Chapter 1
Working Procedures

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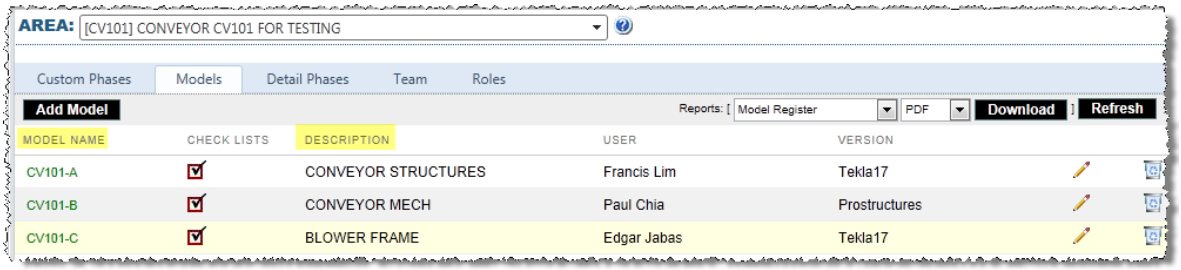
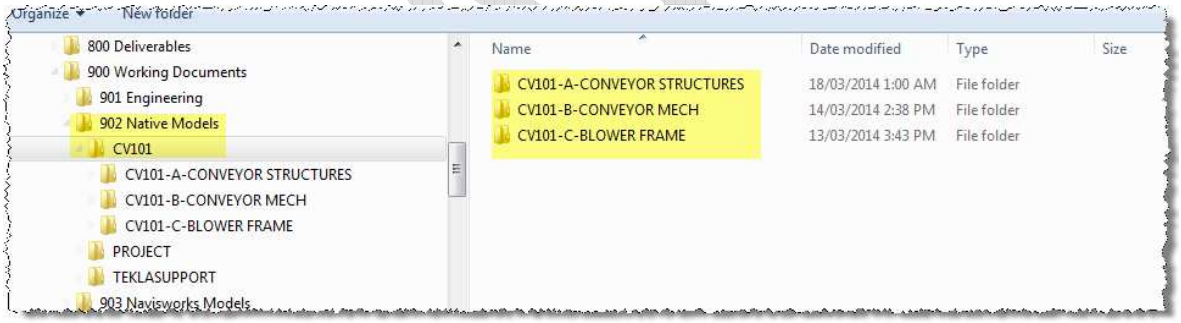
1 Model Setup

1.1 Creating the Tekla model

Tekla models for Resources shall be registered first in the JMS model register.



After saving the register, initial Tekla model will then be created under “T:\Job No\900 Working Documents\902 Native Models\Area” folder as below:



Full Model Names are automatically taken from the MODEL NAME and DESCRIPTION in the above.

The initial model will then be copied or by syncing thru JMS Tool Suite by the assigned USER of the model.

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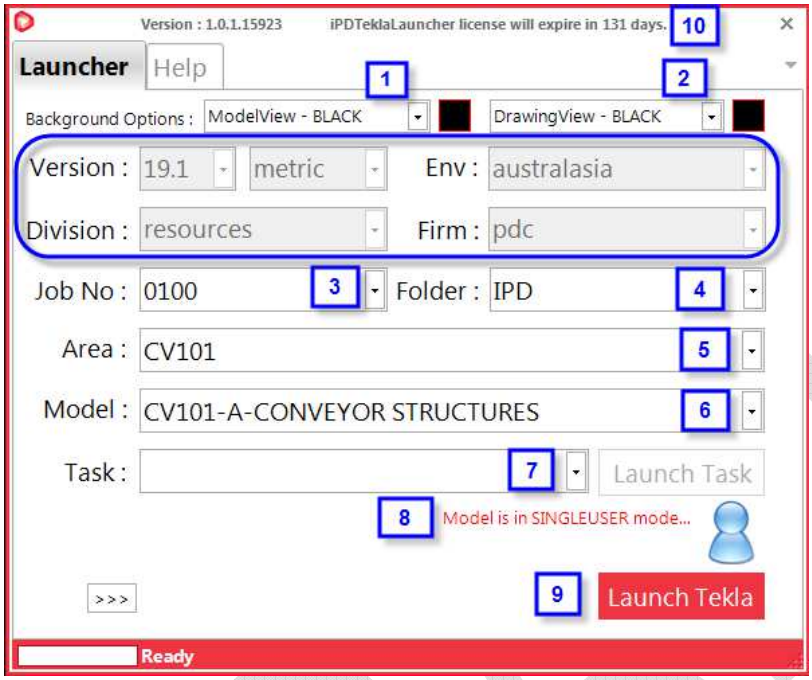
1.2 iPDTekla Launcher

Open the Tekla model using the iPDTekla Launcher interface below:



1 - Preference for BLACK or WHITE Model View Background

2 - Preference for BLACK or WHITE Drawing View Background

3 - Select Job Number from this Pull-down Menu. Version, Division, Env and Firm will be automatically filled-in upon selecting a Job Number.

4 - Select Model Folder from this Pull-down. For jobs created after IPD JMS System3 was implemented, the default is on IPD folder.

5 - Select Job Area from this Pull-down Menu.

6 - Select the Model from this Pull-down Menu.

7 - NOT IN USE. Future Enhancement.

8 - Upon model selection, this will indicate whether the model is in Multi or Single User mode.

9 - Click to Launch Tekla after model selection.

10 - iPDTekla Launcher license remaining days. Controlled by Technical Manager.

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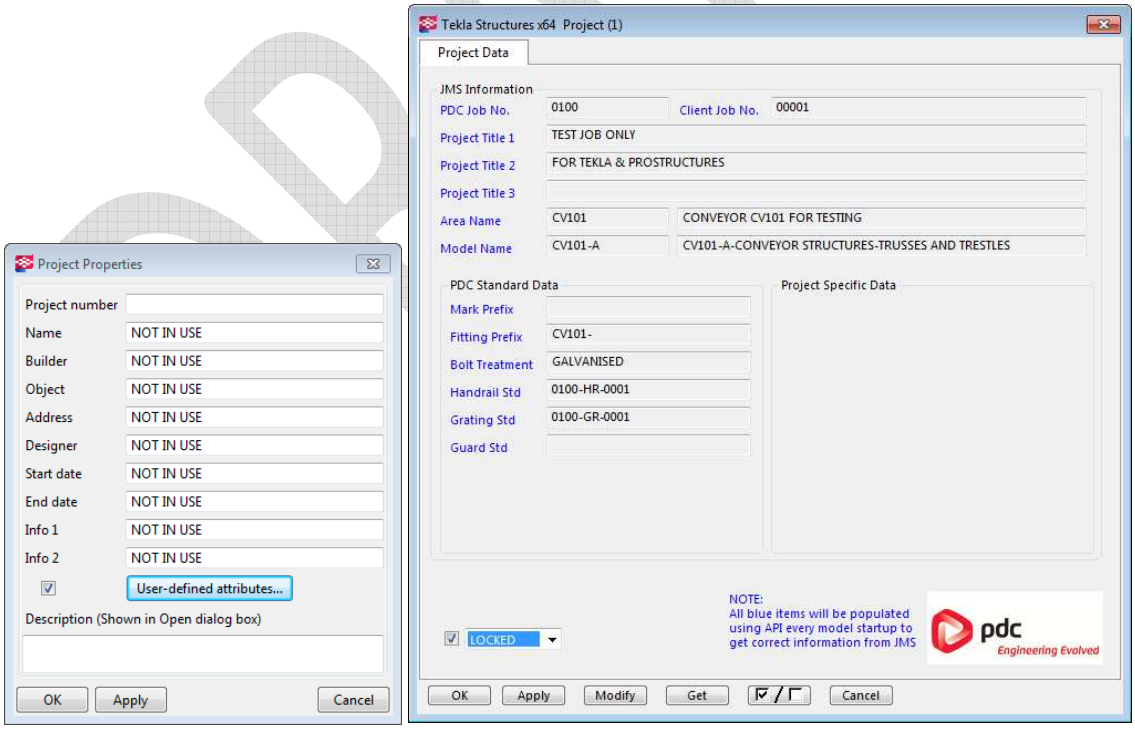
1.3 Tekla Structures Login Interface

1 - Default to be kept as iPDTekla

2 - Select a license configuration that suits your role. If in doubt, ask your PM.

1.4 Project Properties



All entries will be automatically filled-in here. No need for user input, just confirm if all entries are as specified in JMS.

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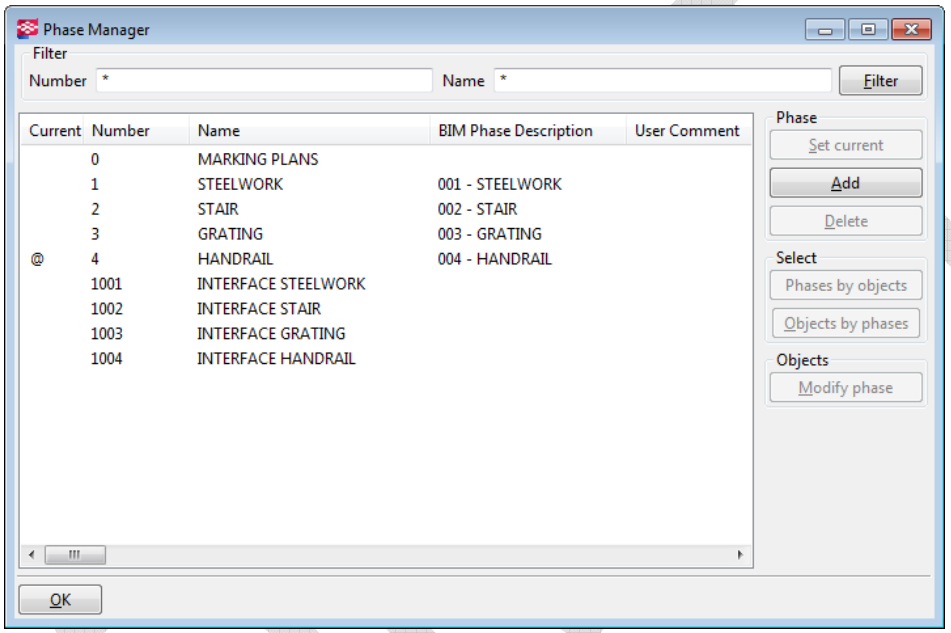
1.5 Phase Names, BIM Phase Description

The same application used in the auto-filling of the Project Properties at Tekla start-up, the Phase Numbers and Names registered in JMS for each respective model will be automatically filled-in and updated.

In addition, the BIM Phase Description column which will be used as additional properties for IFC export is also automatically filled-in.

Users will just need to add Phase names that they might need for other interfaces like civil/concrete, mechanical equipment, piping, cable trays and other electrical equipment.



2 Modelling Stage

2.1 General

For every project, a Site Layout Model will always be the first to be allocated, where a Site Datum will be determined. From this location, setting out of the Structure Gridlines and Conveyor centre lines can begin in accordance with the design drawings. In the absence of this, confirm with Project Leader as to where to locate your model.

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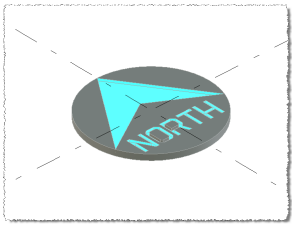
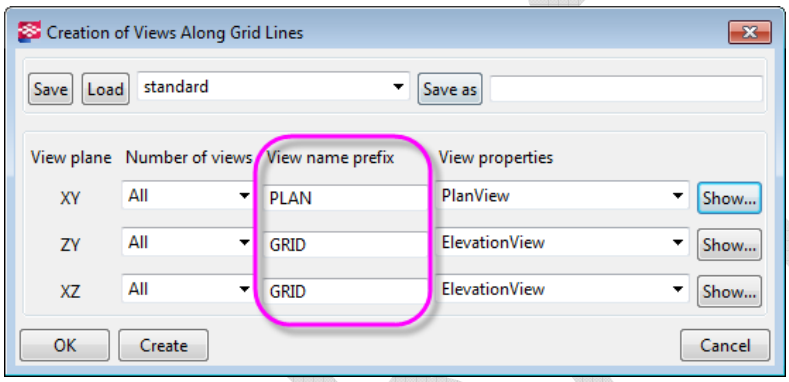
2.2 Site North Direction and Grid Line Views

A weightless Site/Plant North direction dummy part has been created for insertion into the intersection of the first X & Y Grids (e.g. Grid A – 1). This will just serve as a modeling aide.

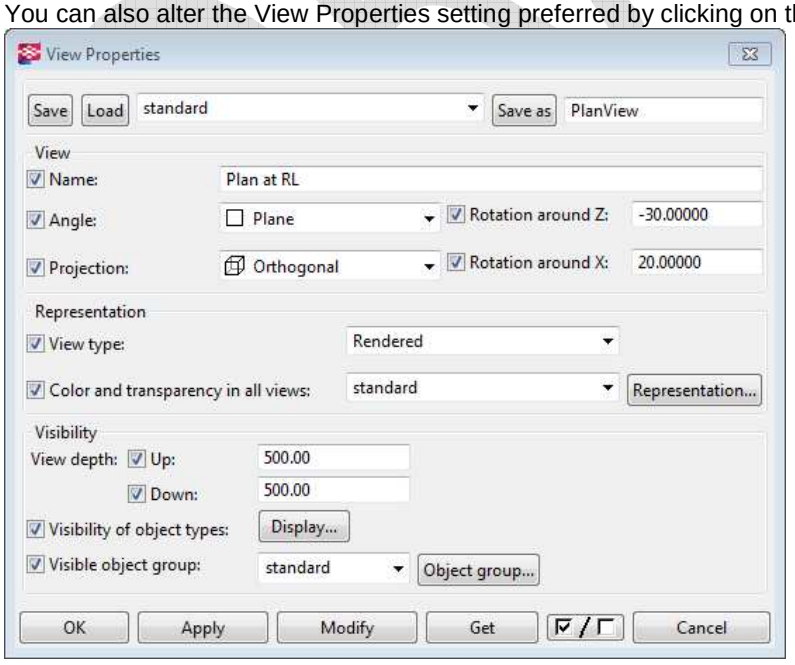


Creation of Views Along Grid Lines

Below are the default prefixes of Grid Lines Views. This can be edited to match with the design drawings or to the preferred view label in the Marking Plans.



You can also alter the View Properties setting preferred by clicking on the “Show” button.



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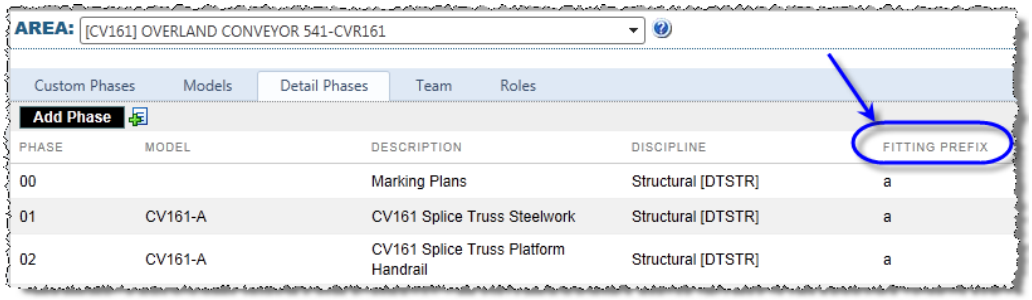
2.3 Assembly, Part and Fitting Prefixes, Part Naming Conventions and Cost Codes

1. **Part Prefix** is pre-assigned in JMS for each respective Phase and numbers are to be allocated prior to detailing:

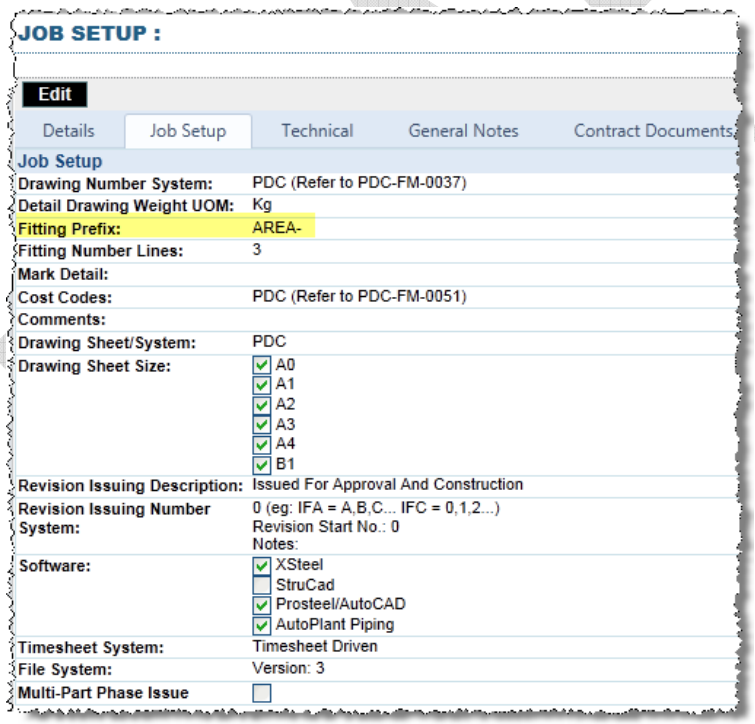


2. **Assembly Prefix** is commonly "AREA-PHASE NO-"

   For the above snap shot for example, "CV161-01-" for Phase 01 and "CV161-02-" for Phase 02.

   Refer to JMS information for each corresponding job.

3. **Fitting Prefix**, in addition to the Part Prefix, this may be added before the Part prefix, usually the AREA-, is also pre-assigned in the Job Setup tab in JMS as below:



4. Part Naming Convention

   Part Names are related to the Cost Codes being set in JMS. When modeling using the "Model Builder Tool" in the iPDTeklaTool Application, Part Names are predefined and the appropriate Cost Codes will be designated to the part upon modeling. It is very important to have the correct part names as the Cost Codes rely mainly on it.

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Below are the predefined Part Names. Additional Part Names will be added if necessary:

PREDEFINED PART NAMES		
BAR	HANDRAIL_WITH_KPLATE	SAFETY_GUARD_FRAME
BEAM	HANGING_HOPPER	SAFETY_MESH
BEAM_BFS	HBRACE	SHEDDER_PLATE
BELT_CLEANER	HBRACE_BFS	SHEET_RUBBER_CURTAIN
BELT_PLOUGH	HEAD_END_STRINGER	SHUTTLE_FRAME
BILLET_LINER	HEAD_FRAME	SHUTTLE_RAIL
BIN	HOLLOW_COLUMN	SINGLE_LEVEL_TRUSS
BISALLOY_LINER	HOLLOW_COLUMN_BFS	SITE_CLEAT
BONDED_RUBBER	HOLLOW_HBRACE	SITE_PLATE
BRACKET	HOLLOW_HBRACE_BFS	SKIRT_COVER
BRACKET_BFS	HOLLOW_POST	SKIRT_PANEL
CABLE_TRAY	HOLLOW_POST_BFS	SKIRT_SUPPORT
CERAMIC_LINER	HOLLOW_VBRACE	STAIR
CHUTE	HOLLOW_VBRACE_BFS	STAIR_BFS
CLADDING	HOOD	STAIR_TREAD
CLADDING_BFS	HOPPER	STRINGER_SUPPORT
CLEAT	LADDER_NO_CAGE	SUMP_PLATE
CLEAT_BFS	LADDER_WITH_CAGE	TAIL_END_STRINGER
COLUMN	LAUNDER_PLATE	TAIL_FRAME
COLUMN_BFS	LOW_LEVEL_MODULE	TAKE_UP_BOX
COVER_PLATE	MANHOLE	TAKE_UP_TROLLEY
COVER_PLATE_BFS	MID_LEVEL_MODULE	TANK
CRANE_RAIL	MONORAIL	TANK_BASE
DOMITE_LINER	MONORAIL_BFS	TANK_FLOOR
DUCT	NI-HARD_LINER	TANK_NOZZLE
DUEL_LEVEL_TRUSS	PIPE_SUPPORT	TANK_ROOF
EVERHARD_LINER	PLATE	TANK_SHELL
FASCIA	PLATE_BFS	TRESTLE
FASCIA_BFS	POLYCER_LINER	UHMWPE_LINER
FIELD_DEVICE_BRACKET	POST	VBRACE
FLOOR_GRATING	POST_BFS	VBRACE_BFS
FLOOR_PLATE	PURLIN	WALKWAY_GRATING
FRAME	PURLIN_BFS	WELDED_BEAM
FRAME_BFS	RAIL	WELDED_BEAM_BFS
GATE	RAIL_BFS	WELDED_COLUMN
GIRT	RAIL_LINER	WELDED_COLUMN_BFS
GIRT_BFS	RUBBER_LINER	WELDED_VBRACE
HANDRAIL_NO_KPLATE	SAFETY_GUARD	WELDED_VBRACE_BFS
HANDRAIL_STAIR	SAFETY_GUARD_FRAME	WIND_HOOP

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Below is a snap shot of the Model Builder Interface.

The upper portion, which is the JMS COST CODE INFORMATION, data will be filled in automatically upon Part Name selection. The assigned Cost Code can be seen in the part's UDA.

Refer to Document No. XXXXXXX for the iPDTekla Tool and Model Builder Documentation for more details about Part Naming and Cost Code application.

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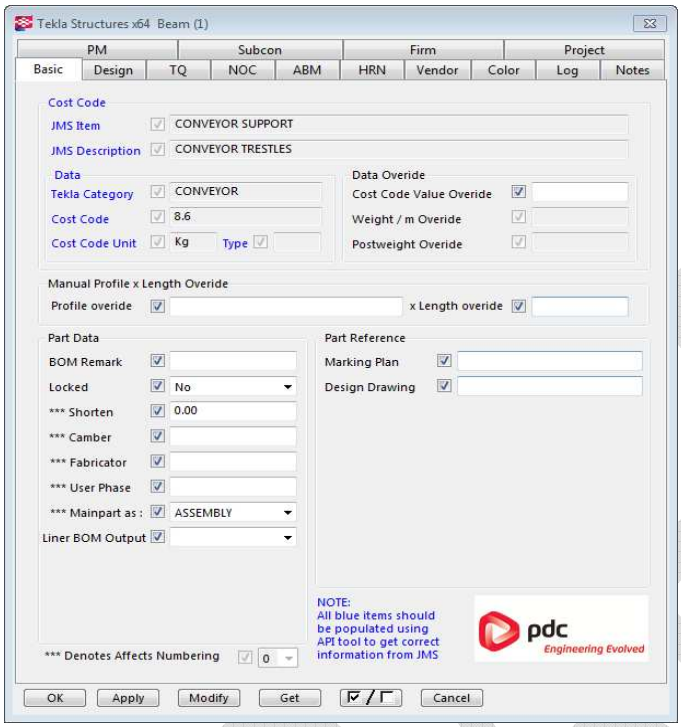
5. The new Part's UDA interface.

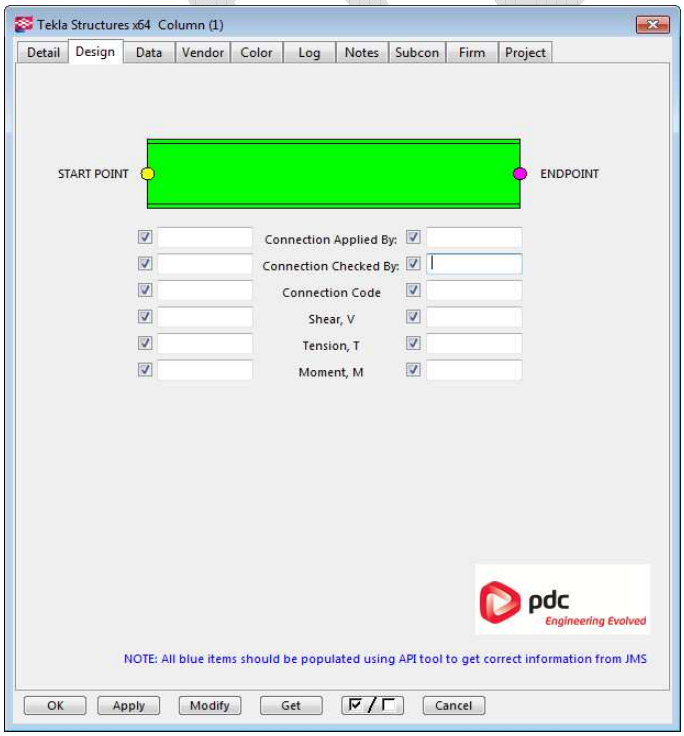
   The Detail Tab.



- This tab contains the Part Data, Part Reference, Manual Profile and Length Override and the Cost Code data from JMS.
- Refer to the iPDTeklaTool for more details about Cost Code Application.
-

PARAMETER NAME	ATTRIBUTE NAME
JMS Item	PARTJMSITEM
JMS Description	PARTJMSDESC
Tekla Category	PARTCATEGORY
Cost Code	PARTCOSTCODE
Cost Code Unit	PARTCOSTCODEUNIT
Type	PARTCOSTCODETYPE
Cost Code Value Overide	PARTVALUEOVERIDE
Profile overide	PARTPROFILEOVERIDE
Weight /m Overide	PARTWEIGHTOVERIDE
Postweight Overide	PARTPOSTWTOVERIDE
x Length overide	PARTLENGTHOVERIDE
BOM Remark	comment
Marking Plan	PARTMARKINGPLAN
Design Drawing	PARTDESIGNREF
Locked	OBJECT_LOCKED
***Shorten	xs_shorten
***Camber	cambering
***Fabricator	PARTFABRICATOR
***User Phase	PARTUSERPHASE
***Mainpart As:	PARTMAINITEM
Liner BOM Output	PARTLINERMISC

The Design Tab.



- The user who applied the connection and the user who checked the connection will be automatically populated here if tagged thru the iPDTeklaTool.

PARAMETER NAME	ATTRIBUTE NAME
START POINT	axial1
ENDPOINT	axial2
Connection Applied By:	CONN_APP_END1
Connection Applied By:	CONN_APP_END2
Connection Checked By:	CONN_CHK_END1
Connection Checked By:	CONN_CHK_END2
Connection Code	CONN_CODE_END1
Connection Code	CONN_CODE_END2
Moment, M	moment1
Moment, M	moment2
Shear	shear1
Shear	shear2

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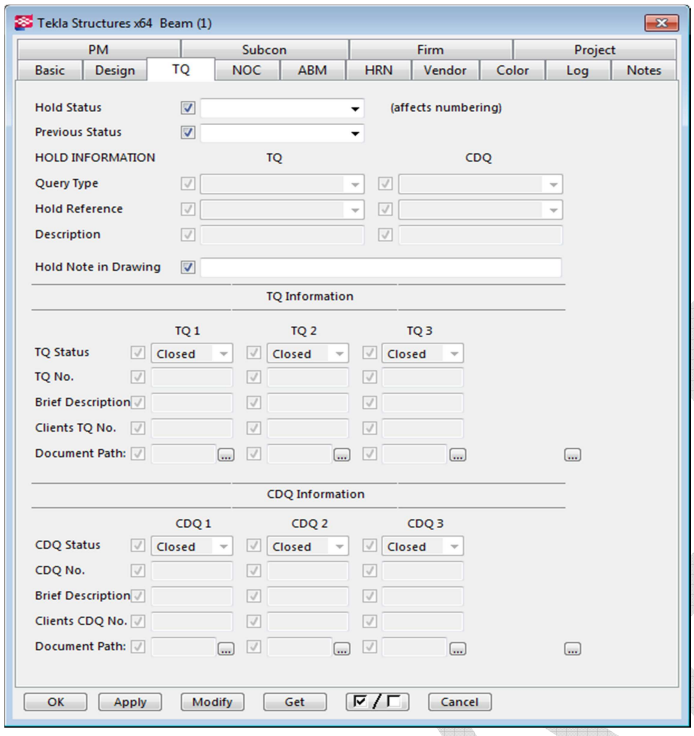
The TQ Tab.



- This tab contains the TQ and HOLD information.

PARAMETER NAME	ATTRIBUTE NAME
Hold Status	MEMBER_STATUS
Previous Status	PREVIOUS_STATUS
RFI Query Type	RFIQueryType
CDQ Query Type	CDQQueryType
RFI Hold Reference	HOLD_INFO
CDQ Hold Reference	CDQHOLD_INFO
RFI Description	HOLD_DESC
CDQ Description	CDQHOLD_DESC
Hold Note in Drawing	HOLD_NOTES
RFI Status	RFI1_STATUS, RFI2_STATUS, RFI3_STATUS, ...
RFI No.	RFI1_NUM, RFI2_NUM, RFI3_NUM, ...
RFI Brief Description	RFI1_DESC, RFI2_DESC, RFI3_DESC, ...
Clients RFI No.	RFI1_CLIENT_NUM, RFI2_CLIENT_NUM, RFI3_CLIENT_NUM, ...
RFI Document Path	RFIDocPath1, RFIDocPath2, RFIDocPath3, ...
CDQ Status	CDQ1_STATUS, CDQ2_STATUS, CDQ3_STATUS, ...
CDQ No.	CDQ1_NUM, CDQ2_NUM, CDQ3_NUM, ...
CDQ Brief Description	CDQ1_DESC, CDQ2_DESC, CDQ3_DESC, ...
Clients CDQ No.	CDQ1_CLIENT_NUM, CDQ2_CLIENT_NUM, CDQ3_CLIENT_NUM, ...
CDQ Document Path	CDQDocPath1, CDQDocPath2, CDQDocPath3, ...

The NOC Tab.

- This tab to contain the part's Notice of Change information..

PARAMETER NAME	ATTRIBUTE NAME
NOC No. :	CO1_NUM, CO2_NUM, ..., CO9_NUM
Engineer's Ref:	CO1_ENGREF, CO2_ENGREF, ..., CO9_ENGREF
Date:	CO1_DATE, CO2_DATE, ..., CO9_DATE
Description:	CO1_DESC, CO2_DESC, ..., CO9_DESC
Changes To This Part:	CO1_DET, CO2_DET, ..., CO9_DET

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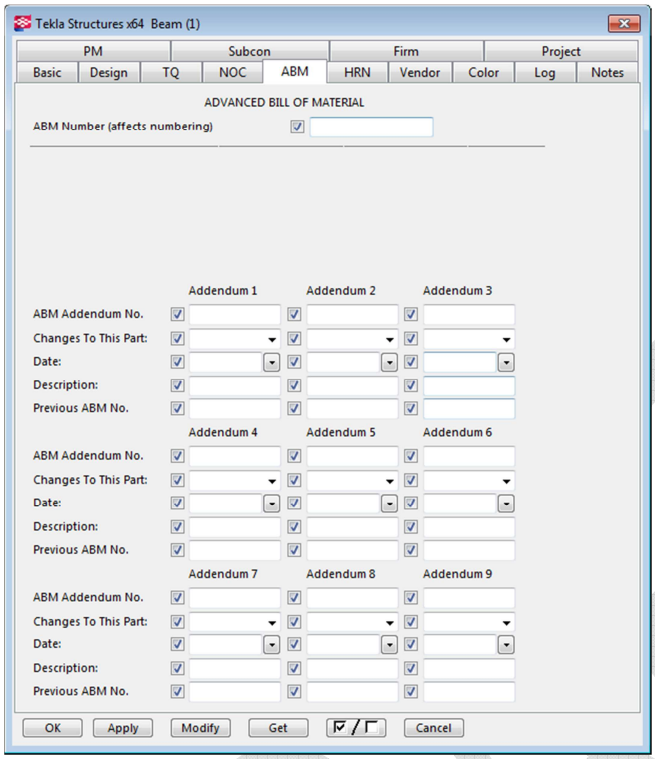
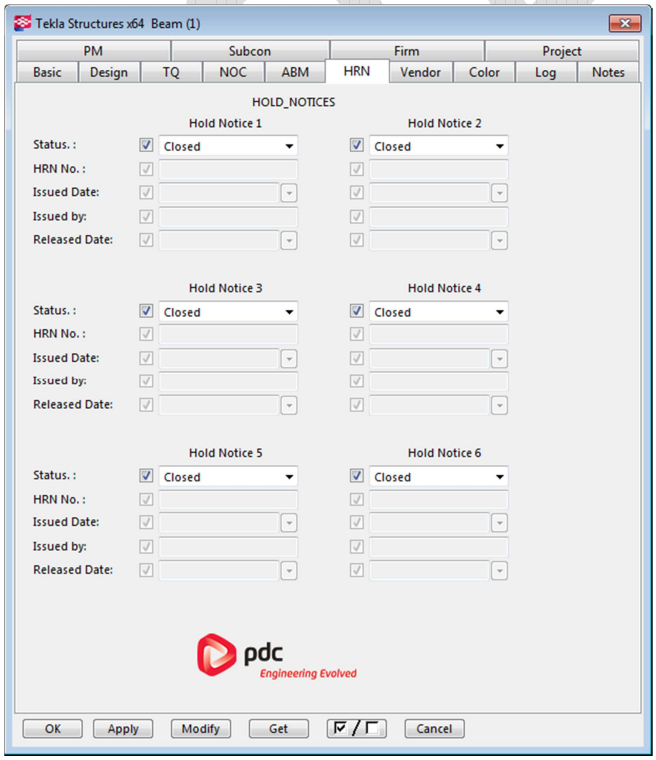
The ABM Tab.



- This tab to contain the part's Advance Bill of Material Information.

PARAMETER NAME	ATTRIBUTE NAME
ABM Number	PRELIM_MARK
Profile	4DCM_PROFILE
New Profile	4DCM_PROFILENEW
Length	4DCM_LENGTH
New Length	4DCM_LENGTHNEW
Material	4DCM_MATERIAL
New Material	4DCM_MATERIALNEW
Code	4DCM_CODE
ID No.	4DCM_ID
ABM Addendum No.	ADD1_NUM, ADD2_NUM... ETC
Changes to this Part	ADD1_TYPE, ADD2_TYPE... ETC
Date	ADD1_DATE, ADD2_DATE... ETC
Description	ADD1_DESC, ADD2_DESC... ETC
Previous ABM No.	ADD1_PRE, ADD2_PRE... ETC

The HRN Tab.



- This tab to contain the part's Hold Notices.

PARAMETER NAME	ATTRIBUTE NAME
Status	HRN1_STAT, HRN2_STAT... ETC
HRN No:	HRN1_NUM, HRN2_NUM... ETC
Issued Date:	HRN1_ISSUEDATE, HRN2_ISSUEDATE... ETC
Issued by:	HRN1_ISSUEDBY, HRN2_ISSUEDBY... ETC
Released Date:	HRN1_RELDATE, HRN2_RELDATE... ETC

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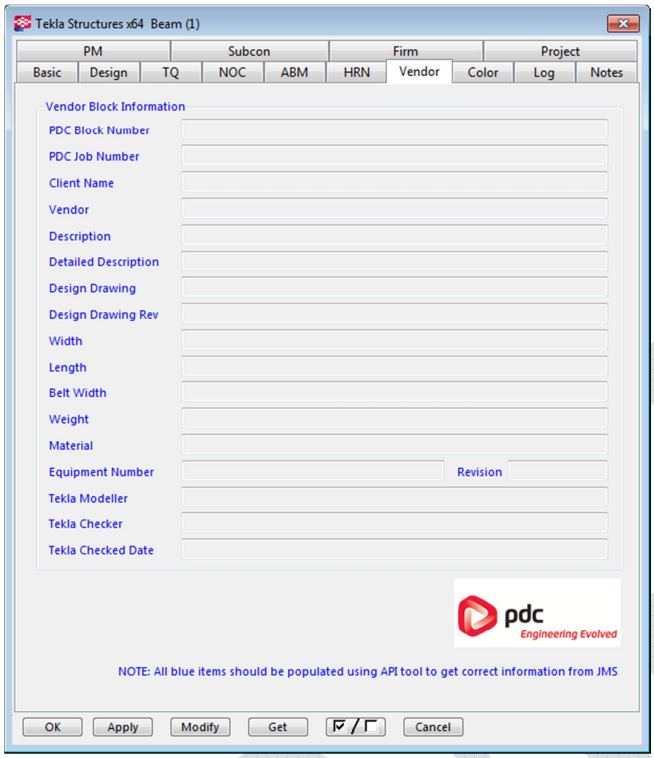
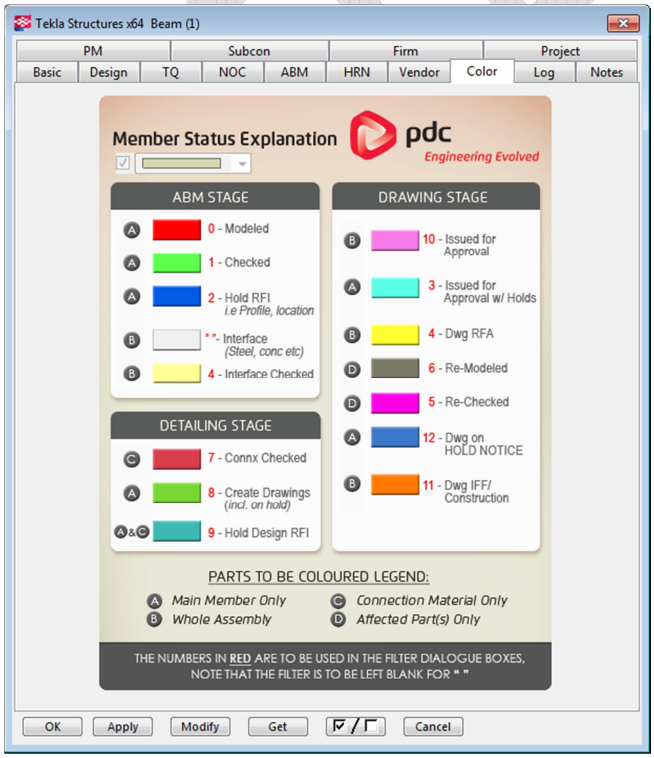
The Vendor Tab.



- This tab contains the Vendor Block Information.

PARAMETER NAME	ATTRIBUTE NAME
PDC Block Number	0Block_ID
PDC Job Number	0JobNo
Client Name	0Client
Revision	0BlockRev
Vendor	0Vendor
Description	0Description
Detailed Description	0DetailedDescription
Design Drawing	0DesignDwg
Design Drawing Rev	0DesignDwgRev
Width	0Width
Length	0Length
Belt Width	0BeltWidth
Weight	0Weight
Material	0Material
Equipment Number	0EquipmentNo
Tekla Modeller	0Modeller
Tekla Checker	0Checker
Tekla Checked Date	0DateChecked

The Color Tab.



- This tab contains the Part Color Status.
- Color tagging of parts is done using the iPDTeklaTool.
- Refer to the iPDTeklaTool documentation for more details about Color Coding.

PARAMETER NAME	ATTRIBUTE NAME
Member Status Explanation	COLOR

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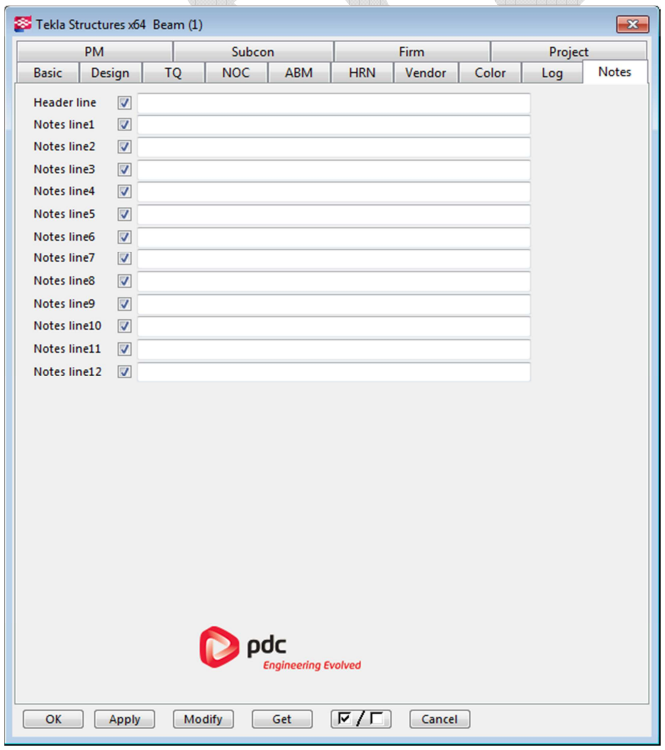
The Log Tab.

- This tab contains the Parts status which will be automatically populated thru the iPDTeklaTool.

PARAMETER NAME	ATTRIBUTE NAME
Checked Conx	PARTCHECKCONNX
Member Finalised	PARTCHECKFINAL
Checked Stick	PARTCHECKSTICK
Part GUID	PARTGUID
Issued IFA Mark	PARTIFAMARK
Detail	PARTIFAMARKDETAIL
Issued IFC Mark	PARTIFCMARK
Detail	PARTIFCMARKDETAIL

The Notes Tab.



- This tab contains the Notes to Override the standard Drawing Notes if the “Drawing Note Override” in the drawing UDA is set to “Yes”.

PARAMETER NAME	ATTRIBUTE NAME
User Notes 01	PARTUSERNOTE01
User Notes 02	PARTUSERNOTE02
User Notes 03	PARTUSERNOTE03
User Notes 04	PARTUSERNOTE04
User Notes 05	PARTUSERNOTE05
User Notes 06	PARTUSERNOTE06
User Notes 07	PARTUSERNOTE07
User Notes 08	PARTUSERNOTE08
User Notes 09	PARTUSERNOTE09
User Notes 10	PARTUSERNOTE10
User Notes 11	PARTUSERNOTE11
User Notes 12	PARTUSERNOTE12
User Notes 13	PARTUSERNOTE13
User Notes 14	PARTUSERNOTE14
User Notes 15	PARTUSERNOTE15
User Notes 16	PARTUSERNOTE16
User Notes 17	PARTUSERNOTE17
User Notes 18	PARTUSERNOTE18
User Notes 19	PARTUSERNOTE19
User Notes 20	PARTUSERNOTE20

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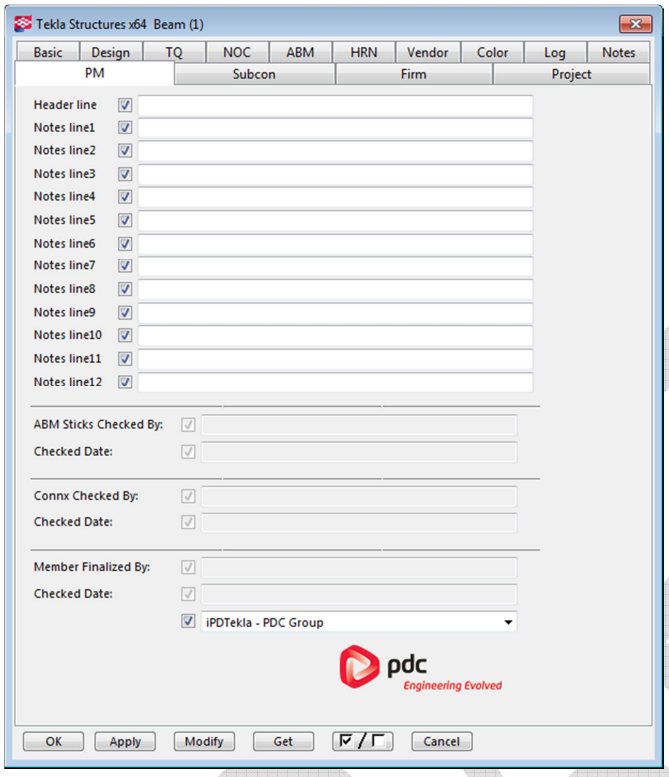
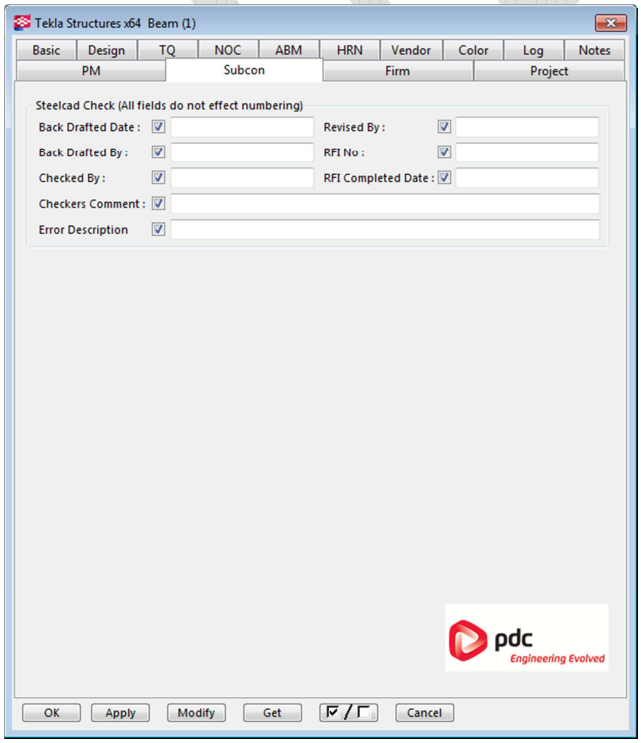
The PM Tab.



- This tab contains the Parts status which will be automatically populated thru the iPDTeklaTool.

PARAMETER NAME	ATTRIBUTE NAME
Header Line	PMNOTES0
Notes Line 1	PMNOTES1
Notes Line 2	PMNOTES2
Notes Line 3	PMNOTES3
Notes Line 4 - 12	PMNOTES4, PMNOTES5... ETC
ABM Sticks Checked By	CHECKED_BY
ABM Sticks Checked Date	CHECKED_DATE
Connx Checked By	CONNX_CHECKED_BY
Connx Checked Date:	CONNX_CHECKED_DATE
Member Finalized By	FINAL_CHECKED_BY
Member Finalized Checked Date	FINAL_CHECKED_DATE

The Subcon Tab.



- This tab contains Subcon specific data.
- The remaining “Firm” and “Project” tabs are for Firm and Project specific requirements and are not used for the time being.

PARAMETER NAME	ATTRIBUTE NAME
Back Drafted By	SCAD_BD_BY
Back Drafted Date	SCAD_BD_DATE
Checkers Comment	SCAD_CHECK_COMMENT
Checked By	SCAD_CHECKED_BY
Error Description	SCAD_ERROR
Revised By	SCAD_REVISED_BY
RFI No:	SCAD_RFI
RFI Completed Date:	SCAD_RFI_DATE

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3 Detailing Stage

3.1 General

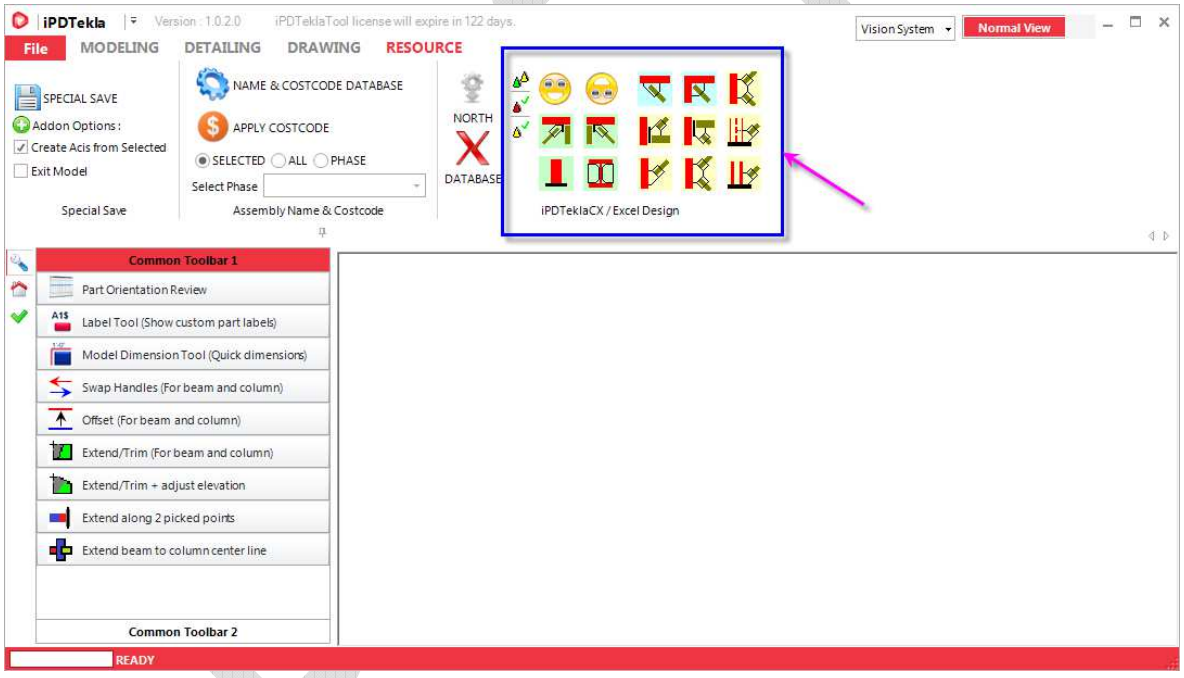
Excel Design or Smiley shall be utilized as much as possible for connection modeling.

A connection builder, iPDTeklaCXTool is a Work-In-Progress now which will eventually replace Smiley.

3.2 Excel Design / Smiley

Excel Design Data shall be checked and reviewed by the Project Leader for each job or project prior to deployment.

The Excel Design toolbar is now within the iPDTeklaTool.



Refer to **DT-AUS-WI-0328** for more details on using Excel Design / Smiley.

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4 Numbering

4.1 General

The parts' prefixes and numbering settings described herein are the current PDC default or standard setup. Project specific settings maybe adopted for other or some future projects. Final numbering settings must always be referred to JMS, General Notes, Overview of Drawing System.

IMPORTANT! Before starting with numbering, it is always vital to check your model if all the part and assembly prefixes and start numbers are correct to avoid numbering conflicts.

4.2 Part Numbering Series

The parts' prefixes and numbering settings described herein are the current PDC default or standard setup. Project specific settings maybe adopted for other or some future projects. Final numbering settings must always be referred to JMS, General Notes, Overview of Drawing System.

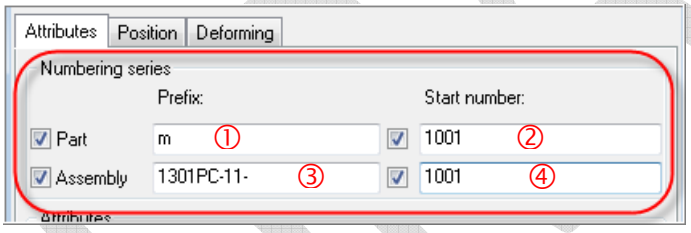
ASSEMBLY / MAIN PART NUMBERING SERIES

① Main Part Prefix = "m" (If main part = Assembly is set, this will be automatically same as Assembly mark)

② Main Part Start Number = 1001, or as being allocated in JMS

③ Main Part Assembly Prefix = "AREA - PHASE NO.", or as being specified in JMS

④ Main Part Assembly Start Number = 1001, or as being allocated in JMS



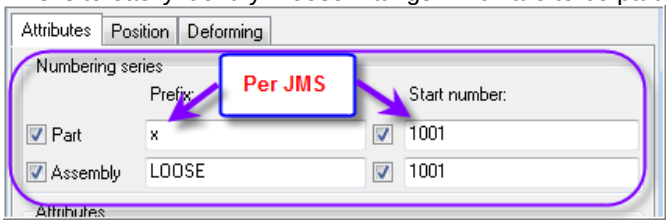
SECONDARY PART NUMBERING SERIES

Secondary part prefix has been pre-assigned for each specific area of a certain job in JMS, so Secondary part prefix must be as specified therein. A Fitting prefix might also be added as a prefix to the Part Prefix. Confirm with Project Leader or refer to the "Overview of Drawing System" in JMS.

Secondary part numbers shall always be pre allocated in JMS by each area and phase, so for every phase in the area of scope, certain numbering ranges are to be pre-assigned and will be used per phase.

Always confirm with Project Leader for the start number for secondary parts to be used per phase.

Assembly prefix for a secondary part shall always be "LOOSE" and Start number shall always be 1001. This is to easily identify "Loose" fittings which are to be part of an assembly.



INTERFACE OBJECTS NUMBERING

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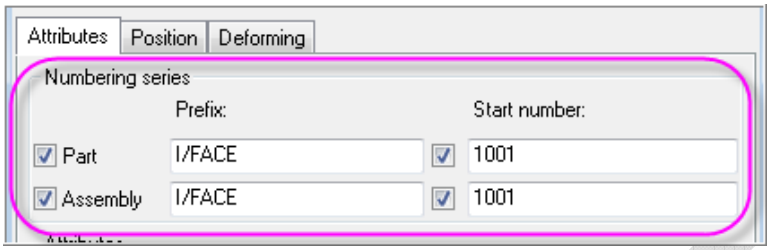
Existing or Interface steelwork's parts/assembly shall be prefixed with "I/FACE" to make it clear to all third party users what the steelwork is.



IF APPLICABLE, WHEN A JOB INVOLVES SUB-ASSEMBLIES & SUPER-ASSEMBLIES

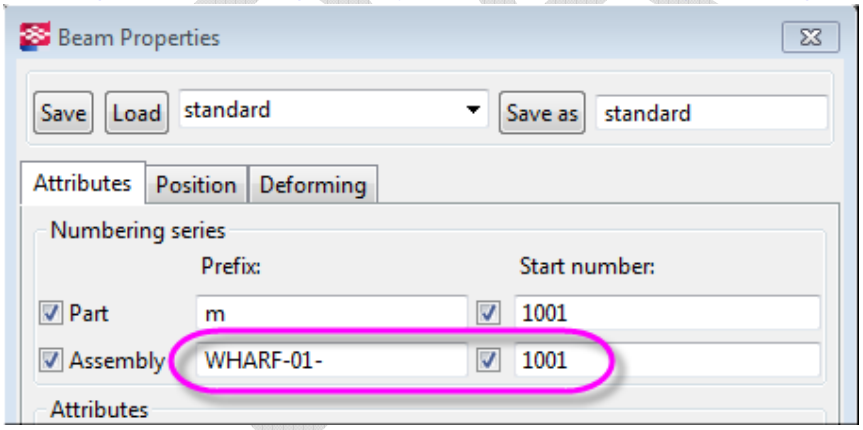
Below is a sample numbering configuration and actual settings to be referred to JMS for the respective job.

1. **Normal/Single Assembly Drawing** (Not a Sub-Assembly or do not belong to any other Assembly)

   AREA-PHASE NO.-SEQUENTIAL NO.

   EX: WHARF-01-1001

   *Set Properties as below: (Assembly Start Number shall always be 1001)



   *2D drawing normally created as a normal assembly

2. **Sub-Assembly Drawing** (An Assembly that is a member or belongs to another Assembly, herein referred to as a Super-Assembly)

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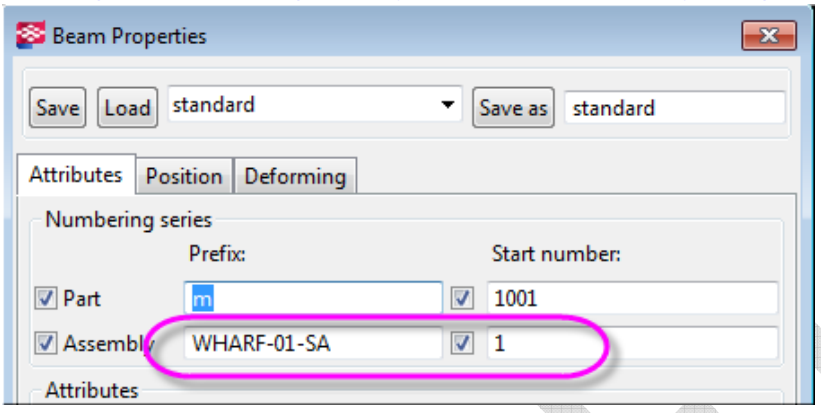
AREA-PHASE NO.-SA+(SEQUENTIAL 3 DIGIT NUMBER)

EX: WHARF-01-SA001

*Set Properties as below: (Assembly Start Number shall always be 1)



*2D drawing normally created as a normal assembly

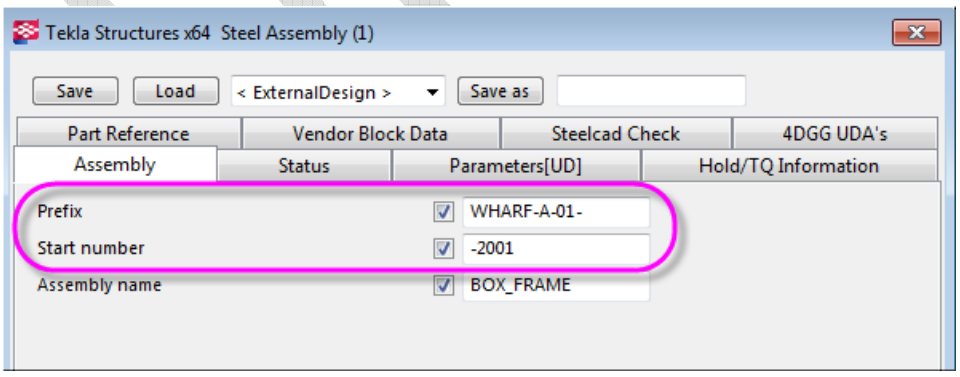
3. **Super-Assembly** (Composed of Sub-Assemblies)

AREA-PHASE NO.-SEQUENTIAL NO.

EX: WHARF-01-2001

*Set Properties as below: (Assembly Start Number shall always be -20XX)

XX- If the Super-Assembly requires additional sheets; the next Super-Assembly number is to be adjusted. The minus (-) sign in front of the number is forcing Tekla to assign such number.



4.3 The Numbering Setup

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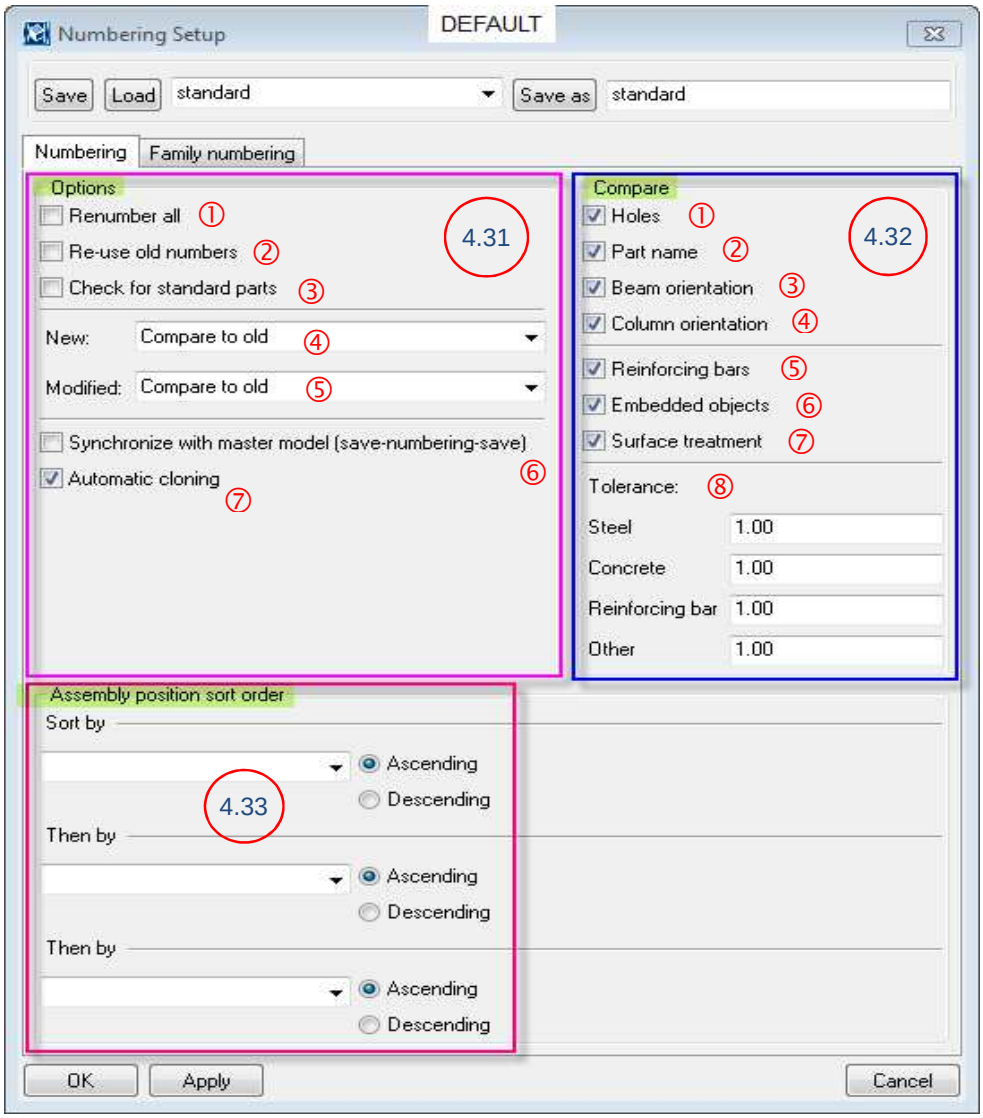
Tekla Structures categorizes objects as being similar or different based on setting within the 'Numbering Setup' dialog box. By default, a part retains its number, as long as only one part has that particular number, regardless of the settings in the Numbering Setup dialog box.

IMPORTANT! It is recommended to always perform a FULL numbering (Diagnose and Repair Numbering: All) instead of a Modified numbering whenever possible. Full numberings do more database checks than Modified numberings, so this is considered the safest way to avoid potential numbering conflicts & database problems.



4.31 Numbering "OPTIONS" Settings Explained:

Option	Description

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Option	Description
① Renumber all	All parts get a new number. All information on previous numbers is lost.
② Re-use old numbers	Tekla Structures reuses the numbers of parts that have been deleted. These numbers may be used to number new or modified parts.
③ Check for standard parts	If a separate standard-part model has been set up, Tekla Structures compares the parts in the current model to those in the standard-part model. If the part to be numbered is identical to a part in the standard-part model, Tekla Structures uses the same part number as in the standard-part model.
④⑤Compare to old	The part gets the same number as a previously numbered similar part.
④⑤ Take new number	The part gets a new number even if a similar numbered part already exists.
④⑤ Keep number if possible	Modified parts maintain their previous numbers if possible. Even if a part or assembly becomes identical with another part or assembly, the original position number is maintained. For example, you might have two different assemblies, B/1 and B/2, in the model. Later on you modify B/2 so that it becomes identical with B/1. If the Keep number if possible option is used, B/2 will maintain its original position number when you renumber the model.
⑥ Synchronize with master model	Use this setting when working in multi-user mode. Tekla Structures locks the master model and performs a save, numbering, and save sequence, so that all other users can continue working during the operation.
⑦ Automatic cloning	If the main part of a drawing is modified and therefore gets a new assembly position, the existing drawing is automatically assigned to another part of the position. If the modified part moves to an assembly position that does not have a drawing, the original drawing is automatically cloned to reflect the changes in the modified part.

4.32 Numbering “Compare” Settings explained:

Option	Description
①Holes	The location, size, and number of holes affect numbering.
②Part name	The part name affects numbering.
③Beam orientation	The orientation of beams affects numbering.
④Column orientation	The orientation of columns affects numbering.
⑤Reinforcing bars	The orientation of reinforcing bars affects numbering.
⑥Embedded objects	The orientation of equal embedded objects affects numbering.
⑦Surface treatment	Surface treatments affect the numbering of assemblies.
⑧Tolerance	Parts get the same number if their dimensions differ less than the value entered in this box.

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Regardless of the Numbering Options settings, the Numbering Compare settings are all checked by default. Each of the above compare items when selected or ticked will affect numbering. Settings must not be changed without confirmation with PL.

Beam Orientation and Column Orientation are checked by default. Meaning two identical assemblies with different model orientation will be marked different.

For special cases, pending project nature, the Compare Beam and Column orientation can be changed, e.g. Tank Support, comprising of circular array of columns etc... To minimize quantity of drawings, compare beam and column orientation can be switch off and GA or Marking Plans to reflect mark position = mark end. PL confirmation must always be sought beforehand.

4.33 Numbering "Assembly Position Order" Settings explained:

Option	Description
Assembly position sort order	The sort order can be based on the following criteria: • The x, y or z coordinates of the main part of the assembly The sorting is based on the centre of gravity of the reference axis. • The user-defined attribute of an assembly or the main part If your sorting is based on user-defined attributes, Tekla Structures displays a list box that includes all the available user-defined attributes.

No specific settings required for the Assembly Position Sort Order.

IMPORTANT! Ensure that assembly and part prefixes and start numbers are correct and are on the right Phase number as per the Client requirements before doing every numbering.

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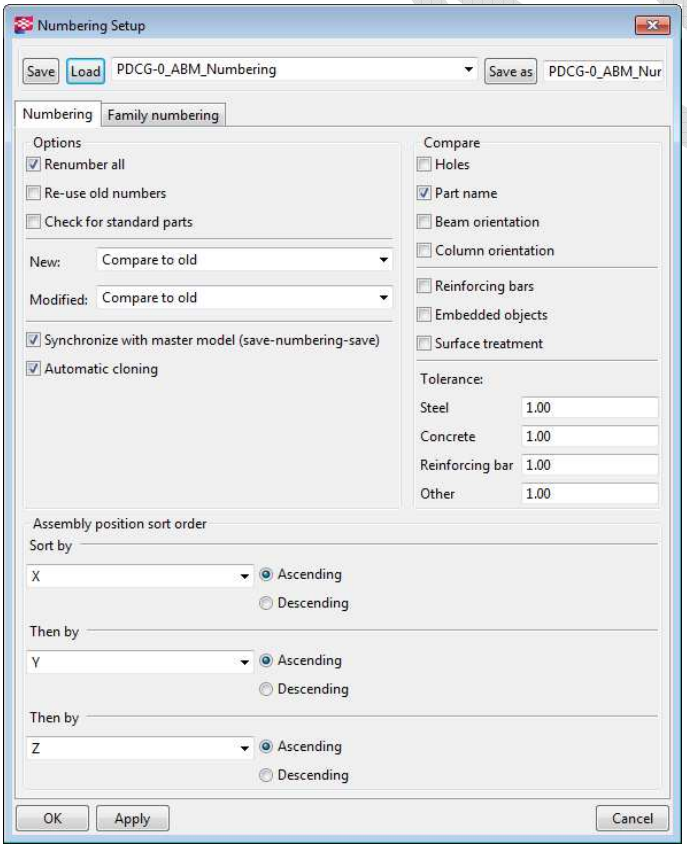
Numbering Setup will vary depending on cases of the model stage or drawing submittal stage when the numbering needs to be performed. Recommended settings for these cases are enumerated below but user may adopt another setting as the project requires:

RECOMMENDED NUMBERING SETTINGS (RESOURCES)										
		OPTIONS			NEW		MODIFIED			
NO.	CASES	Renumber all	Re-use old numbers	Check for standard parts	Compare to old	Take new number	Compare to old	Keep number if possible	Take new number	PRE-SAVED NAMES
1	ABM Numbering (If Required)	✓			✓		✓			PDCG-0_ABM_Numbering
2	1st or Initial Numbering	✓		✓	✓		✓			PDCG-1_Initial_Numbering
3	Submitting for Model Review, before drawing creation	✓		✓	✓		✓			
4	Model Issued for Review, create 2D drawings before receiving Model Review Comments	✓		✓	✓		✓			
5	Revision per Model Review Comments, ready for 2D drawing creation	✓		✓	✓		✓			
6	Revisions after 2D drawings were created but not yet edited and checked		✓	✓	✓		✓			PDCG-2_Before_Creating_Drawings_1st_Submittal
7	Revisions after 2D drawings were created, edited and checked but not yet IFC		✓	✓	✓		✓			PDCG-2_Before_Creating_Drawings_1st_Submittal
8	Revisions after 2D drawings were IFC and keep numbers if possible			✓	✓			✓		PDCG-3_After_Issuing_Drawings_1st_Submittal

4.34 Recommended Settings for Each Case/Stage:



4.34.1 Cases 1 – ABM Numbering (if required)

- All parts get a new number. All information on previous numbers is lost

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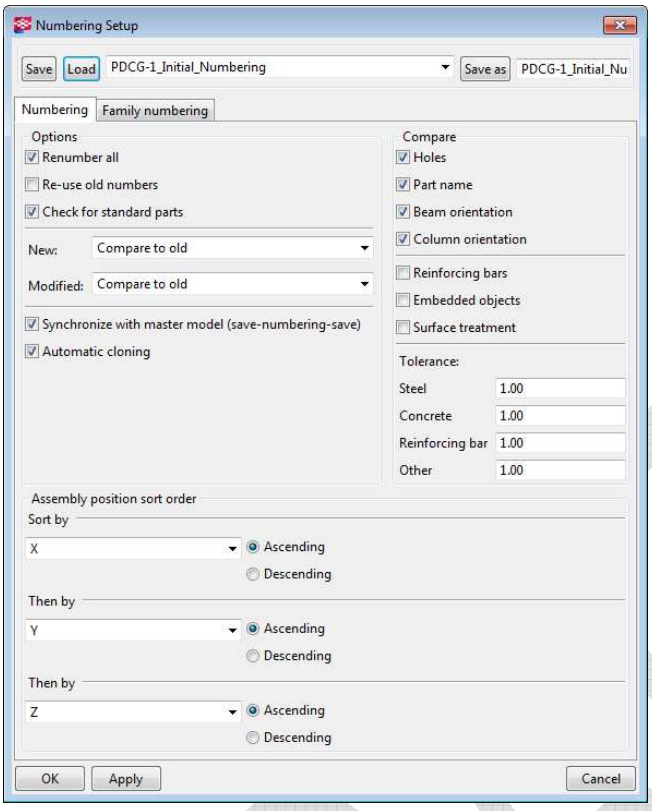
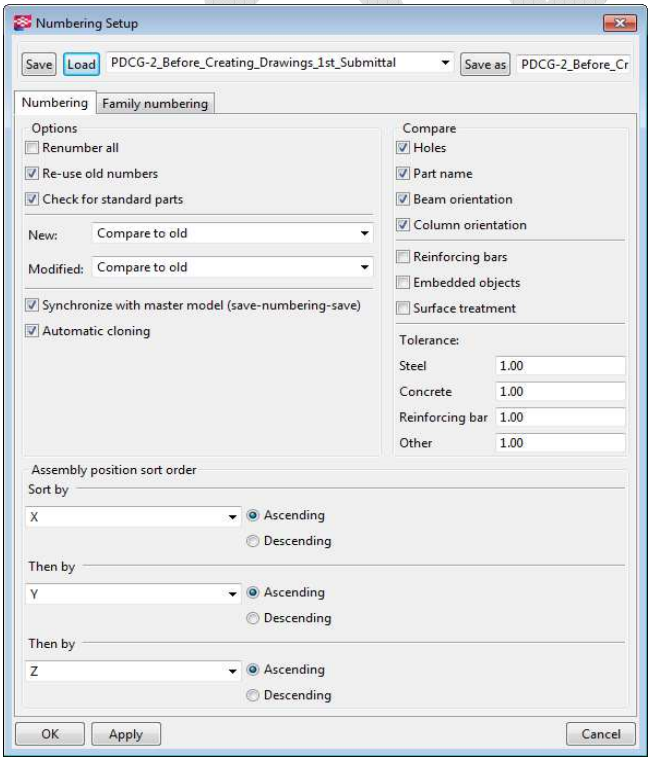


4.34.1 Cases 2~5 - PDCG-1_Initial_Numbering

- All parts get a new number. All information on previous numbers is lost



4.34.2 Case 6 & 7 - PDCG-2_Before_Creating_Drawings_1st_Submittal

- Tekla Structures reuses the numbers of parts that have been deleted. These numbers may be used to number new or modified parts.
- New and modified parts get the same number as a previously numbered similar part. If no previously numbered similar part, it will get either a reused number or a new number.

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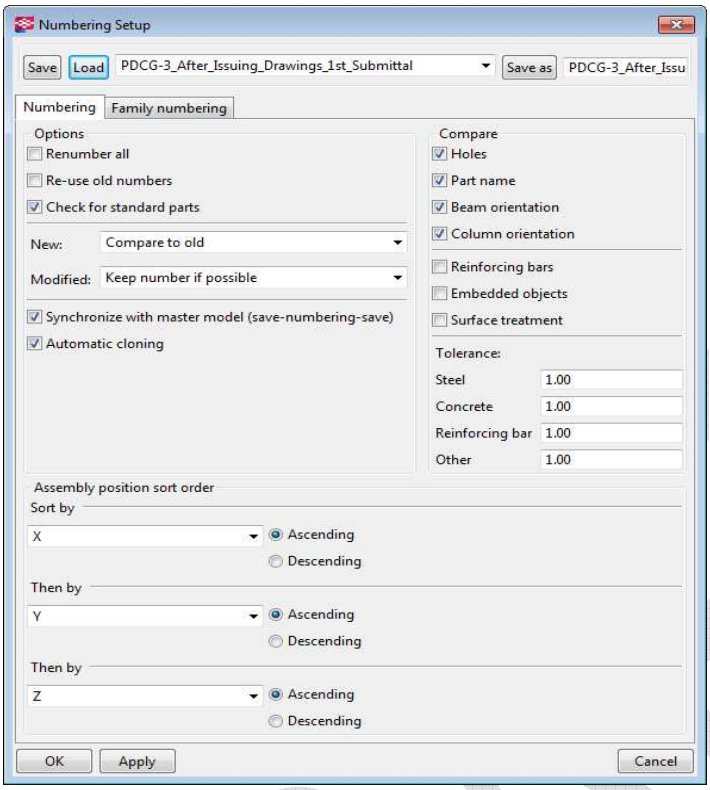

4.34.5 Case 8 - PDCG-3_After_Issuing_Drawings_1st_Submittal

- Modified parts maintain their previous numbers if possible. Even if a part or assembly becomes identical with another part or assembly, the original position number is maintained.

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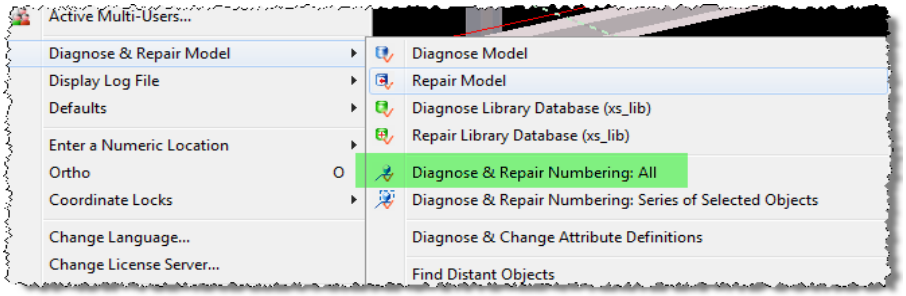
4.4 Numbering Parts

After numbering setup has been applied, select "Apply", then "OK" , then select *"Tools →Diagnose & Repair Model → Diagnose & Repair Numbering: All".*

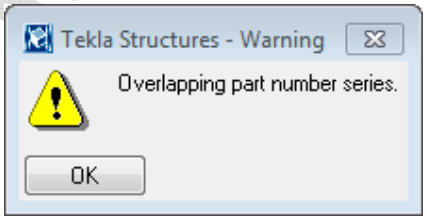


IMPORTANT! Once a numbering has been completed, TEKLA will display a numbering log on the screen, for the person who performed the numbering to review. This shows **EXACTLY** what has been changed during the last numbering and provides the detailer with the option to **CANCEL** the numbering, if they are unhappy with the results, or unsure about the changes being made. Tekla Structures will save the numbering after 150 seconds (default), if the user has not selected **OK o**r has not stopped the Timer. Click on "Stop Timer" if more time is needed to review the changes being made.

Overlapping Numbering Series

When you plan numbering, ensure that you reserve enough numbers for each series. If a series overlaps another, Tekla Structures might allocate the same number to different parts and this may lead to corruption of the model.

Tekla Structures warns you about series overlaps. View the numbering history log to check which numbers overlap.



This error message is NOT to be ignored. Overlapping numbering series errors are serious, and MUST be resolved before any further drawings are issued or proceeding any further.

The report "*iPDTekla_QA_Check_Part_StartNumber.csv*" can assist in checking which part or parts have incorrect start numbers or which ones need to be changed.

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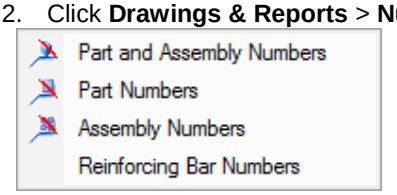
Changing Part and Assembly Numbers

If and when it becomes necessary to force a certain position number on a part or assembly, with the confirmation of the PL, follow below procedure.

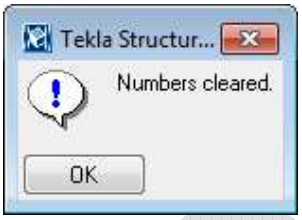
Clear existing part or assembly number

To clear the position numbers:

1. Select the objects whose numbers you want to clear.
2. Click **Drawings & Reports** > **Numbering** > **Clear Numbers** and select one of the commands:



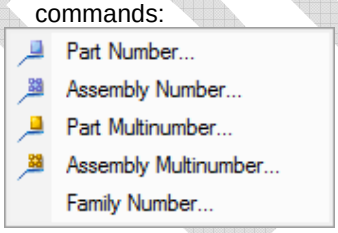
If successful, TEKLA Structures will display:



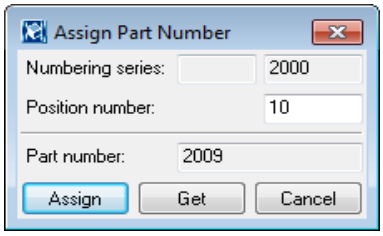
Change part or assembly numbers

To change the position numbers:

1. Select an object.
2. Click **Drawings & Reports > Numbering** > **Change Number** and select one of the commands:



3. Set the desired properties. The options you have vary depending on your selection in step 2.



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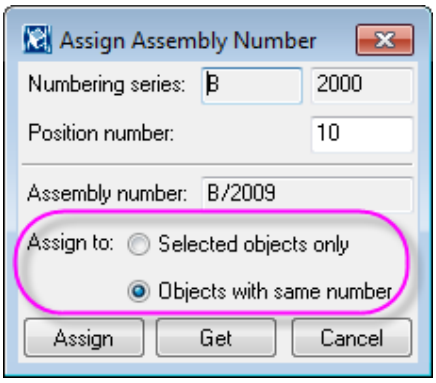
For the part number, all objects with the same number will be given the number you specified. This command does not change the numbering series.



For the assembly number, you can choose whether to assign the number to the “Selected objects only” or to “Objects with the same number”

If the number you specified is already in use, Tekla Structures displays a warning and does not change the number. Tekla Structures also displays a warning if the position number is higher than the highest current number. This is for information only and the number is still changed.

4. Click **Assign**.

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5 Drawing Stage

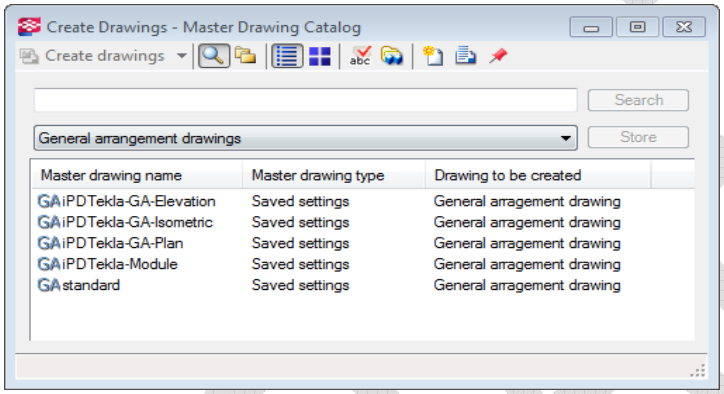
5.1 General

All shall be created using the Rule sets or Wizards and the saved settings in the Master Drawing Catalog as much as possible. Drawing sizes will be automatically selected depending on assembly size and number of annotations.

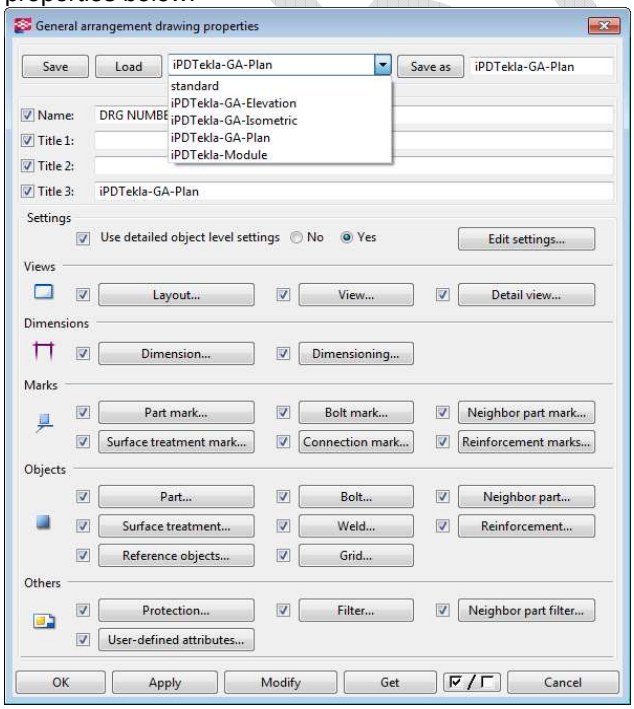
5.2 Creating Drawings

Creating General Arrangement Drawings or Marking Plans

General Arrangement Drawings or Marking Plans are to be created using the applicable Pre-saved settings below:



Or you can also select and apply the saved settings using the General arrangement drawing properties below:



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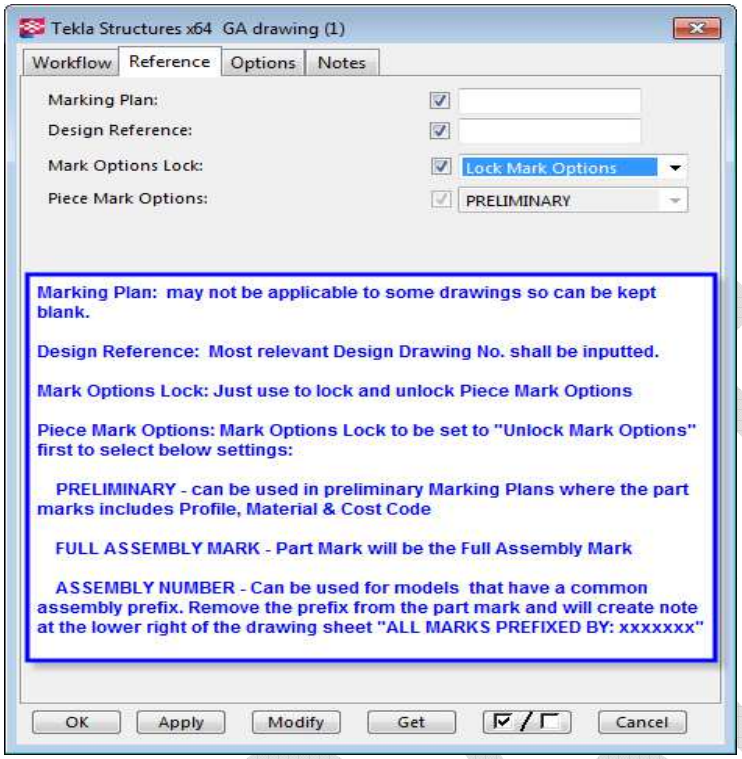
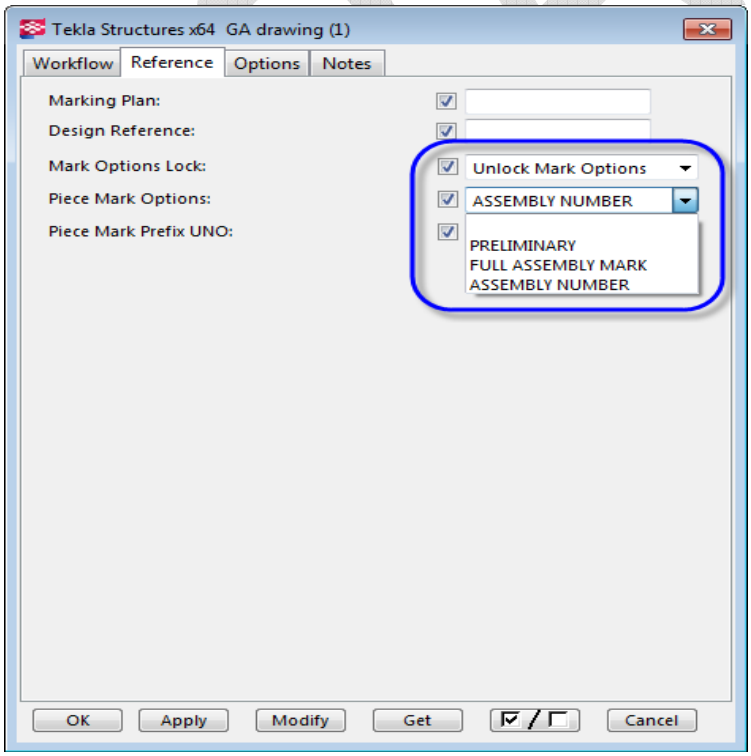
Marking Plan UDA: Reference Tab



When Unlock Mark Options is set



Need to reopen the drawing when changing or applying the Piece Mark Option to take effect.

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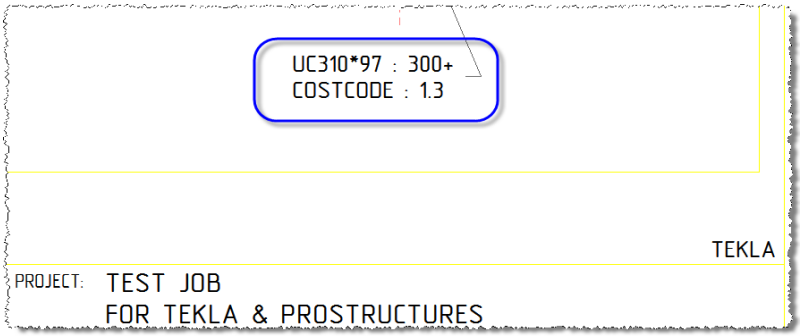
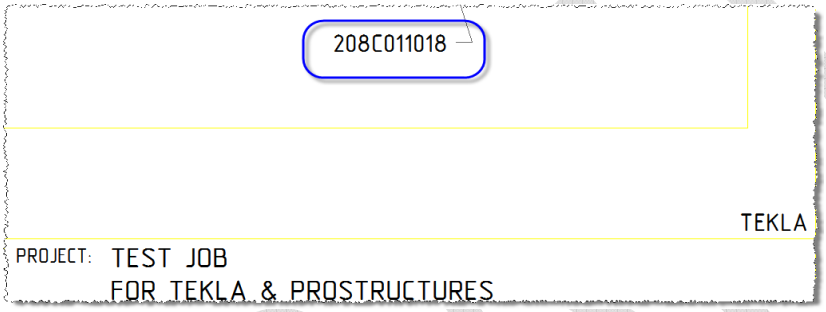
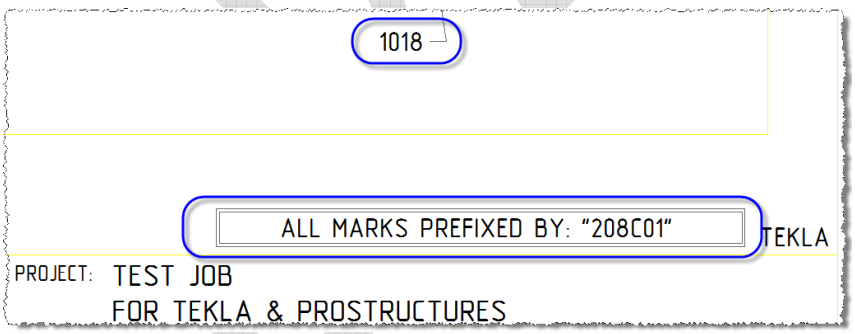
PRELIMINARY MARK SAMPLE:

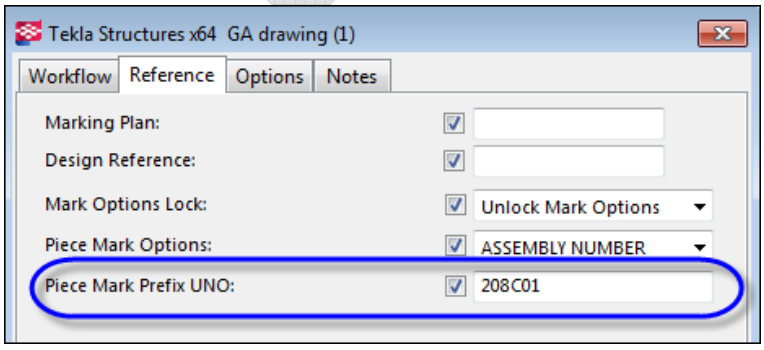


FULL ASSEMBLY MARK SAMPLE:



ASSEMBLY NUMBER MARKS SAMPLE:





Need to Input Piece Mark Prefix to be added into the NOTE.

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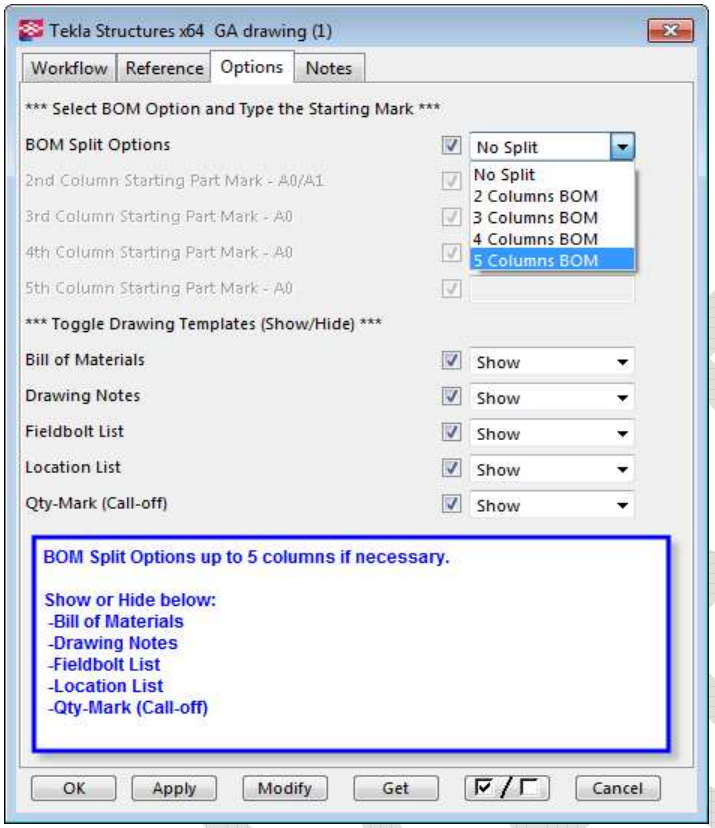
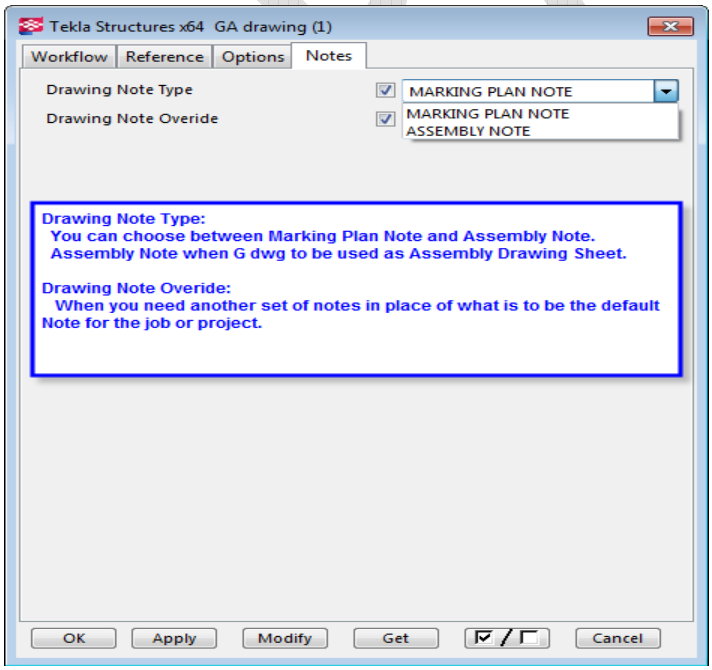
Marking Plan UDA: Options Tab



Marking Plan UDA: Notes Tab



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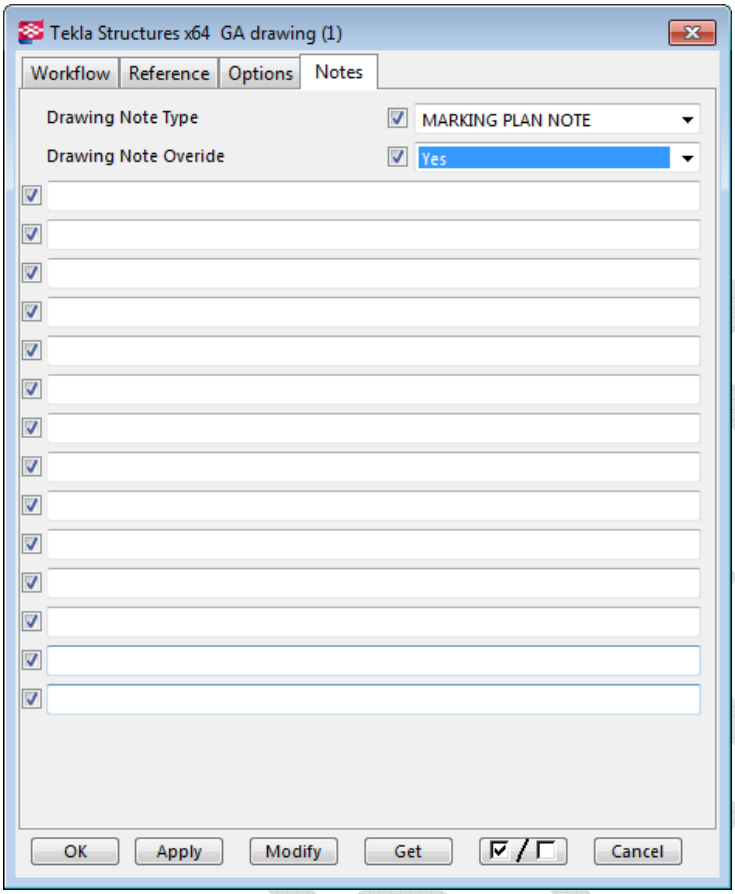
When Drawing Note Override set to Yes:



Notes shall be inputted manually.

Creating Multi Sheet Drawings

Chutes and Super-assemblies mostly require additional drawing sheets (Multi-Sheet drawing) to accommodate sections and views.

This can be done by creating an empty general arrangement (“G”) drawing and the views to be linked to it are from the 1st or original assembly drawing. Edit only the 1st drawing together with the views intended to be shown on the secondary sheets.

UDA attributes and other options are the same that of a Marking Plan or of a “G” drawing above.

IMPORTANT! Note that the number for this drawing needs to be reserved to ensure that it cannot be adopted by any other drawing number within the same model. If applicable, you can model a “dummy” part and the reserved number needs to be allocated to it.

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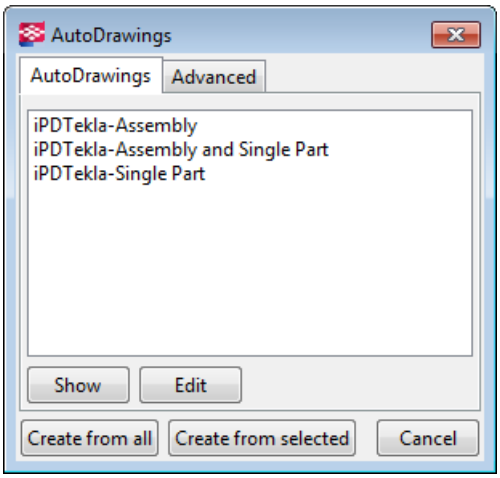
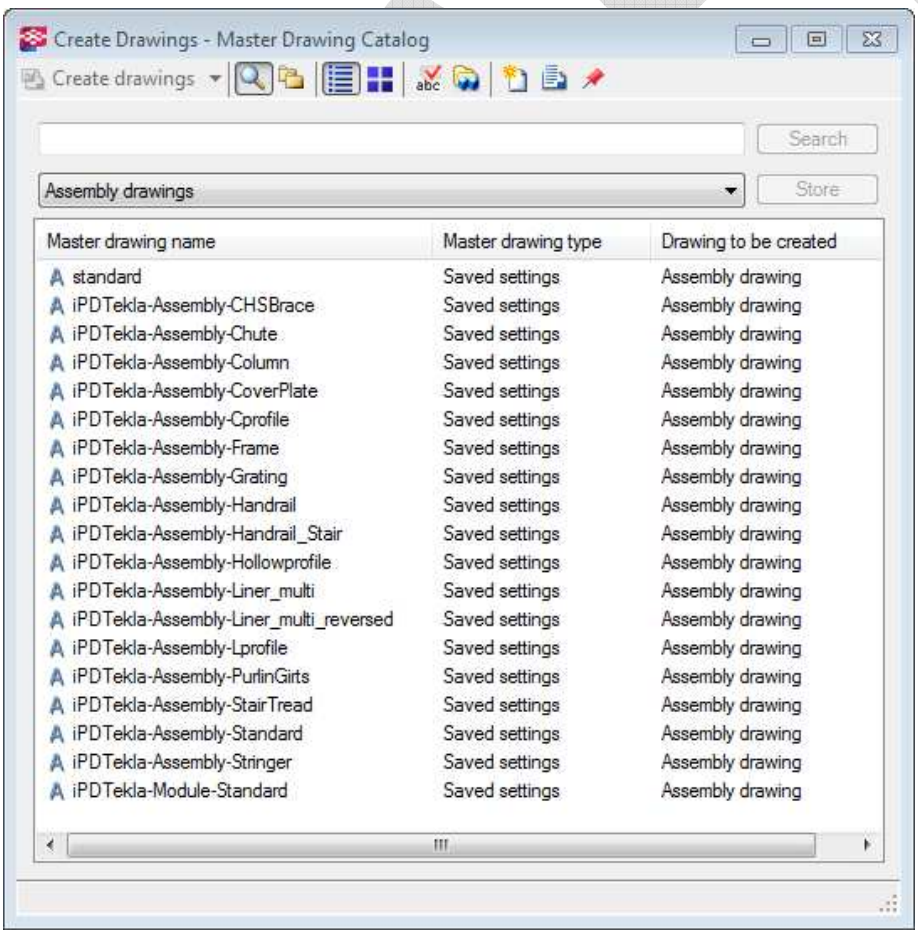
Creating Assembly and Fitting Drawings

Assembly and fitting drawings shall be created using the AutoDrawings Rule sets.



The AutoDrawings will use the applicable saved settings below:



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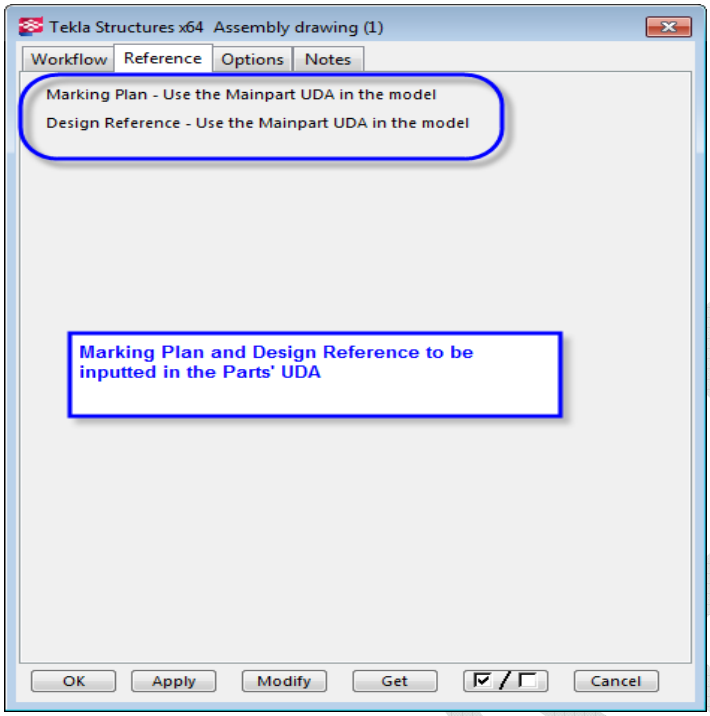
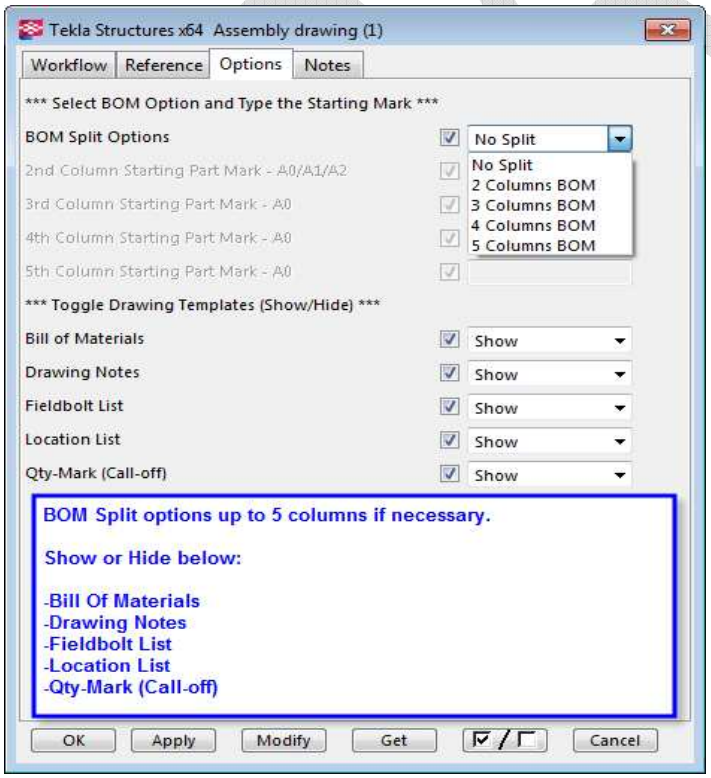
Assembly Drawing Properties UDA: Reference Tab



Assembly Drawing Properties UDA: Options Tab



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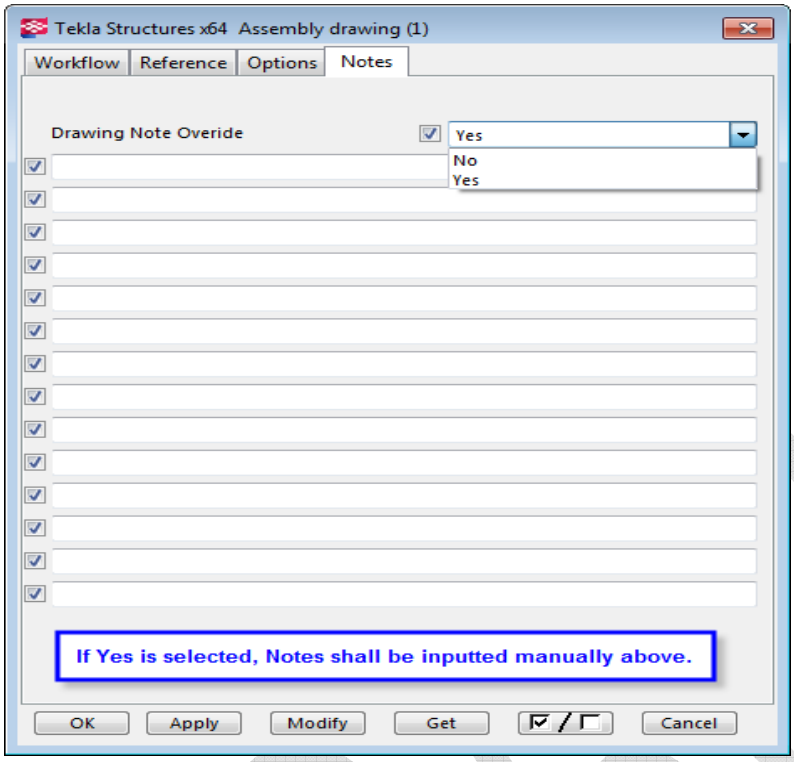
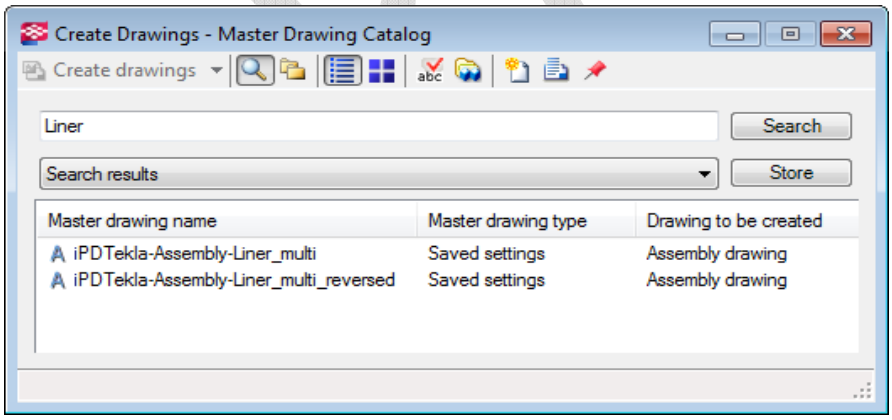
Assembly and Fitting Drawing Properties UDA: Notes Tab



Creating Multi-Drawings (Liners)



We have saved settings for Liners when using AutoDrawings in creating Liner assembly drawings.

Depending on the type of liner being detailed there may be a requirement to change the default view drawn (to part front) to a view on the part back (i.e. to suit whether studs are to be drawn towards or away from the view. To do this open the first Liner drawing in the set and open drawing properties. Load “iPDTekla-Assembly-Liner_multi_reversed” and click modify against each liner that requires a view from the back and not the default view. You will note that this will load Title 2 against the liner drawing with “reversed”. Do not remove this text. It is required for the production of the Liners dxf files.

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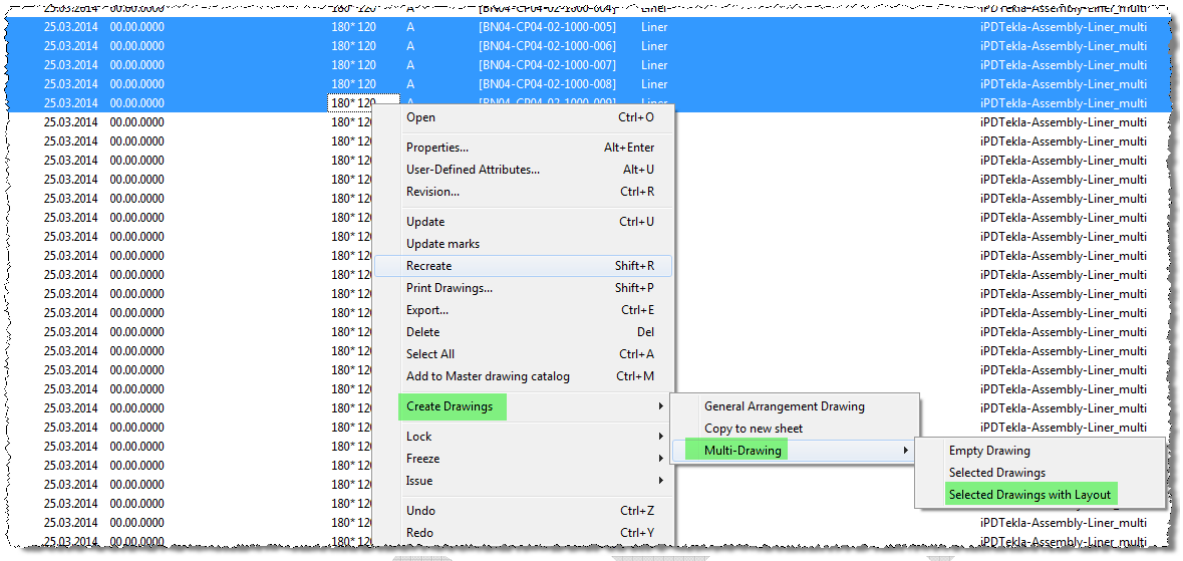
When a set of Liner content drawings have been 2D edited and are ready to be placed unto a Multi-drawing, select all of the liner drawings in the Drawing List, right click and go to “Create Drawings -> Multi-Drawing -> Selected Drawings with Layout”.



This will produce Multi-Drawings with all the selected liners drawn in a grid of rows and columns.

Pre-defined layout are for A0 and A1 size drawing sheets.

In cases where parts other than liners and studs need to be called off in the Bill Of Materials (BOM), the user should input the text “output” into the part’s UDA “Misc. Info” field.

Note that for BHP contracts stud bolts should be modeled as parts not Tekla studs (i.e. not applied through the bolt catalogue). Only drill liners if the design drawing specifically calls for it – if in doubt, ask.

These content drawings should be edited as required to subsequently be collated on a multi drawing.

IMPORTANT! If any changes need to be made to any individual liners the changes should be made to the liner assembly drawing and then update the multi drawing based on these changes. Liners should not be altered in the multi drawing.

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6 Issuing Stage

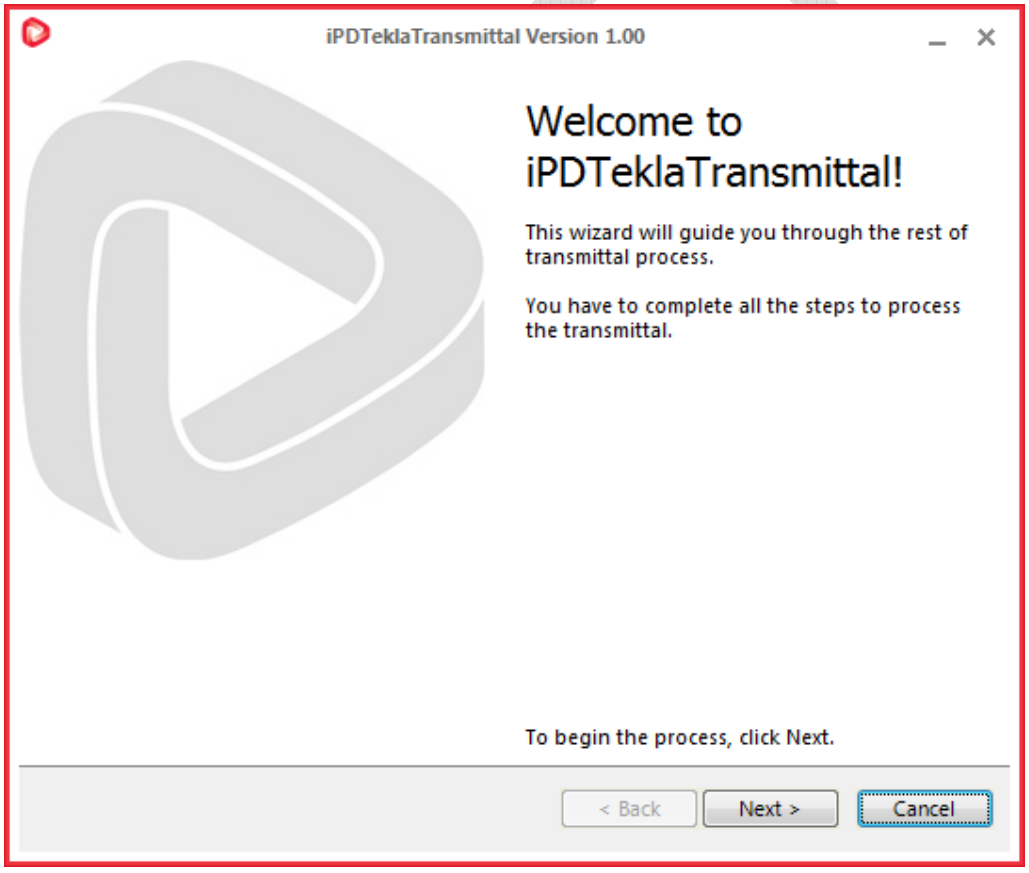
6.1 General

All 2D drawings for the Phase(s) to be issued should have been completed, that is, quality checked, back-drafted and up to date before issuing. Freeze and Lock all drawings for Issue.

Generally at PDC, issues are broken into phases and steelwork type, i.e. Steelwork, Handrailing, Grating, and Liner.

Make sure that the drawing numbers of the drawings for issue are allocated in JMS.

6.2 iPDTeklaTransmittal Interface



The iPDTeklaTransmittal start-up icon is within the iPDTeklaTool.

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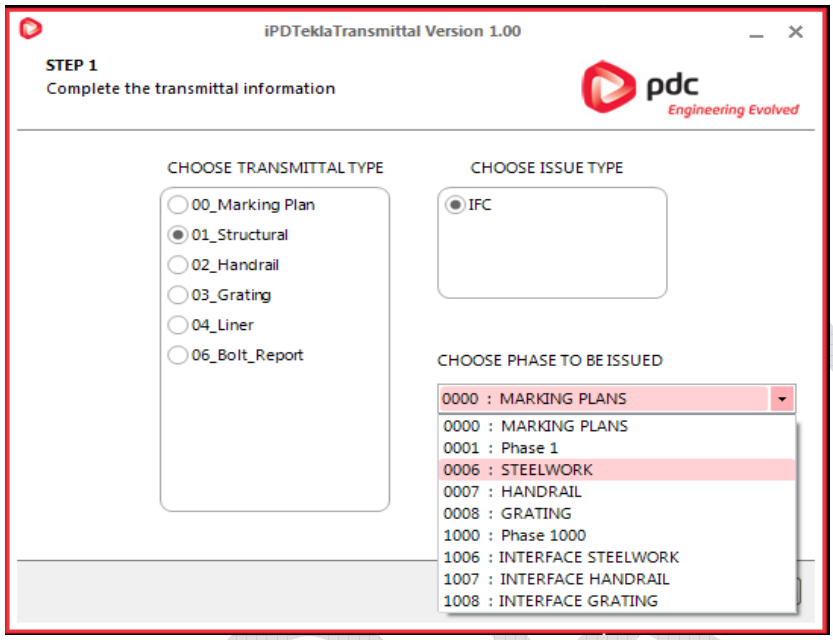
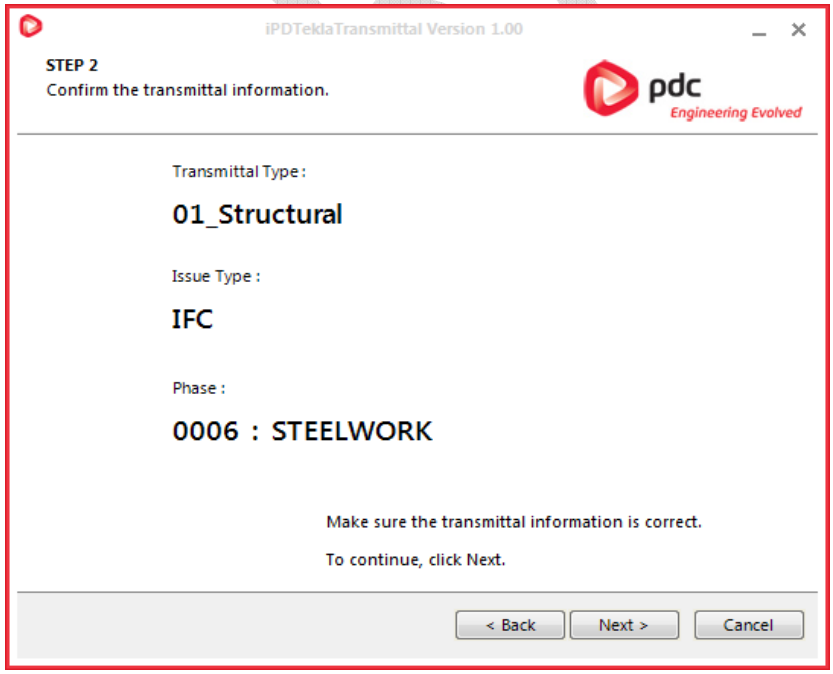
Step 1. Complete the transmittal information.

- **Transmittal Type**
- **Issue Type**
- **Issue Phase**



Step 2. Confirm the transmittal information.



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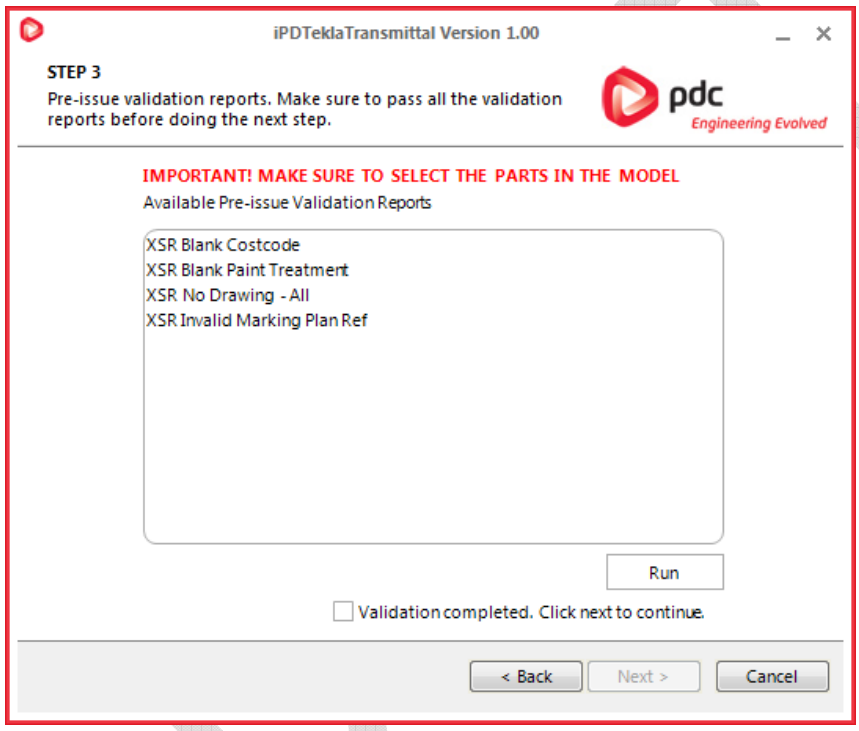
Step 3. Pre-issue Validation Reports.

If “Run” is clicked, the selected objects for issue will be scanned and checked for the following errors:

1. Cost Code
2. Paint Treatment/Finish
3. All drawings are complete
4. All drawings have Marking Plan References

If there are errors found, a dialogue will prompt and show the categories for errors and the list of the number of error objects and selectable list of the parts in error.

If you have run the audit before running the Transmittal tool, this validation can be by-passed.



Check the “Validation completed” checkbox to continue.

Step 4. Clean-up _PDFS folder in preparation for the transmittal.

All files needed for the transmittal will be stored first in the folder “D:_PDFS” (Manila Office) and in “C:_PDFS” (All other Offices), so this step will prompt to clean-up the drive before creating the files, otherwise the existing files therein will be included in the issue package.

If you need the files located therein but not to be included in the issue package, it can be moved to other location before clicking “Clean PDFS” button and Next to continue.

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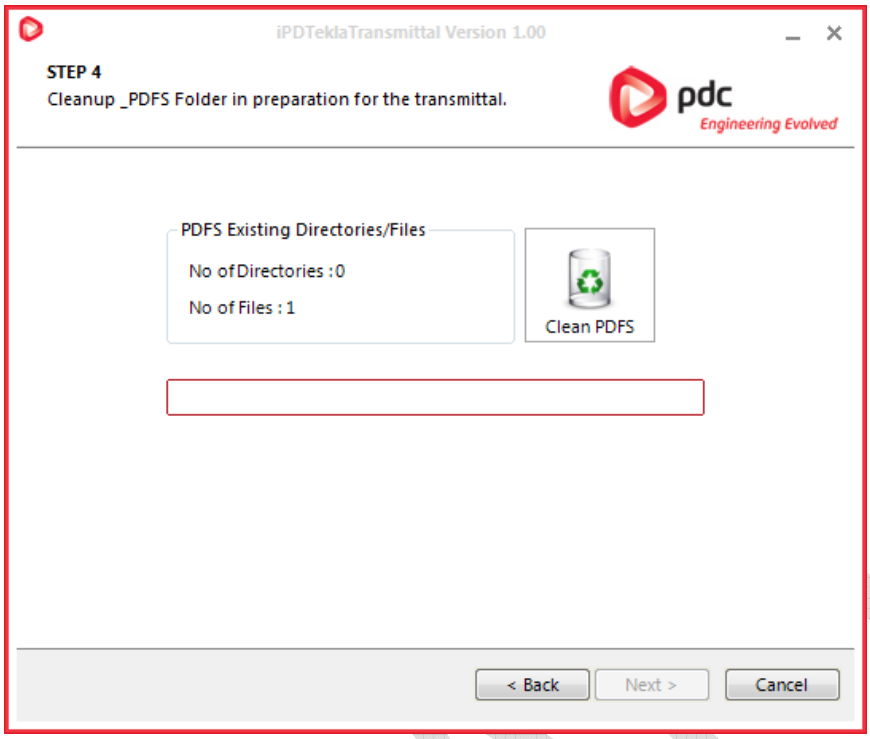
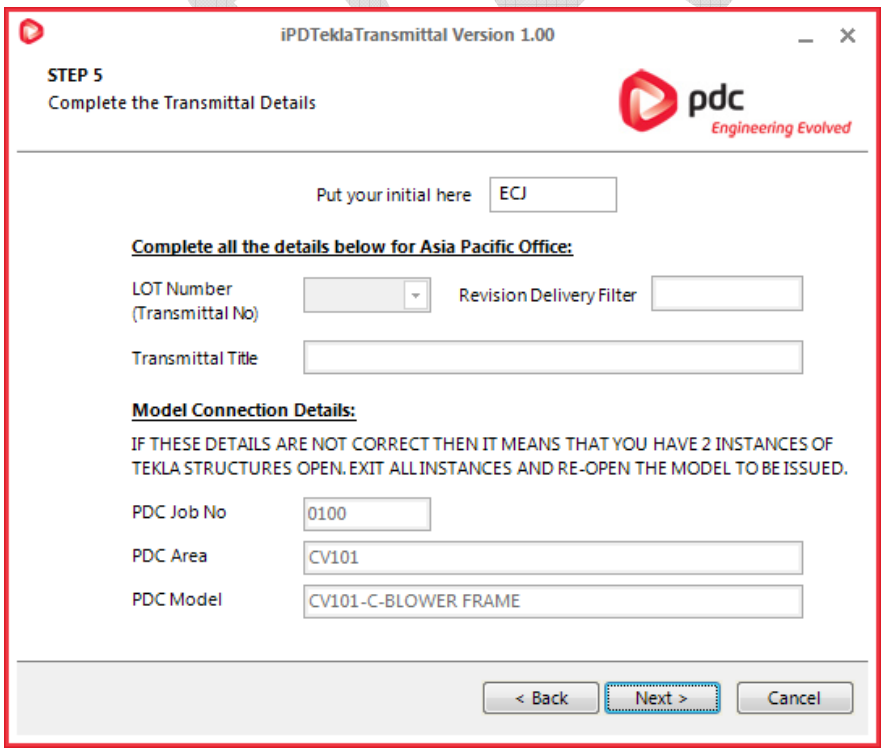


Step 5. Transmittal Details.

Confirm if details are correct. Click Next to continue.



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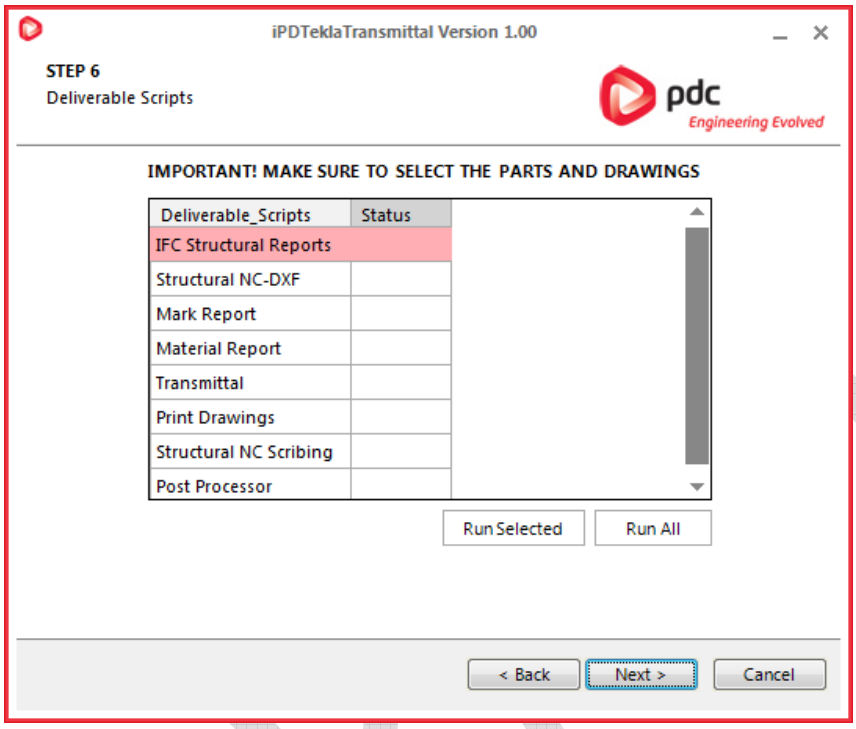
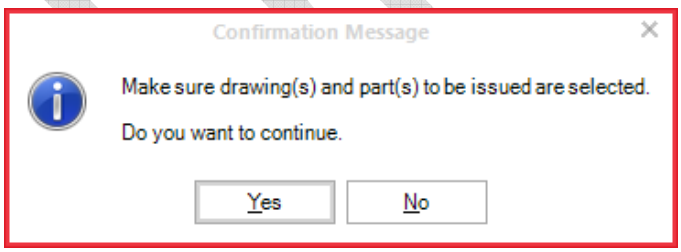
Step 6. Deliverable Scripts.

Run All if a complete transmittal package is required.
Run Selected if only certain reports need to be outputted.



Click Next and below confirmation will be prompted:



Files preparation process will start. Until…

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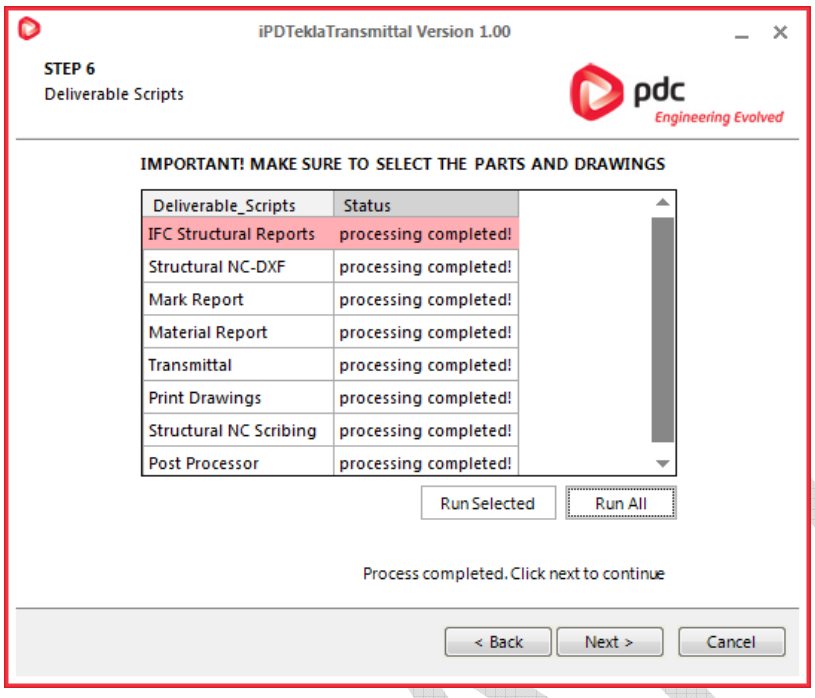
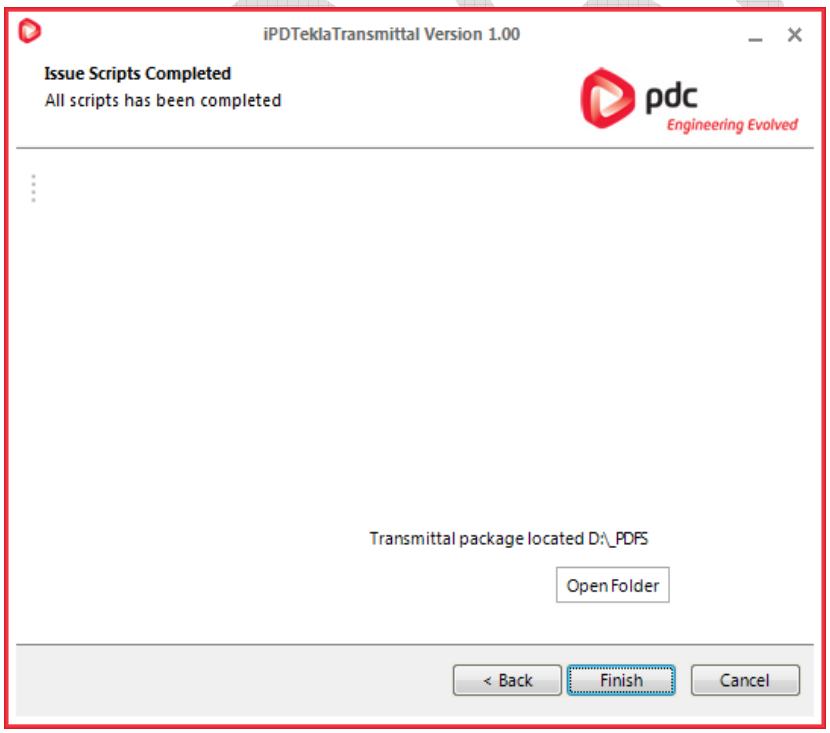
And…



The Final prompt. Open Folder will open the transmittal folder within the _PDFS folder.



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7 Reference Videos and Work Instructions

Refer below link for iPDTekla Work Insturctions and Instructional Videos:

http://vision.pdcgroup.com/Operation/0004%20Technical/000%20iPDTekla/work_instructions/default.html

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