INFORMATION:

Cad Standard 2014 is an extension for Autodesk® AutoCAD® software.

Developed since : April 2013.

Language : Autolisp.

Author : Hoang Nhat Pham.

Components : Cad Standard Creator, Cad Standard Block, Cad Standard Translator (in future).

Suitable versions : AutoCAD® 2012 version or onwards.

Cad Standard 2014 revolutionizes how you work with standard items such as layers, dimstyles, styles, linetype, blocks… from any external Autodesk® AutoCAD® file (DWG). With Cad Standard 2014, easily access standard items on-demand, thus negating the need to have these items already in your drawing. Individual users or large user groups can start benefiting from Cad Standard 2014 immediately after installing it with no setup required. Cad Standard 2014 allows each user to access standard items from centralized existing standards files, thus simplifying how you work and manage with standards.

With Cad Standard 2014, you can:

- Browse for drawing content such as drawings or standard items on your computer, on a networked drive.
- View definition tables for standard items… in any drawing file and then insert the definitions into the current drawing.
- Update (redefine) standard items definition.

FUNCTION:

Cad Standard Creator:

You can add items from a standard drawing (DWG file) into your current drawing. A list of these items is stated as follows:

TYPE OF INSERTING ITEMS		
Block	Linetype	Scale
Dimmension style	Material	Table style
Layer	Multiline style	Text style
Layer filter	Multileader style	User coordinate system
Layer state	Plot setting	Visual style
Layout	Plot style	…

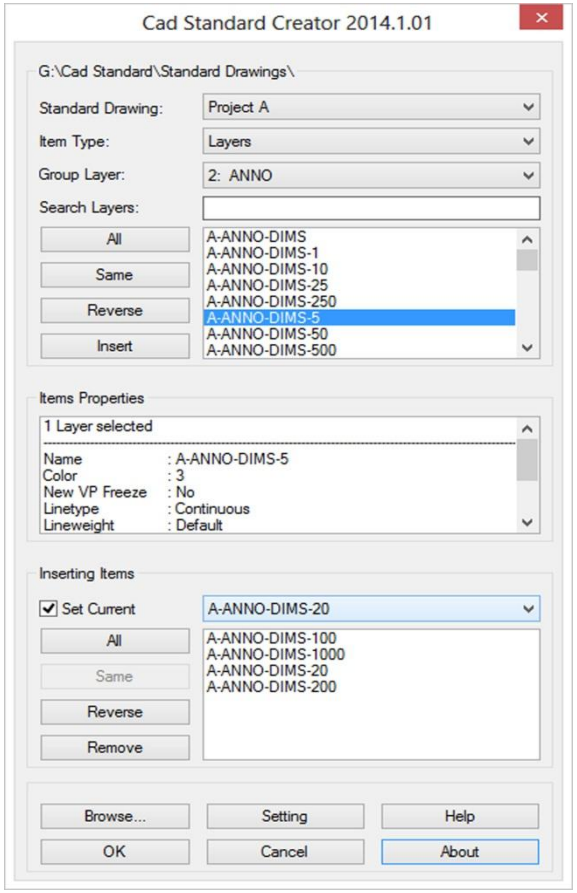
When the source file of standard items definition is changed, standard items definitions in the current drawing that contain items are not automatically updated. With Cad Standard 2014, you decide whether standard items definition should be updated in the current drawing. The source file of standard items definition can be a nested standard item in a standard item.

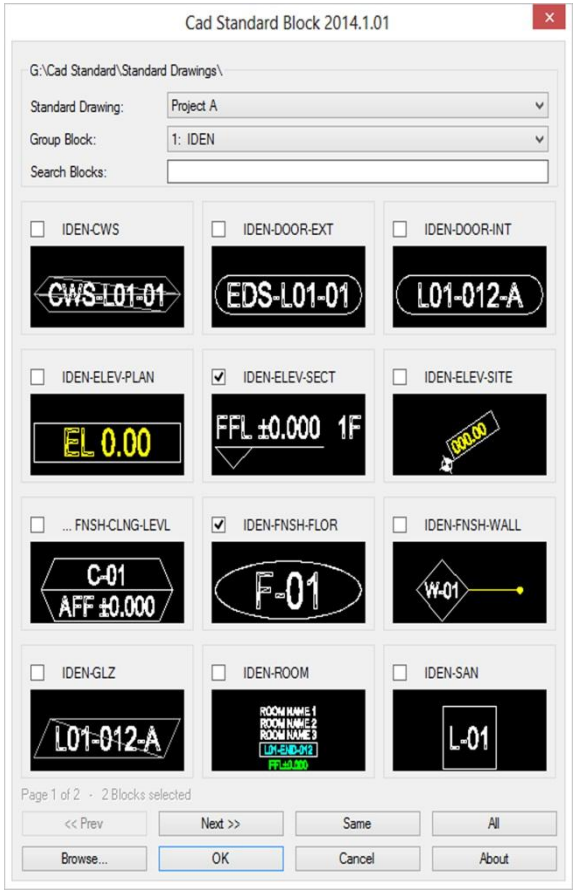
For example, when inserting a dimstyle, which was named “DIM”, into the current drawing. If that current drawing likewise has a dimstyle with a same name, hence the properties of the one on standard drawing will be duplicated and used for the one on current drawing. Referring to these such properties, there are several specific ones, for instance: textstyle and arrow block. These textstyles and blocks will be copied from the standard drawing. Additionally, other items in block as layer, linetype, etc. will be copied from standard drawing as well… This process will continuously run till finish. In consequence, the dimstyle “DIM” on current drawing has the duplicate properties as the dimstyle “DIM” on standard drawing.

In brief, by having the benefit of the capability to duplicate exactly standard items from standard drawing as cited above, this extension can be deliberated as a combination of two functions of AutoCAD® software, **Design Center** and **Check Standard**. Notwithstanding, the **Check Standard** tool has significant drawbacks itself, for instance: be capable of checking four types of items only: layer, textstyle, dimstyle and linetype, overlook the depth-checking and difficult for handling. Subsequently, properties of item can be changed incompletely.

Cad Standard Block:

With regard to inserting Blocks from standard drawing to current drawing. Shape, layer, textstyle, dimstyle, linetype, etc. of block's items will be duplicated from standard drawing. This is a function of Cad Standard Creator, but nevertheless the manipulations will be performed in a more convenient user interface.





INSTALLATION/UNINSTALLATION :

This extension Cad Standard 2014 is suitable for AutoCAD® 2012 version or onwards.

The installer that ran when you downloaded this plug-in from Autodesk® Exchange Apps has already installed the plug-in. You may need to restart AutoCAD® program to activate the plug-in.

To uninstall this plug-in, simply rerun the installer by downloading it again from Exchange, and select the 'Uninstall' button, or you can uninstall it from 'Control Panel\Programs\Programs and Features' (Windows 7/8) or Add/Remove Programs (Windows XP), just as you would uninstall any other application from your system. The panel on the Plug-ins tab will not be removed until AutoCAD® program is restarted.

START UP THE EXTENSION:

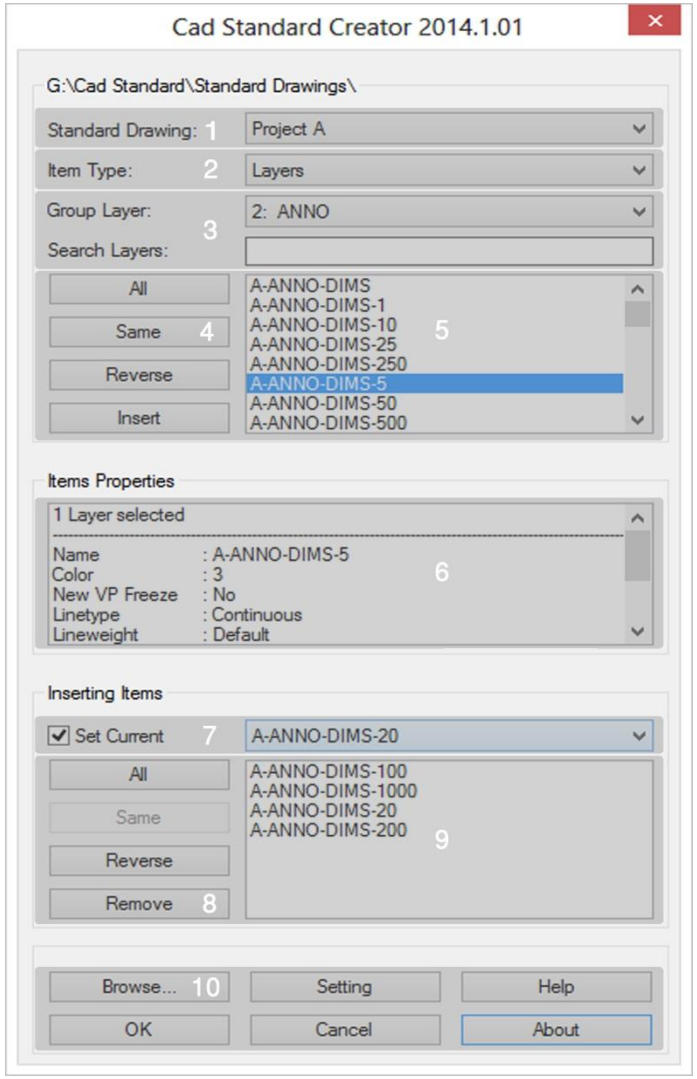
Enter “CAD_STANDARD_CREATOR” command or abbreviated form “CSC” to open Cad Standard Creator extension.

Enter “CAD_STANDARD_BLOCK” command or abbreviated form “CSB” to open Cad Standard Block extension.

EXTENSION	COMMAND	ABBREVIATION
Cad Standard Creator	CAD_STANDARD_CREATOR	CSC
Cad Standard Block	CAD_STANDARD_BLOCK	CSB

USER INTERFACE:

Cad Standard Creator:



01: Lists standard drawings on your local and network drives. User can identify the standard drawing, inserted items will collect information from this standard file.

02: “Item type” list select which type of items will be inserted.

03: Group and search for items.

04: Selecting and inserting tools in “Items” list.

05: The “Items” list displays items in group, this list can be filtered out by searching keywords.

06: Information of selecting items.

07: Identify one of inserted items will become current items.

08: The “Inserting items” list show inserted items, after clicking the “OK” button these such items will be inserted into current drawing.

09: Selecting and removing tools in “Inserting items” list.

10: The “Browse…” button for specifying the standard drawing.

The “Setting” button for changing types of inserting items.

The “Help” button for accessing the help content.

The “OK” button for starting the command.

The “Cancel” button for canceling the command.

The “About” button for displaying information of this extension.

Cad Standard Block:

01: Lists standard drawings on your local and network drives. User can identify the standard drawing, inserted blocks will collect information from this standard file.

02: Group and search for blocks.

03: The “Page of blocks”.

Each page displays 12 blocks, each block includes: selecting button to insert block into current drawing with name and image display of block.

The end of the page displays page number and a total number of pages.

04: The buttons:

The “Previous” button for moving back to previous page

The “Next” button for moving to next page

The “Same” button for selecting blocks that have the same name as the ones in current drawing in order to update its properties as standard drawing.

The “All” button for selecting blocks in standard drawing.

05: The “Browse…” button for specifying the standard drawing.

The “OK” button for starting the command.

The “Cancel” button for closing the window.

The “About” button for displaying information of this extension.

This extension is similar to Cad Standard Creator, nevertheless only block can be inserted into current drawing, and blocks are displayed as graphic forms, it is straightforward for user to identify block effectively.

CAD STANDARD CREATOR INSTRUCTION MANUAL:

- **Startup AutoCAD® program** and **open the drawing** that needs to insert standard items.
- Enter **"CAD_STANDARD_CREATOR" command** or abbreviated form **"CSC"** to open the Cad Standard Creator window.
- After opening the extension, user can **identify the standard drawing** in case of necessary. In case the program cannot find the link to the proper standard drawings, a pop-up window will appear to ask user to relink these paths.
- **From the "Item type" list choose the item type which you want to insert**, then names of the item in standard drawing will be shown on the "Items" list.
- The Items in standard drawing will be separated into groups based on their names, on "Group" list **choose the group** that you want to insert into drawing. Since then the items in each group will be shown on "Items" list, also you can **enter the keyword into "Search" box for searching items** in that such group.
- **On the "Items Name" list, choose items that you want to insert → Click on "Insert" button** to transfer these such items into **"Insert items name" list**. User can **choose items that have the same name with the ones on current drawing**, in other to update their properties by clicking on the **"Same" button**. Or click the **"**All" button **for selecting all items** in standard drawing.
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- In order to make one of inserted items turn into the current item of the drawing, **user can tick "Set Current" box** and thence choose the item that need to be set.
- User can remove the items on **"Insert items"** list by choose them first and then **click on "Remove" button**.
- User can insert other items by selecting another type of items in **"Item type"** menu, **and thence perform the above operations repeatedly**.
- After identifying items need to be inserted into current drawing, **click on "OK" button** to give the order to begin the work.

CAD STANDARD BLOCK INSTRUCTION MANUAL:

- **Startup AutoCAD® program** and **open the drawing** that needs to insert standard blocks.
- Enter **"CAD_STANDARD_BLOCK" command** or abbreviated form **"CSB**" to open the Cad Standard Block window.
- After opening the extension, user can **identify the standard drawing** in case of necessary. In case the program cannot find the link to the proper standard drawings, a pop-up window will appear to ask user to relink these paths.
- The block in standard drawing will be separated into groups based on their names, on **"Group block"** list, **choose the block group** that you want to insert into drawing. Since then the block in each group will be displayed in a list, also you can **enter the keyword into "Search" box for searching blocks** in that such group.
- On the **"Block displaying" page**, **tick on the block which you want to insert or uncheck on unnecessary blocks**.
- Click on **"Previous"** button to come back to previous page and **"Next"** button for next page.
- Click the **"Same"** button for selecting blocks that have the same name as the ones in current drawing in order to update its properties as standard drawing, or click the **"All"** button for selecting blocks in standard drawing.
- After identifying blocks need to be inserted into current drawing, click on **"OK"** button to give the order to begin the work.

STANDARD DRAWING

Everytime open this extension, the current drawing file will be automatically identified what project it is located in base on its link, hence for convenience name of the standard drawing must be the same with folder that contains all project's drawings .

This drawing must have ".dwg" as its extension.

CLASSIFYING AND SEARCHING

After identifying standard drawing and types of inserting items, a statistic of all items in standard drawing will be displayed, besides those such items will be divided into groups based on their names. User can look for specific items in each group by entering keywords. It should be noted that this extension is not going to search all items in standard drawing, it will search for items in current group alternatively.

The symbols that used for separating the keywords are space " ", hyphen "-" and underscore "_".

For example: DIM-100", "DIM-50", "TEXT-100" and "TEXT-50" are 4 layers standard drawing has. They will be divided into 5 groups: All Layers, DIM, TEXT, 50 and 100.

GROUPS OF ITEMS	ITEMS IN GROUPS
All Layers	DIM-100, DIM-50, TEXT-100, TEXT-50
DIM	DIM-100, DIM-50
TEXT	TEXT-100, TEXT-50
100	DIM-100, TEXT-100
50	DIM-50, TEXT-50

SETTING CURRENT ITEMS

ITEM TYPES	SETTING CURRENT ITEMS FUNCTION
Block	Set value for “INSBASE” variable, changing default name of block by entering “INSERT” command
Dimmension style	Set current dimstyle
Layer	Set value for “CLAYER” variable
Layer filter	Set current layer filter
Layer state	Alter layer’s properties in current drawing
Layout	Set value for “CTAB” variable, set current layout
Linetype	Set current linetype
Material	Set value for “CMATERIAL” variable
Multiline style	Set value for “CMLSTYLE” variable
Multileader style	Set value for “CMLEADERSTYLE” variable
Plotsetting	Set default page set-up for model space or layout space , by entering “PRINT” command
Plotstyle	Set value for “CPLOTSTYLE” variable
Scale	Set value for “CANNOSCALE” variable
Tablestyle	Set value for “CTABLESTYLE” variable
Text style	Set value for “TEXTSTYLE” variable
User coordinate system	Set user coordinate system for model space for current layout
Visualstyle	Set visualstyle for current model space

TOOLS FOR CHOOSING, INSERTING AND REMOVING ITEMS

“All” button used for choosing all items on the list.

“Same” button used for choosing all items that have the same name the ones on current drawing.

“Reverse” button used for choosing the unchecked items on the list.

“Insert” button used for transferring the chosen items from “Items” list into “Inserted Items” list.

“Remove” button used for removing chosen items on the “inserting Items” list.

PROPERTIES OF INSERTED ITEMS

Properties of inserting items are the same with items in standard drawing. Several items have nested items. For instance: Linetype, Plotstyle, Material of Layer; Textstyle of linetype. Also, these such nested items are inserted into current drawing with the same properties as standard drawing.

Assuming that current drawing has an item which has the same name with inserted items, hence the properties of items in current drawing will be altered in order to be the same with the one in standard drawing.

For layout only, on the assumption that current drawing already had layout with the same name, hence it will be inserted into current drawing with a new name.

A list of nested items can be inserted into current drawing is stated as follows:

ITEM TYPES	NEST ITEMS
Block	Dimmension style of block's dimension
	Layer of block's objects
	Plotstyle of block's objects
	Linetype of block's objects
	Material of block's objects
	Multiline style of block's mline
	Multileader style of block's mleader
	Tablestyle of block's table
	Textstyle of block's note
	Nested blocks in block
	Annotative scales of block's nested block
	Annotative scales of block's dimension
	Annotative scales of block's mleader
	Annotative scales of block's hatch
	Annotative scales of block's note

	Textstyle of attribute definitions for blocks Layer of attribute definitions for blocks Plotstyle of attribute definitions for blocks Linetype of attribute definitions for blocks Material of attribute definitions for blocks
Dimmension style	Textstyle of note in dimmension style Symbol block in dimmension style Sub-dimmension style of dimmension style: Linear, Angular, Radius, Diameter, Ordinate…
Layer	Linetype of layer Material of layer Plotstyle of layer
Layer filter	Sub-Layer filter in Layer filter
Layer state	Layer used in layer state Linetype used in layer state Plotstyle used in layer state
Layout	
Linetype	Textstyle of text in linetype
Material	
Multiline style	Linetype used in multiline style
Multileader style	Textstyle of note in multileader style Linetype used in multileader style Symbol block used in multileader style
Plotsetting	Visualstyle used in multileader style
Scale	
Tablestyle	Textstyle used in tablestyle

Text style	
User coordinate system	
Visualstyle	Set visualstyle for current model space

When inserting items, please note that:

ITEM TYPES	
Layer	Assuming that layer with the same name already had in current drawing, On, Freeze, Lock properties of layer would be unchanged thus. If current drawing does not have layer with the same name, it will be inserted alongside On, Thaw and Unlock properties.
Layout	Viewport in layout will not be inserted. Coordinate axes in layout will be returned to default axes, WCS.

SETTING

There are several item types rarely used, in order to increase the performance, user can hide these item types on “Item type” list.

- On the Cad Standard Creator window, click on “Setting” button → show “CSC Setting” window.
- Uncheck the Item types that you want to hide.
- Click on “OK” button to apply these settings.

BALANCING CAD STANDARD EXTENSION AGAINST SIMILAR TOOLS IN AUTOCAD® SOFTWARE

There is a tool which has similar functions to Cad Standard Creator extension of AutoCAD® software, that is **Design Center**. A list of comparison of these tools is stated as follows:

FUNCTION	CAD STANDARD CREATOR	DESIGN CENTER
The amount of supporting item types	17	12
Searching and classifying tool	✓	Support searching items only.
Automatically identify standard drawing	✓	None
Update (redefine) standard items definition	✓	None (Except for block) For overcoming, use “Check Standard” alongside.
Manipulation	Be able to insert many items simultaneously.	Only one item can be inserted each time.
When inserting items	Blocks are displayed as names, not easy to identify. Use Cad Standard Block to overcome.	Blocks are displayed as icons, easy to identify.

When the current drawing has an items that has the same name with inserting items, Design center tool does not update (redefine) standard items definition in current drawing. In consequence, it is necessary to use “Check Standard” tool to update properties of inserting item in order to be the same with the one in standard drawing. A list of comparison of these tools is stated as follows:

FUNCTION	CAD STANDARD CREATOR	CHECK STANDARD
The amount of supporting items	17	4
Manipulation	Simple	Complex

Nested items in a item	Completely changed	Unchanged

A list of item types that each tool supporting is stated as follows:

ITEM TYPES	CAD STANDARD CREATOR	DESIGN CENTER	CHECK STANDARDS
Block	✓	✓	N/A
Detail View Style	N/A	✓	N/A
Dimmension style	✓	✓	✓
Layer	✓	✓	✓
Layer filter	✓	N/A	N/A
Layer state	✓	N/A	N/A
Layout	✓	✓	N/A
Linetype	✓	✓	✓
Material	✓	N/A	N/A
Multiline style	✓	N/A	N/A
Multileader style	✓	✓	N/A
Plotsetting	✓	N/A	N/A
Plotstyle	✓	N/A	N/A
Scale	✓	N/A	N/A
Section View style	N/A	✓	N/A
Tablestyle	✓	✓	N/A
Text style	✓	✓	✓
User coordinate system	✓	N/A	N/A
Visualstyle	✓	✓	N/A
Xref	N/A	✓	N/A

In brief, when adopting “Check Standards” tool of AutoCAD® program, item properties are not completely changed. Moreover it needs an amount of complex manipulations to make them nearly the same as standard drawing. For instance when using Check Standard to check a layer, all properties but linetype and material properties will not be changed. In order to change linetype’s properties to be the same with as standard drawing, linetype of that layer must be checked after that. If this linetype contains text, textstyle of linetype also need to be checked. However properties of material are not able to be changed due to a lack of supporting tool from AutoCAD® software.

To conclude, Cad Standard is a combination of Design center and Check Standard tool of AutoCAD® software, notwithstanding much more useful and convenient.