.
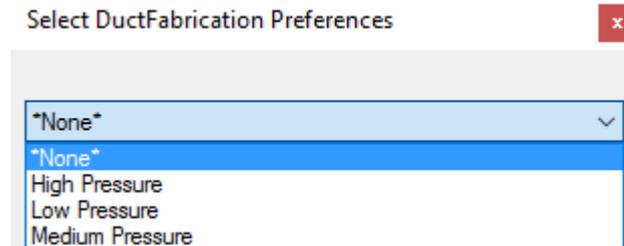
There are now two valid workflows for importing Revit data. The first method is to create smaller selection sets for export out of Revit (perhaps by pressure class) and map these to your desired DuctFabricationPreferences during import into Trimble EC-CAD. The second method is to create any sized selection set for export out of Revit (perhaps by drawing) and do not map this to any DuctFabricationPreference during import (choose the option "None" during import).

If you select the second method you will import the Revit data into EC-CAD as it was drawn in Revit and then use tools in Trimble EC-CAD to apply your duct fabrication preferences, systems, and routing preferences. This is the recommended workflow and many new tools have been added or modified in this release to support this workflow.

Design to Fabrication – Ease of Use

Manufacturer Default Setup:

Trimble EC-CAD no longer requires multiple manufacturer defaults to achieve the desired results for both drawing directly in EC-CAD or importing files from Revit. We recommend you setup your manufacturer defaults based on the way that you would like to draw your fittings if you had enough space to draw them that way.

You can use formulas to control dimensions on your fittings. For example, you may want to setup your radius elbow fitting to have a radius of 1.5x the width of the elbow. Trimble EC-CAD can now easily modify secondary parameters and formula driven values so if you need to adjust this radius later in your drawing you can easily do so via the Property Palette.

EC-CAD Tools now work with formula driven fittings:

In previous versions of EC-CAD some of the modification tools, like Duct Remove and Duct Connect for example, required that certain dimensions were not formula driven. These tools have been modified to work equally well with formula driven and non-formula driven parameters.

Design to Fabrication – Import Behavior:

We have also modified the behavior of how fittings are imported from Revit. When we import fittings from Revit, we will try to draw the fittings according to your default setup. We will try to maintain the default values specified and the specified secondary parameters and formula driven parameters as well. If we cannot fit the fitting based on your setup, we will adjust the fitting to make it fit without moving the centerline location of any duct runs.

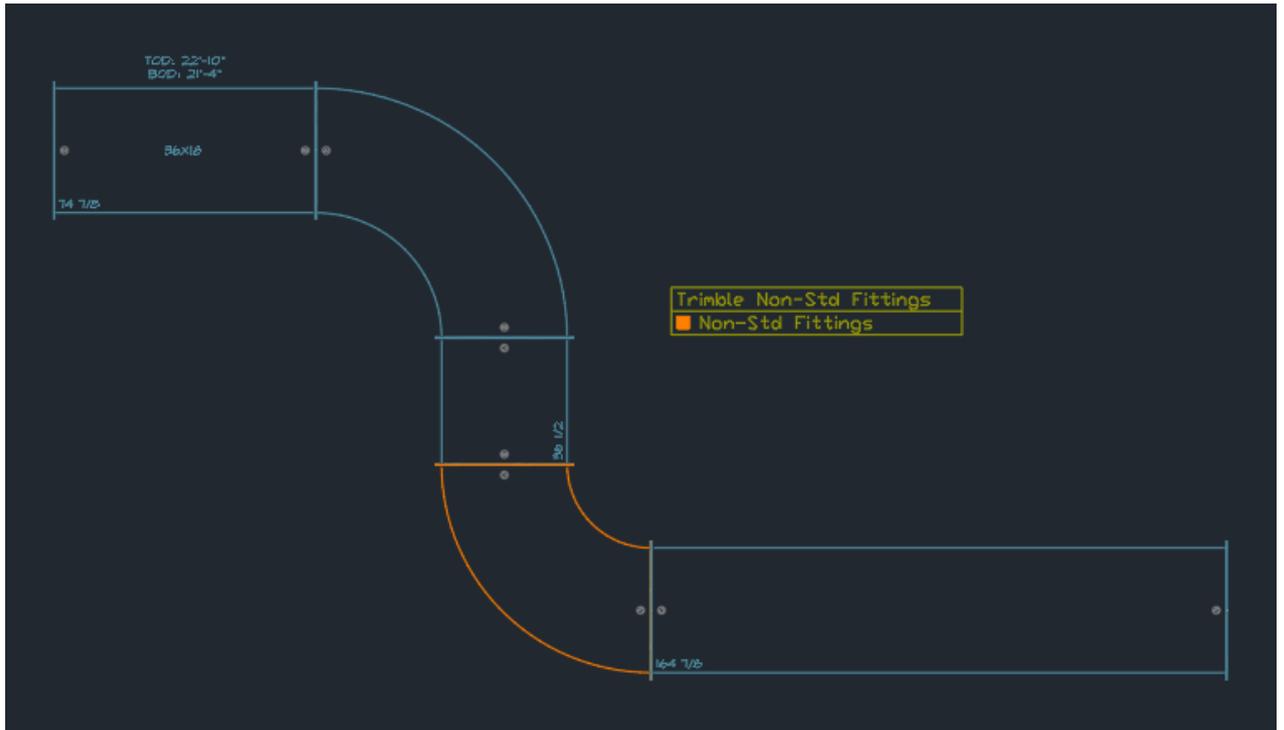**Standard Fittings and Non-Standard Fittings:**

We have introduced a new parameter called Standard Fitting into EC-CAD. In EC-CAD a fitting is considered Standard if it was drawn without modifying any secondary parameters or formula driven parameters on the fitting. So, if you setup the radius of your radius elbow to be 1.5x the width then provided this fitting is drawn with a 1.5x radius we will flag it as a Standard fitting. If you edit the radius to some other value, we will flag this fitting as Non-Standard. The same is true for any fitting. If you want your square throat elbow to be considered Standard if it has six-inch throats than you should setup your throats as secondary parameters and set them equal to 6 inches. That way if your square throat elbow is drawn with six-inch throats it will be considered Standard but if you modify the throats to be larger or smaller it will be flagged as Non-Standard.

Standard Fitting Property:

There is a new parameter in your ECDuctSystemData property set called StandardFitting which can be used in schedules to help you identify whether your drawing is modeled with Standard or Non-Standard fittings. Existing customers will have to add this parameter to their drawing template and can review the EC Schedules and Tags drawing for proper setup of this parameter.

Non-Standard Fitting Display Theme:

We have created a new display theme called, "Trimble Non-Std Fittings" that can be used to graphically display Non-Standard fittings in your drawing. In the example below one of the radius elbows is Standard and one is Non-Standard. The Non-Standard elbow is highlighted orange indicating that it is Non-Standard. With proper setup in place we recommend reviewing your drawing for Non-Standard fittings to make sure that you want to fabricate these typically more expensive fittings as drawn.

The EC Schedules and Tags drawing that ships with Trimble EC-CAD v10.1 includes the new parameter "Standard Fitting", a "Non-Std Fittings" schedule, and a "Trimble Non-Std Fittings" display theme. All of these items can be copied into your company's standard start drawing template.
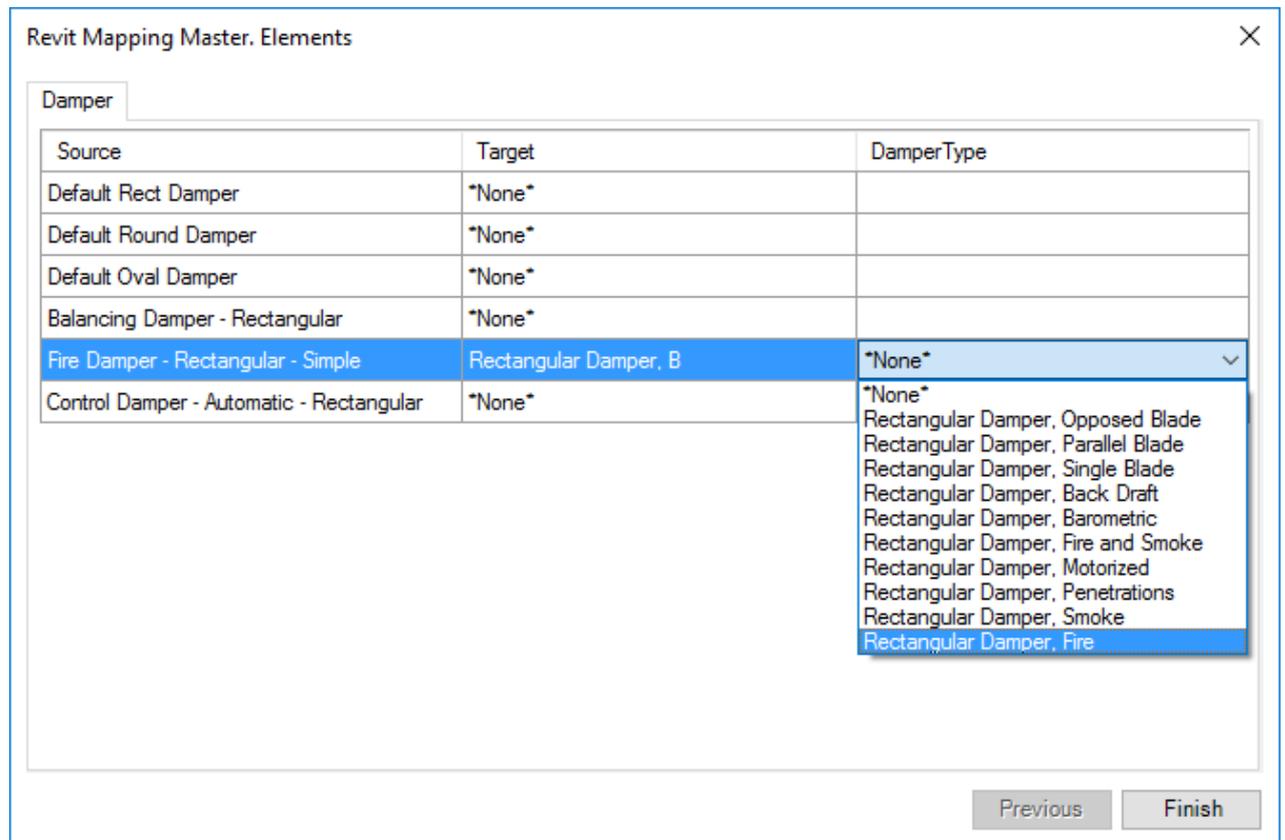
Design to Fabrication – Air Devices:

EC-CAD can now import air devices from Revit and convert them to MvParts on import. There are three options for importing Air Devices, you can convert them to MvParts on import, you can map them to MvParts on import, or you can decide not to bring them in at all. These options can be configured using the command REVITSYSTEMSIMPORTOPTONS.

Design to Fabrication – Dampers:

EC-CAD will import stand-alone dampers from Revit but not dampers that are hosted inside a Revit family. So, for example EC-CAD can import a Fire Damper from Revit but not a Volume Damper that is hosted in a tap fitting. For dampers that are hosted in Revit fittings you will import the fittings into EC-CAD and then use EC-CAD tools to apply dampers to these fittings. Alternatively, you can setup your specification for certain EC-CAD fittings to be drawn with dampers.

For stand-alone dampers EC-CAD will display a dialog box during import asking you to map the Revit damper to an EC-CAD damper sleeve and damper type. You have the option to map the damper sleeve and leave the damper type set to None so that you can later use EC-CAD tools to specify the damper type. These mappings will be stored and saved for later imports. They can always be adjusted by using the command REVITELEMENTSMAPPING. Also if you get the

mapping wrong here you can always use the new Swap Fittings tool (described below) to change the sleeve type later.


Design to Fabrication – Flex Duct:

Some improvements have been made to the way flex duct imports into EC-CAD from Revit. The system, the layer, the color, and graphics representation are now assigned properly as if the flex duct were drawn on that system.

Design to Fabrication – Relative Elevations:

EC-CAD has several improvements regarding setting and viewing elevations. When you import from Revit your model will come in at the global elevation at which it was drawn in Revit. So, if you are importing duct and pipe that was drawn 10' above the 2nd floor and each floor has a 12' elevation then the duct and pipe will come in at a 22' elevation. This is considered the global elevation in EC-CAD. To adjust this so that you can draw duct and pipe systems relative to the floor elevation you will want to set your Elevation Offset parameter.

To do this you select Elevation Offset from the Fabricate menu:
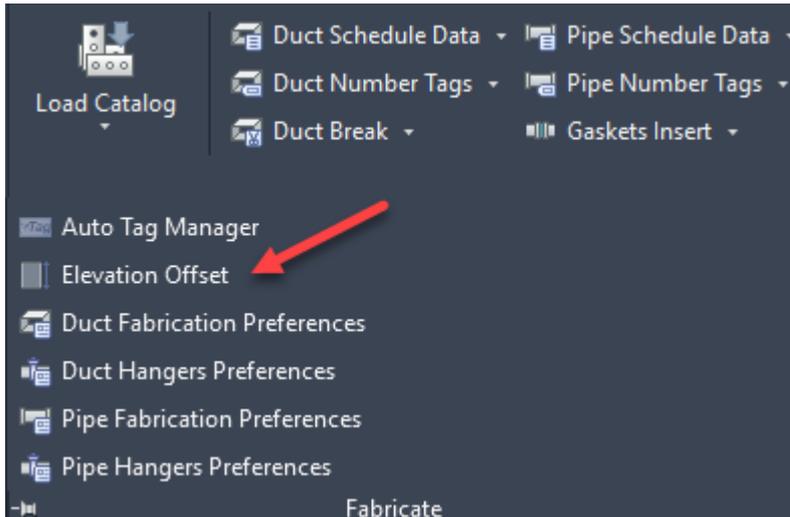
You then enter the offset from the ground floor to the floor that you are working on:
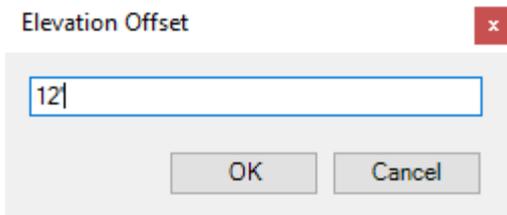
That way all your elevation dimensions will be relative to this Elevation offset parameter.

EC-CAD – Properties, Duct Objects:

EC-CAD Version 9.1 introduced a new Duct and Duct Fitting Property Palette. EC-CAD Version 10.1 now has a new Duct Objects Property Palette that will display and allow modification of properties across a selection set of multiple duct and duct fittings. This new property palette allows users to change the System, Layer, Routing Preference, Double Wall status, Acoustic Lining, and Insulation properties across a selection set of multiple duct and duct fittings.
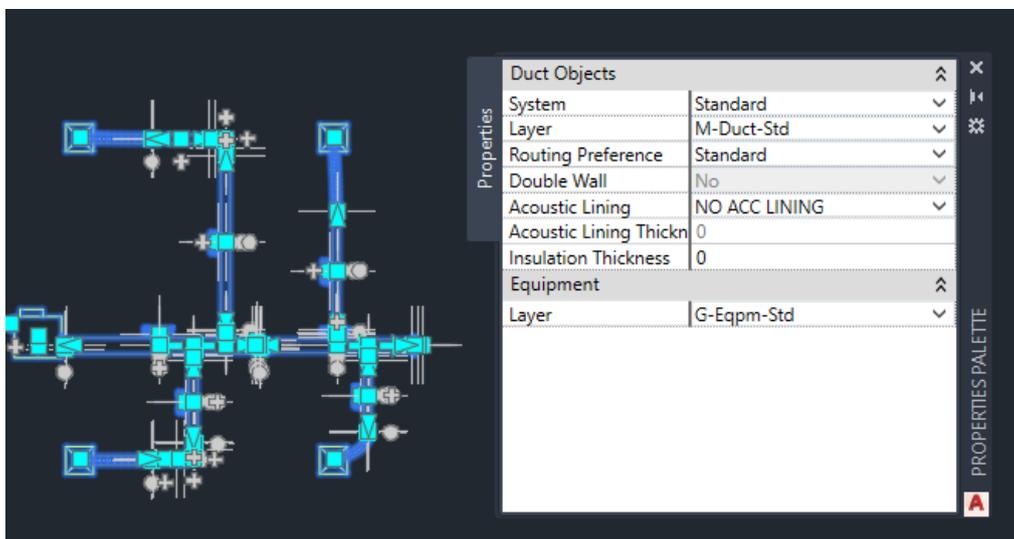
A few notes about the behavior of modifying these properties:

- System: If you change the System of your selection set then you will also change the layer that the items are on as each System has an associated layer.
- Layer: You can manually change the layer of the objects away from the layer that they are assigned via the system that they belong to.
- Routing Preference: Changing the Routing Preference will not reroute the duct or duct fittings it will simply change the routing preference property assigned to these objects.

This new property palette is very useful with Design to Fabrication workflows. You can import your items from Revit, assign them to the correct systems and routing preferences and adjust lining, double wall, and insulation properties as needed.

This new property palette is also very useful when you need to make changes to your drawing.

EC-CAD – Swap Fittings Tool:

The EC-CAD Swap Fittings tool can be used to change the fitting type of single fittings or multiple fittings. When using this tool, you must select fittings of the same type, but they can be of different sizes.

An example of this tool would be to select one or multiple radius elbow type fittings in your drawing of the same or different sizes. You can then use this tool to swap these fittings with a different rectangular elbow type like the square throat elbow for example. Another example would be to select all your normal round taps in your drawing and then swap them to round conical taps.
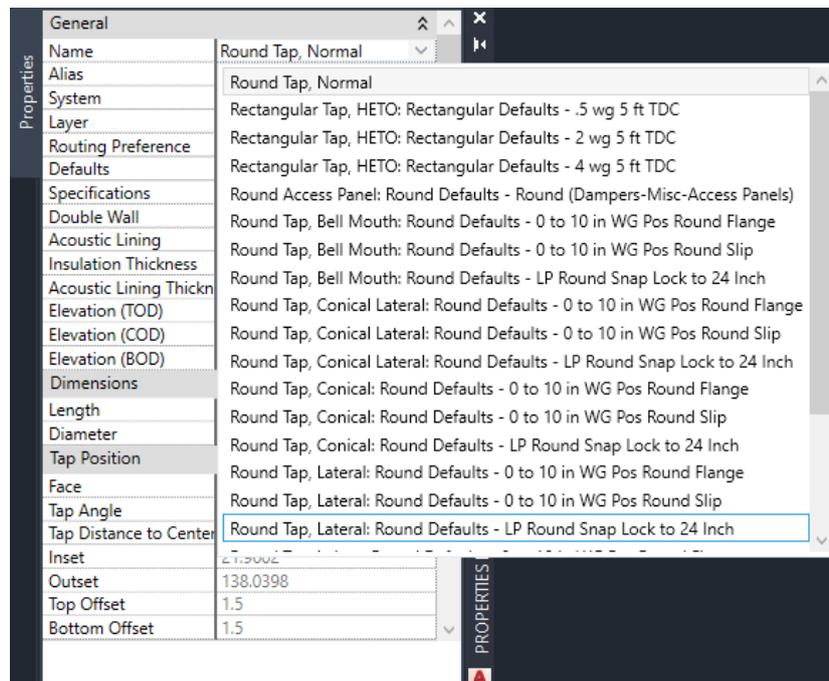

This tool can be very useful for both Design to Fabrication workflows and for traditional workflows. For Design to Fabrication workflows we recommend importing the engineering drawing into EC-CAD

the way that it was drawn by the engineer. You can then use the Swap Fitting tool as needed to change fittings to your preferences within the bounds of the engineering specification.

EC-CAD – Flow Tool:

The EC-CAD Flow Tool can be used to change the flow direction of connected duct runs in your drawing. If you select a single duct or duct fitting that has its flow facing the wrong direction in the run and then select the Flow Tool, the program will change the flow direction of the selected fitting and make sure that all other fittings in the run have this same flow direction. Having a well-built model with the flow direction assigned properly will make modeling, annotating, modifying, and fabricating the model easier and more accurate.
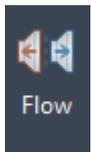
Often when you import a Revit model via Design to Fabrication the flow direction is not assigned properly. You can use this command to quickly and easily correct the flow in your model. Additionally, if you are not careful to assign the flow properly when modeling with EC-CAD you can use this tool later to go back and adjust your duct runs for proper flow.

EC-Project:

EC-Project in EC-CAD is the ability and the toolsets used to export your CAD drawings for later import into Revit. In EC-CAD you can export drawings out and assign them to a project during export. Later you can import multiple EC-CAD drawings into a single Revit project. All your equipment, duct and duct fittings import into Revit as native Revit objects as if they were drawn directly in Revit.

EC Model Sync Master

Select revision

Drawings		#	Date Stamp	Description
Base Start Drawing 2020		11322	8/5/2019 1:50:58 PM	Coordination R1
		11508	8/5/2019 2:02:08 PM	Coordination R2
		11848	8/8/2019 2:33:28 PM	Quick Demo

Back   Update

EC-Project - Drawing Revisions:

EC-Project allows you to assign a drawing revision when you are exporting your drawings out of EC-CAD. You also have the ability in Revit to decide which drawing Revision you would like imported

into the Revit project. We have added the ability to give each revision drawing a clear description and a date stamp to make it much easier to know which drawings to import into Revit.

EC-CAD and DuctMaker Dampers – Ease of Use:

Changes have been made to the setup and use of dampers. Dampers can either be placed in Sleeves or hosted in certain fittings. We offer the following sleeves:

- Rectangular (Types A, B, C, D, and E)
- Round (Types A and B)
- Oval (Types A and B)

And we offer the following Damper Types for each duct shape:

- Back Draft
- Barometric
- Fire
- Fire and Smoke
- Motorized
- Opposed Blade
- Parallel Blade
- Penetrations
- Single Blade
- Smoke

All these Damper Types can be hosted in Sleeves but only the Volume Dampers (Opposed Blade, Parallel Blade, and Single Blade) can be hosted in duct and duct fittings.

The Sleeves should be setup via the Manufacturer Defaults and Specifications. The Sleeves can be set in your specifications to be Fabricate, Label or Purchased items.

The Dampers should also be setup via the Manufacturer Defaults and Specifications. The Dampers can be specification driven to placed in certain fittings or they can be manually added in EC-CAD.

EC-CAD - Add Palette – Reverse Flow Direction:

EC-CAD has always had the ability to route fittings. You can route fittings with a Normal flow direction or in a Reverse flow direction. EC-CAD version 9.1 introduced a Fitting Add Palette to make placing fittings piece by piece much easier with a Normal flow direction.   Now in EC-CAD Version 10.1 you can place fittings via the Fitting Add Palette in a Reverse flow direction.

EC-CAD – Pipe Fitting Manufacturers:

Some updates to the out of the box database have been made for Grinnell and Anvil. Products lines that were no longer offered by the manufacturers have been removed.

DuctMaker Pico Path Type 2 Cutter File:

The DuctMaker Pico Path Type 2 cutter file has been improved to work well with both Imperial and Metric units within the single cutter file.

Known Issues

- AutoCAD MEP Object Viewer Liner and Insulation Display

  Liner and insulation will not display correctly on Round and Oval Gored Elbows, Radius Elbows, and Ogee Transitions when viewing them via the AutoCAD MEP object viewer.

- Duct Routing Performance

  You may experience some jumpy cursor movement when routing depending on the complexity of your duct specs and the performance of your computer hardware.

- Insulation Display on Attached Views and XREF Files

  Insulation will not display correctly on Round and Oval Gored Elbows, Radius Elbows, and Ogee Transitions on attached views and XREF files.

Languages

This release of the product is available in the following languages:

- English

Upgrade procedure

Trimble EC-CAD

Trimble EC-CAD Version 10.1 is a full installation for new customers and applies software enhancements and corrections for customers who are upgrading from an earlier release (V9.1 or earlier version) of all the Trimble EC-CAD software components, including MEP Design to Fabrication, EC CAD, PartManager, and DuctMaker. Your license and specific installation may include some, or all, of these components.

General Release Information

This release is being provided as a full installation (via the setup.exe) so that both new and upgrading customers can apply the latest software to their system using the Trimble EC-CAD Setup user interface.

Software Distribution

This software update is available for download from the Customer Portal as a **Trimble EC-CAD V10.1 2020** Installation zip file.

Customer Portal Access

The Customer Portal is an area of the web site available to Subscription Customers, providing software updates, documentation and video resources. To gain access, simply fill out a short registration form to requests access. Once approved, you can then log in with your user name and password at any time. To register, copy the link below into your Internet browser:
http://eccccustomerportal.worldsecuresystems.com/register.htm

Prior Release Notes Documentation

This document describes the enhancements and updates when moving from Version 9.1 to Version 10.1. For customers upgrading from a release earlier than Version 9.1, you can access and review new features and functionality for each prior release on the Customer Portal.

Trimble EC-CAD Components Overview

The Trimble EC-CAD software system provides a streamlined workflow that allows users to move from design to fabrication with one set of products.

MEP Design to Fabrication is the tool for converting MEP engineering designs (duct and pipe systems from Revit, or generic AutoCAD MEP duct systems) to Fabrication-ready drawings using automated routines, saving significant fabrication detailing resources and time. MEP Design to Fabrication works inside both Autodesk's Revit and AutoCAD MEP software. Customers have the choice of purchasing their CAD seat(s) with or without an **MEP Design to Fabrication** license.

Trimble EC CAD includes several software components. **Fabrication for AutoCAD MEP** software is integrated directly inside AutoCAD MEP, to give users enhanced detailing capability and tools to work with real-world specifications and sizing for duct, and real manufacturer mechanical content. Customers choose to install only the elements of Fabrication for AutoCAD MEP that they are licensed for and plan to use - Pipe, Duct, or Combo (for both Pipe and Duct functionality). **PartManager** is the user interface to the manufacturer library and database that is used by Fabrication for AutoCAD MEP, providing easy access and organization and management of all parts, fittings, valves and shop defaults being used for project design. **EC Project** is the software tools and database for transferring As-built Sheet Metal drawings into Revit as native Revit objects.

EC DuctMaker is the CAM software tool, providing a fabrication interface used to build a highly-customized duct library that can be shared with design team colleagues, via Fabrication for AutoCAD MEP Sheet Metal. DuctMaker contains a comprehensive library of Oval, Round and Rectangular fittings and duct as well as specialty parts. It accepts Fabrication for AutoCAD MEP pickoff lists, estimating downloads, and allows for more editing if required. The software downloads fittings directly to the shop floor plasma cutters, liner cutters and coil lines, and uses barcode scanners to track the inventory of items during fabrication.

Compatibility

Operating System
The software is supported and was primarily tested under the Windows 10 64-bit operating system. Note: Windows versions earlier than Windows 10 are no longer supported for use with Trimble EC-CAD.

Microsoft SQL Server
The software was primarily tested with Microsoft SQL Server version 2016. It is also supported under Microsoft SQL Server Versions 2008 R2, 2012, and 2014.

Prior to Version 8.0, the Trimble EC-CAD software was only supported with Microsoft SQL server Version 2008 R2. While there is no immediate need to upgrade to a later version of SQL server to work with Version 10.1 we do recommend planning your upgrade to a newer version of SQL server.

Note: Microsoft SQL Server is not backwards compatible. The database that ships with our program is version 2008 R2. Once you attach it to a newer version of SQL server you will not be able to attach or use it with an earlier version of SQL. Make backups of your database and plan accordingly before moving to a newer version of SQL.

Trimble EC-CAD software now ships with the installer for SQL Server Express 2016. This version is recommended for all new installations.

For those customers migrating to a newer version of SQL Server, we recommend that you first upgrade your software completely to Version 10.1 and then migrate your Version 10.1 database to the newer version of SQL Server.

Autodesk Software

This release supports Autodesk **AutoCAD MEP 2020** and **Autodesk Revit 2020** software.

AutoCAD MEP Migration Assistant Issue

Autodesk has reported that verticals of AutoCAD, including AutoCAD MEP, should NEVER use the Migration Assistant. Use of the Migration Assistant will cause problems with the software, requiring a complete uninstall and reinstall.

When upgrading AutoCAD MEP, if you are prompted with the Migrate Custom Settings dialog box shown at right, click **Cancel**.
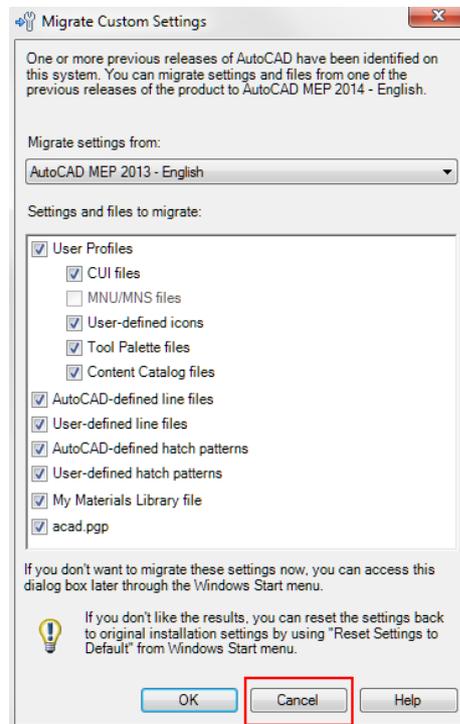
Autodesk Learning Resources

In addition to this document, be sure to review the Autodesk resources listed below to learn more about the features and functionality of the base software which Design to Fabrication runs within:

- **AutoCAD MEP Support and Learning**

  http://knowledge.autodesk.com/support/autocad-mep#?p=BLDSYS&p_disp=AutoCAD%20MEP&sort=score

- **Revit MEP Support and Learning**

  http://knowledge.autodesk.com/support/revit-products#?p=RVT&p_disp=Revit%20Products&sort=score

Upgrade Preparation

HASP Key License Update

A HASP key license may be required for use with this version. The HASP key update must be done first, before updating the software components. Refer to the Upgrade Installation Guide or contact Customer Support for information on how to obtain and apply HASP key license updates before upgrading the software.

Backing Up Your Data

IMPORTANT NOTE TO ALL UPGRADE CUSTOMERS: Before installing, remember to create a backup of your database, and any custom content you may have added to the **Styles** and

Template folders used by Fabrication for AutoCAD MEP, located in the following directories, to retain any customization you may have applied to these files:

C:\Program Data\EastCoast\Fabrication for AutoCAD MEP <version#>\Styles

C:\Program Data\Trimble EC-CAD\EastCoast\Fabrication for AutoCAD MEP \Template

For more detailed information on database backup procedures, refer to the following technical document for assistance:
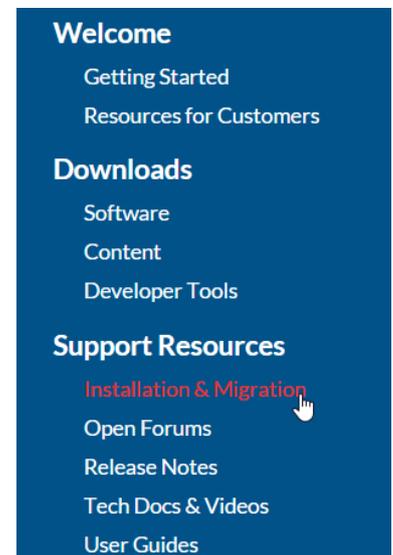
Backing up your SQL Database
http://eccccustomerportal.worldsecuresystems.com/LiteratureRetrieve.aspx?ID=94855

Upgrade Installation Documentation

Customers who have Version 9.0 or higher can upgrade to this version using the instructions in the *Upgrade Installation Guide*, which can be viewed or downloaded from the Customer Portal.

Once logged into the Customer Portal, to access Installation documentation, click **Installation & Migration** on the left, and then on the right, select the installation guide that pertains to your installation.

- **Trimble EC-CAD Upgrade Installation Guide -** For customers who are using one or more components in the Design to Fabrication software system.

- **DuctMaker Upgrade Installation Guide -** For customers who are only using and upgrading EC DuctMaker

NOTE: If you are upgrading from an earlier version than Version 9.0, please contact Customer Support for assistance.

Welcome
    Getting Started
    Resources for Customers

Downloads
    Software
    Content
    Developer Tools

Support Resources
    Installation & Migration
    Open Forums
    Release Notes
    Tech Docs & Videos
    User Guides

Legal notices

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Release notice

This is the September 2019 release (Revision A) of the Release Notes. It applies to version 10.1 of the Trimble EC-CAD software.