intratech

Intelligent 3D PDF Exporter for Navisworks[®]

Multiple

Industry Uses

Combined

3D PDFs

Easy to Use

Clash

Reporting

Convenient Exporting 3D PDF

Exporter

User Guide

Version 16.1

Revision History

Release No.	Date	Revision Description
16.0.0.7	2015/11/12	Initial Revision (draft)
16.0.0.9	2015/12/24	Updated setting values
16.0.2.6	2016/04/08	Updated GA drawings/ISO drawings/Mapping Rules
16.0.3.9	2016/06/17	Updated multiple PDF exporting functions and customized PDF template
16.1.2.12	2016/08/25	Support U3D format for PDF output files2016/08/25

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Introduction

Intelligent 3D PDF® Exporter for Navisworks is an add-on software that users can use to convert selected model(s) with neighboring objects or clash reports into a 3D PDF. Combine your GA drawings with the data that you specifically select, including properties and hierarchy while exporting everything into a convenient 3D PDF.

Our program enables you to:

- Export selected objects and their neighbors while maintaining a viewpoint to simply the visualization and limit the need to export an entire model.
- Export items with selected clashes to easily visualize your clashes and export them to 3D PDF files with the relevant neighbors.
- Combine selected 3D spaces in Navisworks with your 2D GA Drawings into a single, high functionality 3D PDF.
- Simplify the combination of 2D ISO Drawings and 3D Pipe lines together in our powerful 3D PDFs.

BENEFITS



Simple

Creating 3D PDF is easier than you think. Just 1-2-3 click, you can create Intelligent 3D PDF on the fly.

L	i;	g	h	t

Create lightweight 3D PDF by converting selected object(s) only instead of exporting the whole model.



Easy 3D PDF can reduce the 2d drafting efforts with embedded 3D view.



Intelligent

TAGs in 2D and objects(space) in 3D are linked.

Installation Guide

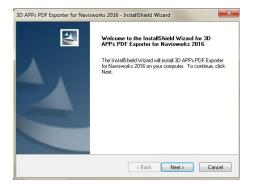
Basic System Requirements

For our program to operate correctly, computers that will run our program require these minimum specifications:

- Windows 64bit
- A licensed copy of Navisworks (2014, 2015, or 2016)
- Net framework of 4.5 or later

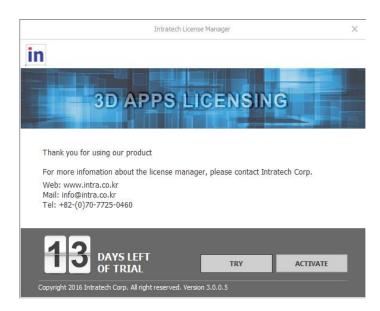
Setup Guide

After downloading the file, double click on the installation file and begin the downloading process. Click "Next" and continue through the installation process.



While going through the installation for the first time, it is possible to begin a 15 day free trial to test the program in order to make a final decision.

- Click "Try" to continue trial with the trial version
- Displayed at the bottom is the remaining days available on your free trial.
- When you are ready to activate, click the "Activate" button and continue to the activation process.
- Select your "License Type" and enter your activation key. This can be found on your License Certificate.

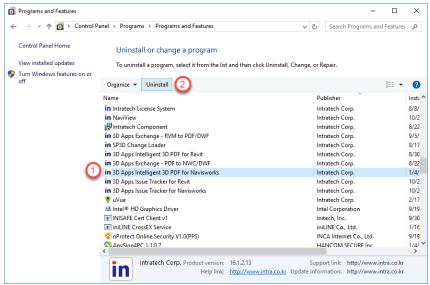


Uninstall

To uninstall 3D Apps Intelligent 3D PDF for Navisworks, please go to Control Panel and open Programs



You can find 3D Apps Intelligent 3D PDF for Navisworks in the programs list. **Select 3D PDF** for Navisworks and then click **Uninstall** button.



Then dialog box for uninstall confirmation will be displayed. Please click **Yes** to proceed the uninstallation.

Name	Publisher	Insta
in Intratech License System	Intratech Corp.	8/8/
in NaviView	Intratech Corp.	10/2
Apps Intelligent 3D PDF for Navisworks Uninstall	Intratech Corp.	8/22
Apps intelligent 30 PDF for Navisworks offinistali	Intratech Corp.	9/5/
	Intratech Corp.	8/17
Are you sure you want to completely remove 3D Apps Intelligent 3D	Intratech Corp.	8/30
PDF for Navisworks and all of its components?	Intratech Corp.	8/22
	Intratech Corp.	1/4/
	Intratech Corp.	10/2
Yes No		
Yes No	Intratech Corp.	10/2
Yes No	Intratech Corp. Intratech Corp.	10/2 10/2
· ····	Intratech Corp. Intratech Corp. Intratech Corp.	10/2 10/2 2/17
Intel® HD Graphics Driver	Intratech Corp. Intratech Corp. Intratech Corp. Intel Corporation	10/2 10/2 2/17 9/19

Application User Guide

Getting started:

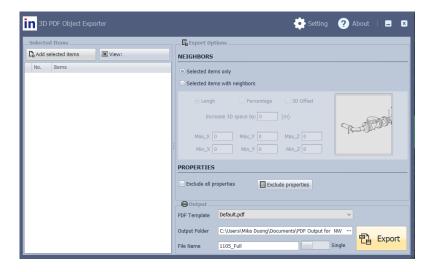
- Open your version of Autodesk[®] Revit[®].
- From the top menu, select the "PDF Exporter" tab.
- Within the PDF Exporter tab, there are 4 main functions:
 - Object Exporter
 - Clash Exporter
 - GA Exporter
 - ISO Exporter

N N N N - 2 A - 2 A -					Autodesk Navisworks Manage 2016 (NOT FOR RESALE) 1105-Pres.nwd					es.nwd		
	Home	Viewpoint	Review	Animation	View	Output	Item Tools	BIM 360	Render	PDF Exporter	Issue Tracker	• •
	t Exporter	Clash Expor	ter GA Ex	porter ISO E	xporter						•	

Object Exporter:

When opening the Object Exporter function, the following window will be displayed.

For a more detailed explanation of the "Settings" and "About" sections, please refer to the relevant sections (<u>5. Setting</u> <u>6.</u> <u>About</u>).

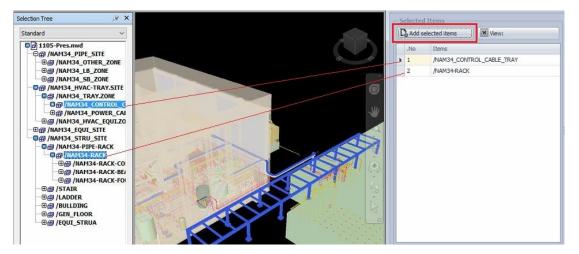


Export Selected Items:

To export selected items, please select the required items from the "Selection Tree' on the left or from the 3D viewer in the middle section.

Once an item is selected, click "Add selected Items" to add them to the list on the right. All of the selected items will be added to the export list

- Select Items from "Selection Tree" or from 3D viewer and choose "Add selected Items"
- All selected items will be added in the export list
- There is no limit to the number of items that can be added to the export list.



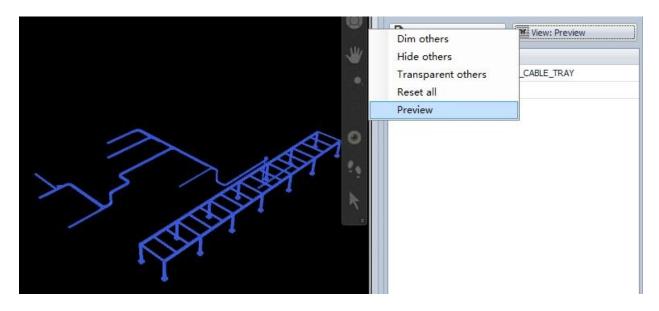
Select an item from the Export List to zoom into that item in the 3D viewer window.

Clicking on an item from the export list will allow you to customize the specific options for that item.

In order to customize settings, click on <u>View: Preview</u> to view the additional settings.

	s	electe	d Items	
	C	Add s	elected items 🛛 💌 View:	
		No.	Items	
	ł	1	/VCY-50	
		2	/DIFFSUER	
the second with the				
TAKE PELO				:
				-

View: Preview Settings Options



- Dim others: Dim all other items besides the selected items.
- Hide others: Hide all other items besides the selected items.
- Transparent others: Set all other items besides the selected items to be transparent.
- Reset all: Remove selected options to rest to default and show all items in the model.
- Preview: Preview how the selected items will be shown in the output file

Export PDF:

When preparing to export the PDF, there are two main options depending on whether you need to export as a single PDF file or a PDF file for each individual item:

Users can export all the items in the Export List into a single PDF file by setting the slider to "**Single**" and entering the PDF file name.

- 🗄 Output		
PDF Template	Default.pdf ~	
Output Folder	C:\Users\Mika Duong\Documents\PDF Output for NW	
File Name	1105_Full Single	Export

Additionally, the program can export each individual item in the Export List to an Individual PDF. In order to export multiple PDFs, set the slider to "**Multiple**" and then enter the file name for each item's Individual PDF next to each item on the Left.

Selected Items	Export Options
Co Add selected items	NEIGHBORS
No. Items File Name 1 /63200-L-013-HCD Pipe01 > 2 /63200-L-023-HCD Pipe02	Selected items only Selected items with neighbors
	Lengh Percentage 3D Offset Increase 3D space by: 0 (m) Max_X 0 Max_Y 0 Max_Z 0 Min_X 0 Min_Y 0 Min_Z 0
	PROPERTIES Exclude all properties Exclude properties
	- B Output
	PDF Template Default.pdf ~
	Output Folder C:\Users\Mika Duong\Documents\PDF Output for NW
	File Name 1105_Full 1 Multiple

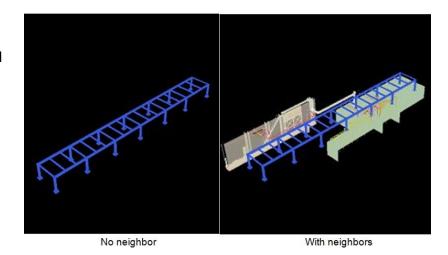
Customize Export Options:

Select items with neighbors:

Selecting this function allows you to extend the selected items' box and export all items in that extended box.

Set an Input value to extend to according to either length, percentage or 3D offset.	Export Options NEIGHBORS Selected items only Selected items with neighbors	
	Lengh Percentage 3D Offset Increase 3D space by: 0 (m)	
	Max_X 0 Max_Y 0 Max_Z 0 Min_X 0 Min_Y 0 Min_Z 0	

The resulting image will include the neighbors within the parameters set above and will be displayed like this:



Exclude Properties:

To change the exported properties, select "Exclude Properties"

Selecting **"Exclude all Properties"** will result in the exported file to not include any of the properties of the exported items.

If you want to exclude certain properties, check the properties you would like to be excluded. For example, in the displayed image **Type, Lock, and Bore** would be excluded (other unselected items would be included).

Exc	lude Properties		I	×
Select prop	erties to exclude			
A Prope	erties			*
🔺 📄 Ite	em			Ξ
	Name			_
	Туре			
	Internal Type			
	Icon			
	Hidden			
	Required			
	Material			
	Source File			
4 📃 M	aterial			
	Name			
	Ambient.Red			
	Ambient.Green			
	Ambient.Blue			
-	Diffuse.Red			Ψ.
		ОК	Cancel	

PDF Template

If you would like to use a special template for your exported file, please select the desired PDF Template from the drop-down menu.

Output		
PDF Template	Default.pdf ~	
Output Folder	Default.pdf Landscape.pdf Portrait.pdf	Export
File Name	Modify Template	

Modify PDF Template

(Note: Only Acrobat Reader Pro users can edit templates.)

Additionally, custom templates can be created and modified from within the program. After clicking "Modify Template" options to add, create, or edit existing templates will be displayed.

in Modify Template -		\times
PDF Template		
Default.pdf	Ad	d
Landscape.pdf Portrait.pdf	Dele	ete
	Ed	it
	Clos	se

After selecting "edit" and the desired PDF template, the adjacent window will be displayed.

At the top, the selected template file name will be displayed.

In the middle section, settings can be edited that will be reflected in the final output file. Click on the value section to edit the desired value.

i	n F	PDF Template Mapping		
	PDI	F Template\PDFTem	plates\ObjectExport\Default.pdf	select template file
		Text Fields	Value	
	F	Author	%System User%	
		Company	Intratech	
		Date	%Current Date%	
		Issued for		
		ModelFile	%Model Name%	select macro value
		Notes		
		ObjectName		
		1		
		Button Fields	Functions	
	۲	DimOther	DimOther	
		HideOther	HideOther	
		Reset	Reset	
		TransparentOther	TransparentOther	
		Unhide	Unhide	
		Window3DImage	Window3DImage	
		Zoom	Zoom	
			Save	

Output settings

Select the desired output folder for your file. If all the settings are correct, click the Export button to export the completed PDF File.

- 🗄 Output		
PDF Template	Default.pdf ~	
Output Folder	C:\Users\Mika Duong\Documents\PDF Output for NW ····	

Clash Exporter

Export Selected clashes

After selecting Export selected clashes, the results from clash tests and the clash items will be displayed.

If a new clash test was performed in Navisworks, select "Reload clashes" to update the Clash Report export list. The right side menu displays the results of different clash tests. You can select the test you would like to export the clashes from the list by checking it.

Clash De	etective					,9 X	
∧ Te	st 2					L	
							in 3D PDF Clash Exporter
	Name	Status Clas	hes	New	Active	Reviewed	Clash Items
	Test 1	Done 3		3	0	0	Contract Reload Clashes
	Test 2	Done 201		201	0	0	Select clash to export
							▶
							4 Test 2
							Clash1
		1					Clash2
📭 A	Add Test	Reset All Com	pact /	All Dele	te All	👌 Update All	
			7				
Rul	es Select	Results Report					
ſ .					n in the second s		
	ew Group	🖓 🚱 🚱 🖉 A	ssign				
Name		Col Status		Found		Approved By	
						Арргочей ву	
•	Clash1	New	tatus Clashes New Active Reviewed one 3 3 0 0 one 201 201 0 0 Select clash to export Test 1 Clash1 Clash2 Clash3 Clash4 Clash5 Clash6				
•	Clash2	New	•	13:35:42 2	24-08-2016		
•	Clash3	New	•	13:35:42 2	24-08-2016		
•	Clash4	New	-	13:35:42 2	24-08-2016		
•	Clash5	New	-	13:35:42 2	24-08-2016		Clash15
	Clash6	New	•	13:35:42 2	24-08-2016		Clash16
	Clash7						Clash17
	Clash8						
•	CIdSHO	New	•	15.55:42.2	14-00-2010		Clash19

When the desired items are displayed, click export to easily export your Clash Report.

PDF Template

	📇 Output			
Clash Reports also have the option to use customized PDF Templates.	PDF Template Output Folder	clash_report_template11.pdf ClashReport.pdf clash_report_template11.pdf Modify Template		Export
Users can add, delete and edi Clash Report Templates with t Modify Template options. The settings can be changed to customize what will be reporte the Clash Report.	t he se	Modify Template PDF Template ClashReport.pdf clash_report_template11.pdf	-	Add Delete Edit

In Modify Template form, the program will list up the sample template and all template was used.

User can select a template to delete or edit

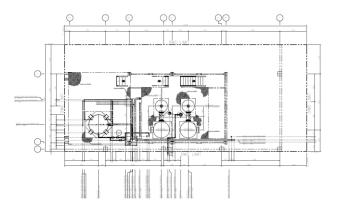
Besides, a new template can be added by import PDF template file and enter the value by manual or select macro value

	Text Fields	Value			
•	ClashDescription	%Description%	*		
	ClashDistance	%Distance%	=		
	ClashFound	%Clash Found%	=		_
	ClashName	%Clash Result Name%	-	_	select macro value
	ClashPoint	%Clash Point%			
	ClashResultComm	%Clash Result Comments%			
	ClashStatus	%Status of Clash Result%			
	ClashType	%Туре%	-		
	Button Fields	Functions			
Þ	Button_dim	DimOther	*		
	Button_hide	HideOther			
	Button_highlightA	HighlightItem1			
	Button_highlightB	HighlightItem2	_		
	Button_highlightcl	HighlightClashItems	Ξ		
	Button_resetview	Reset			
	Button_transparent	TransparentOther			
	Button_unhide	Unhide			
	Button_zoom	Zoom			
			- · ·		

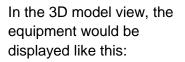
GA Exporter

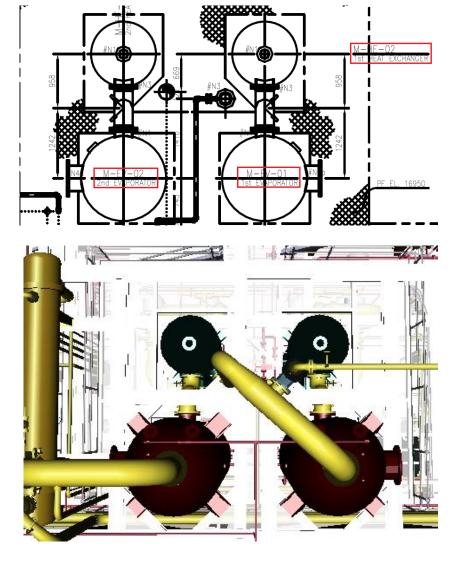
Each model loaded within Navisworks can have accompanying General Arrangement drawings (GA drawings).

These drawings can display the dimensions of one or multiple objects and can are viewed as 2D drawings from a topdown view, side-view, and front-view.



When looking at a zoomed into a GA drawing, the Tag numbers of Equipment or Pipelines can be seen adjacent to the relevant equipment.

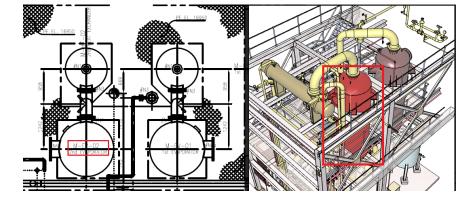




Using the 3D PDF Exporter for Navisworks allows you to link one 3D object with the specific Tag No from a 2D Drawing.

In the resulting 3D PDF, clicking on the Tag in 2D will then zoom in and display the relevant 3D image.

For example, by clicking "M-EV-02", this 3D object will be displayed.



Setting Mapping rules between 2D Tags and 3D Objects in NW

Using these settings will define the mapping rules for several design models, including Revit, PDMS and PDS. The current version of the GA export function creates a hyperlink for two item types (Piping and Equipment).

The default location of the Mapping file is C:\Program Files\Autodesk\Navisworks Manage 2014\Plugins\Intratech.3DAPPs.PDFExporter\MappingRules.xml

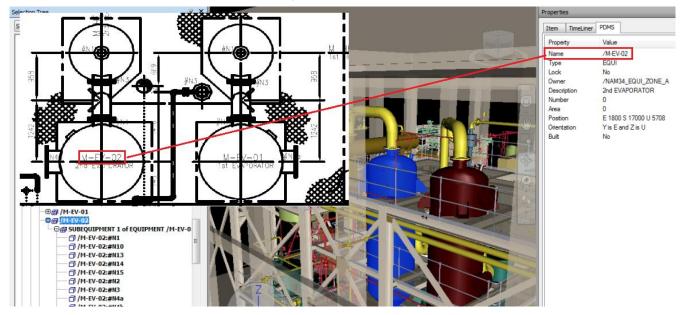
The mapping rules will be different depending on the model type.

	<ga></ga>
ф.	<model att="Element" name="REVIT"></model>
¢	<model att="PDMS" name="PDMS"></model>
þ	<pre><discipline_name="equipment"></discipline_name="equipment"></pre>
	<pre>1 <identifier att="PDMS" prop="Type" value="EQUI"></identifier></pre>
	<pre>2 <tagno att="Item" prop="Name"></tagno></pre>
白	<discipline name="PIPING"></discipline>
	<identifier att="PDMS" prop="Type" value="PIPE"></identifier>
	<tagno att="Item" prop="Name"></tagno>
-	
-	
Ē.	<model att="PDS Component Data" name="PDS"></model>
÷.	<model att="SP3D Common" name="SP3D"></model>

Using the 1st line <identifier>, the program will search all object that have same EQUI type in the PDMS attributes.

Using the 2nd line <tagno>, the program will compare the value within the Name properties of EQUI objects and the tags in 2D drawing.

If the values match, the program will automatically create a link between the two. If they are same, a link will be created automatically.



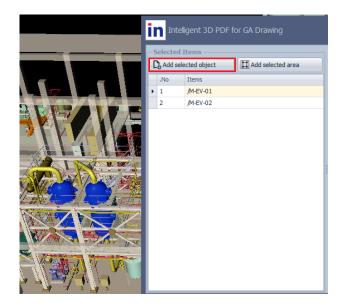
Add selected objects:

The functionality here is similar to Object Exporter.

You can choose Items from the "Selection Tree" or from 3D viewer itself. After selecting an object(s), click the "Add selected Object" to add all the selected items

to your export list.

All selected items will be added in the export list



To select the appropriate GA drawings to map with these objects, first select the output folder. Next, enter the file name and click the "Export" button to finish.

All of the files will relevant files will be exported into a single PDF File.

- 🗄 Output —	
GA Backingsheet	C:\Users\ADMIN\Desktop\New folder\SamplesAndBackin ····
Output Folder	C:\Users\ADMIN\Documents\PDF Output ···
File Name	1105_Full

Add selected areas:

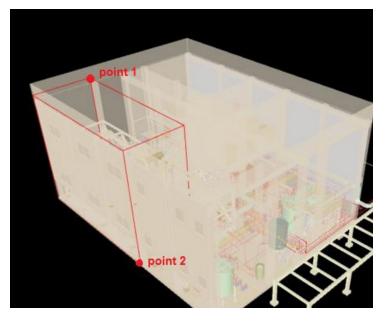
This function allows you to select an area of items for Export. You can select this area of items by creating a rectangular box around the desired items.

First, select the "Add Selected Area" button.

Next, in the 3D viewer of Naviswork, draw the box around the desired section by selecting two points.

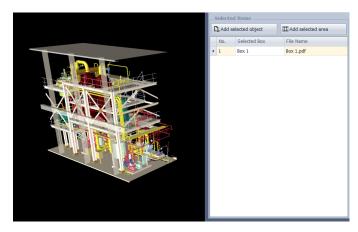
Set a min point and a max point and then the program will create a box around the two points.

Press "Enter" key to add this box to the list. The default name setting will be "Box 1" and continue as more areas are added.



Clicking on "Box 1" will display the created box in the 3D viewer.

Note: You need to select an area which contains 3D objects for those that you intend to link with Tags in 2D backing sheet.



When ready to export, select the GA drawing for this area. Then enter the file name of the output PDF file and click "Export" to finish.

GA Backingsheet Option					
Output Folder	C:\Users\Mika Duong\Documents\PDF Output for NW				
File Name	1105_Full	Export			

ISO Exporter

This function allows you to combines ISO drawings with their corresponding 3D pipeline sections into a 3D PDF file.

Requirements to use this function:

- 1. The Backing sheet folder must contain ISO drawings.
- 2. For automatic ISO drawing 3D PDF, the ISO drawing name needs to match the properties specified in the mapping rule.

Mapping ISO drawing with 3D object:

The default location for the mapping file for making hyperlinks is located in

C:\ProgramFiles\Autodesk\NavisworksManage2014\Plugins\Intratech.3DAPPs.PDFExporter\MappingRules.xml

By checking the <ISO> Section, you can define the link between ISO drawing and 3D Pipelines.

¢	<iso></iso>
¢	<model att="PDMS" name="PDMS"></model>
¢	<pre><discipline name="PIPING"></discipline></pre>
	<identifier att="PDMS" prop="Type" value="PIPE"></identifier>
	<tagno att="PDMS" prop=":LINENO"></tagno>
-	
-	
申_	<model att="PDS Component Data" name="PDS"></model>
申_	<model att="Element" name="REVIT"></model>
-	

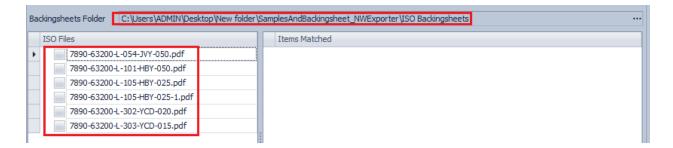
PDMS models: The ISO drawing's file name will be mapped according to the LINENO property of the 3D objects.

If the ISO drawing's file name is the same as the property "LINENO" of an object within the 3d model, a link will be created automatically.

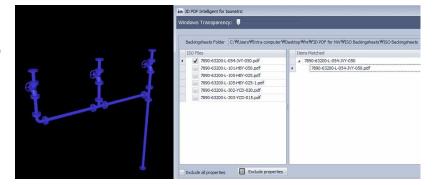
operties		Saved 5	6 7		-
tem PDMS Tin	neLiner Material	ved vi			
Property	Value	Views			
ock	No		D PDF for Isometric		
)wner	/NAM34_SB_ZONE				
escription	PH. REA. COAG. TANK				
Built	No	Backingsheets Folder	C:\Users\ADMIN\Desktop\We	w folder\Sam	nplesAndBackingsheet_NWExporter\ISO Ba
Shop	No				
lore	0	ISO Files			Items Matched
emperature	-100000	▶ 🗸 7890-6320	00-L-054-JVY-050 pdf	•	▲ 7890-63200-L-054-JVY-050
ressure	0	7890-6320	00-L-101-HBY-050.pdf		7890-63200-L-054-JVY-050.pdf
spec	/JVY	7890-6320	00-L-105-HBY-025.pdf		
Coentre	0	7890-6320	00-L-105-HBY-025-1.pdf		
Cclass	0		00-L-302-YCD-020.pdf		
rection	0		00-L-303-YCD-015.pdf		
Rev	-1	7890-0320	10-1-303-1 CD-013,put	:	
afclass	0				
issue	No	/			
√maximum	0				
maximum	85				
Smaximum	12				
maximum	0				
Ristored	Unset				
Deldsg	No				
DWGNO	3-478-P195-121				
LINENO	7890-63200-L-054-JVY-050	Exclude all proper	ties Exclude properties		
DWGTITLE1	PH,REA, COAG, TANK	- 📇 Output Folder			
DWGTITLE2	DRAIN HEAD (TO SUMP)				
PIDDWGNO	7890-63200-FH-105-001,007	Culture and ADMID	Decements IDDE Output		
FLUIDCODE	DRAIN	C: Users (ADMIN)	Documents\PDF Output		
DGNPRESSURE					
DGNTEMP	50.00				
OPTEMP	AMB				
OPPRE	ATM				
INSU					
:NOTE1	NA	-			

Creating ISO drawings in 3D PDF

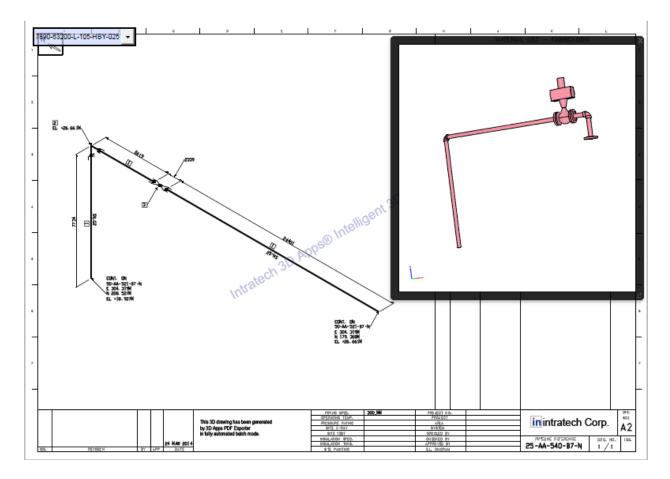
Select the folder that contains the relevant ISO Drawings. After selected the folder, the ISO files will be listed in the ISO files field on the left.



When clicking on the loaded ISO drawing, the program will automatically search corresponding pipelines to create a direct link.



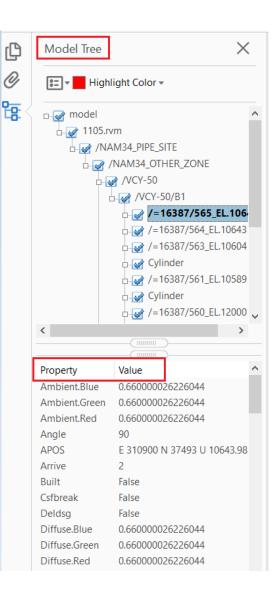
After checking and correctly matching all ISO drawings and 3D Pipelines, click Export. The resulting files will be displayed as below:



3D PDF output file

The top section will show the Hierarchy of the exported model. To navigate to that section of the 3D PDF, simply click on the item from the model tree.

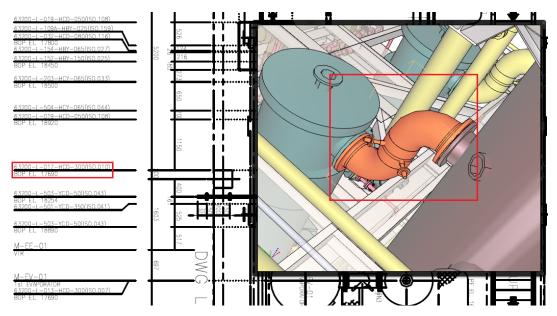
Additionally, clicking on a node will show the properties of that specific note. This will be included if selected during exporting.



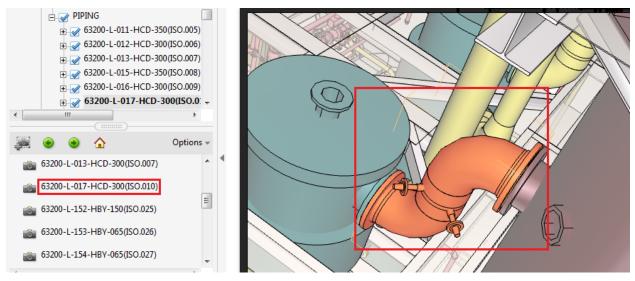
2D-3D Links

Setting 2D-3D links is currently only supported with GA Exporter.

Select a 2D link in the drawing to zoom into that object in the 3D viewer.



Alternatively, click on the 2D link from the list to display the 3D image.



Foreign Language Compatibility

By default, all languages besides English are not supported in Acrobat Reader. If you are using a language besides English in the model, please download the relevant language pack from the Acrobat website.

Settings

- Exclude Hidden Objects: Set to "On" to not export objects that were hidden in 3D view.
- 3D Content Format: this option allows you to set the outputted PDF format.

Note: BlueBeam Vu reader can open only U3D format and fixed viewport PDF files.

To read in BlueBeam Vu,

- Convert to U3D
- Export with fixed viewport.
- Do not combine 2D & 3D
- **Model render mode**: Use the drop-down menu to select the render style for exported objects in PDF files.
- Light scheme: Select the light mode for exported objects in PDF file.

3D Objects		
Exclude Hidden Objects	On	
3D Content Format	PRC U3D	
3D DISPLAY		
Model Render mode	ShadedIllustration	*
Light Scheme	CAD	•
Background Color	255, 255, 255	•
ACROBAT READER T	OOL	
Show Toolbar	Off	
Open Model Tree	On	

- **Background color**: Set color for the background of the PDF file.
- **Show toolbar**: Set to "On" to set whether the toolbar is shown when opening the output file.
- **Open model tree**: Check this box to set if the model tree is shown when opening the output file.

About

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