What's New in Impact 2015

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Document version: 1.1

This document contains details on the new features in ImpactCAD. This document applies to only the specified version of ImpactCAD.

ARDEN SOFTWARE

Contents

Overview

This document covers the new features introduced in the 2015 Release of Impact. Many of these features can be utilised out-of-the-box; however, several may require configuration changes, i.e., where an existing installation is to be upgraded. Such features are identified throughout this document by an asterisk (*). Certain features were introduced towards the end of the Impact 2015 life-cycle. Such features are identified throughout this document by twin asterisks (**). Not all of the features described within this document are applicable to all Impact licenses. Please consult Arden Software for further details.

3D Performance

Significant performance improvements have been made, regarding the loading, displaying & saving of 3D layers.

Delayed Loading of Textures

In Impact versions up to & including Impact 2014, Impact will not display a 3D scene until all the textures for that scene (board materials, artwork textures & occlusion textures for 'TruView' effects) have been loaded. This lead to 'dead-time' (Impact is unresponsive whilst waiting for the textures to load) whilst Impact was loading the textures.

New options (**Delayed Loading of Textures**) have been added to delay the loading of textures into a 3D scene. This has the effect of allowing Impact to draw a folding model instantly (once the drawing itself has been loaded) and to load the textures once the model has been drawn. The benefit is that the 3D layer may be manipulated (Pan/Zoom or Rotate View etc) as soon as the folding model is drawn, and 'dead-time' is virtually eliminated. This technique is applied to viewing 3D layers within the Projects Browser, as well as editing a 3D layer and switching between 2D & 3D layers. Delayed loading of textures is optional (users who don't make use of large/advanced textures or complex 3D scenes can switch this feature off, if required) and is also configurable.

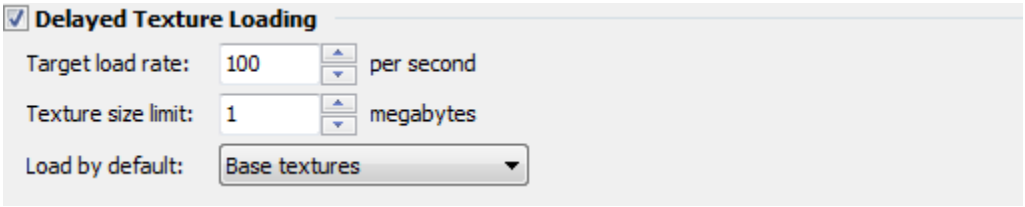


Fig 1 – Delayed Texture Loading Options

Target Load Rate – allows you to specify the number of textures Impact will *attempt* to load, per second (*assuming* the textures load instantly). Setting a low value (such as 1), would instruct Impact to try to load one texture map per second (which would lead to a very gradual load-in of textures but an instant display of a folding model). A high value (such as 100) would then instruct Impact to *attempt* to load 100 texture maps, per second (effectively all the textures within a 3D scene) – which would lead to a quicker *attempted* load of textures, though a slightly delayed display of a folding model.

Texture Size Limit – allows you to specify the size of textures (once in memory, *not* on disk!) which will be subjected to delayed loading.

A value of 1MB would mean that all textures under 1MB (which should be manageable for *most* hardware setups) would be not subject to delayed loading, and Impact would attempt to load them instantly. This would allow a folding model to be displayed very quickly, followed by the delayed loading of all textures over 1MB in size.

A value of 100MB would mean that textures of under 100MB would not be subjected to delayed loading – and so Impact would attempt to load them instantly. This would (in all likelihood) lead to a significant delay (and 'dead-time) whilst Impact is attempting to load some very large textures.

Load by Default – will allow you to choose a texture type which is **not** subject to delayed loading.

Choose from:

- **None** - don't load any textures by default, and therefore subject all textures to delayed-loading. This will allow for the **quickest** display of a folding model, ***displaying a simple white texture***, after which the base (material) textures will be delay-loaded, followed by delay-loaded artwork textures..

- **Base textures** - don't apply delayed loading to base (ie material) textures. Impact will attempt to load the material textures instantly, followed by the delay-loaded artwork textures. As the base textures are not *usually* the primary cause of a performance-hit, this is a usually good compromise. The model will be displayed quickly, ***with the material textures***, whilst the artwork is then delay-loaded.

- **Base and artwork textures** – do not apply delayed-loading to either texture type. This allows for a quick display of the folding model but the textures would not be subject to delayed-loading. This would mean that although the model is displayed, Impact would be unresponsive until all the textures have been loaded.

Composite Textures

Impact creates large composite textures for 3D scenes – to allow backwards compatibility with old (ie Impact 5.1 and earlier) versions of the Impact application. For **Impact 2015**, we have ceased to do this – instead, composite textures are created solely on export to the Impact (*.ipd) file format, and only when the following option is enabled:

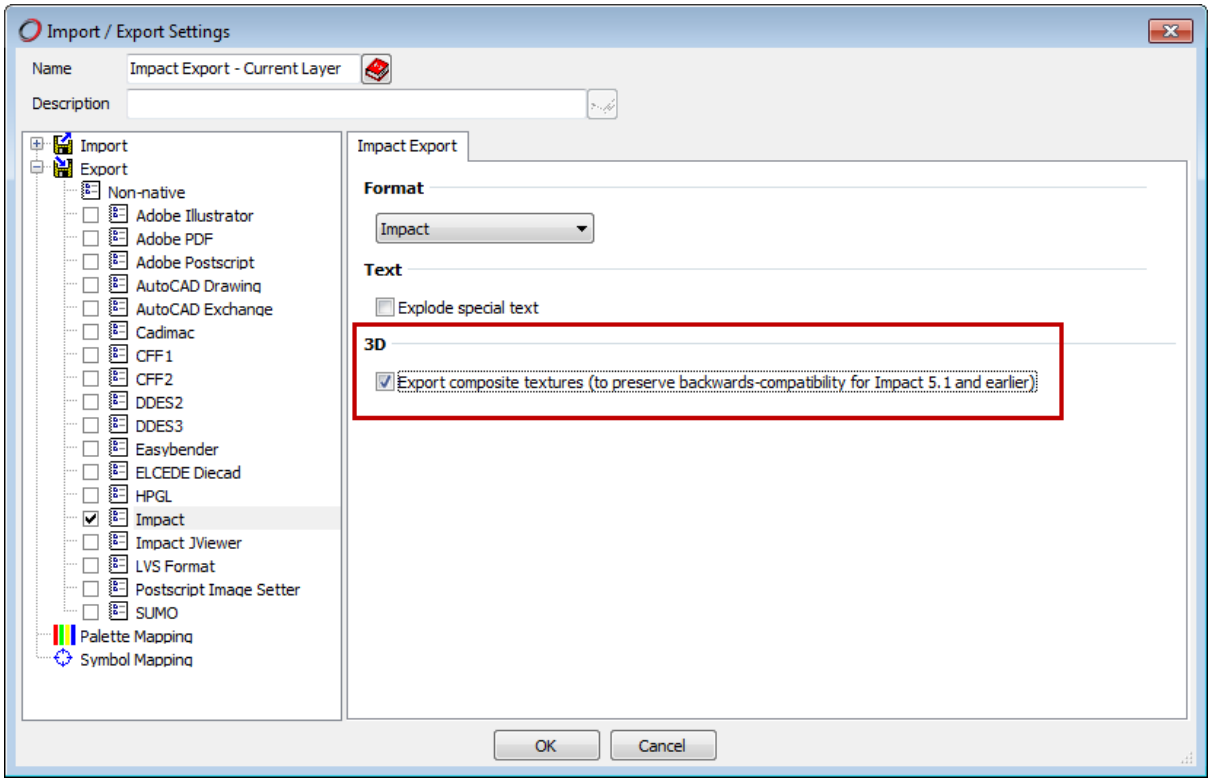


Fig 2 – Export composite textures

This option will be **unchecked** for an upgrade to **Impact 2015**. Simply opening & saving an existing drawing in **Impact 2015** will remove the composite textures from a 3D scene, resulting in a decreased file size and providing a performance improvement.

Utilise OpenGL3 Extensions

In **Impact 2015**, **Shaders** are now cached for an entire Impact session, after their first use. This provides an additional performance boost when displaying 3D layers. Newer **integrated Intel** graphics setups may struggle with this feature, so this is also an optional feature within the **Advanced** 3D Settings:

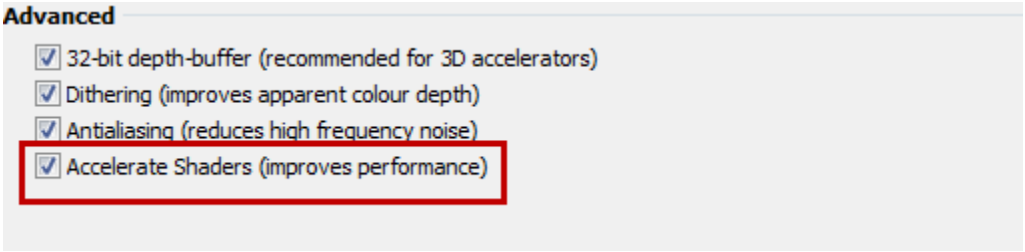


Fig 3 – Accelerate Shaders option

The recommendation (when using integrated graphics setups) is to disable this option. On an upgrade to **Impact 2015**, this option will checked (enabled) by default.

Transparency Flagging

Whenever a project containing 3D layers is opened, Impact searches through each texture to identify textures which feature transparency. In **Impact 2015**, Impact stores a flag within the drawing to indicate whether or not the textures contain transparency. Therefore, we have eliminated unnecessary searching, resulting in a performance boost. This development is strictly internal, with nothing to configure.

Display of Total Texture Sizes

As an aid to fault-finding & benchmarking, **Impact 2015** has the ability to display the size of all textures within a 3D scene. The total texture size is now displayed within the **Texture Manager**:

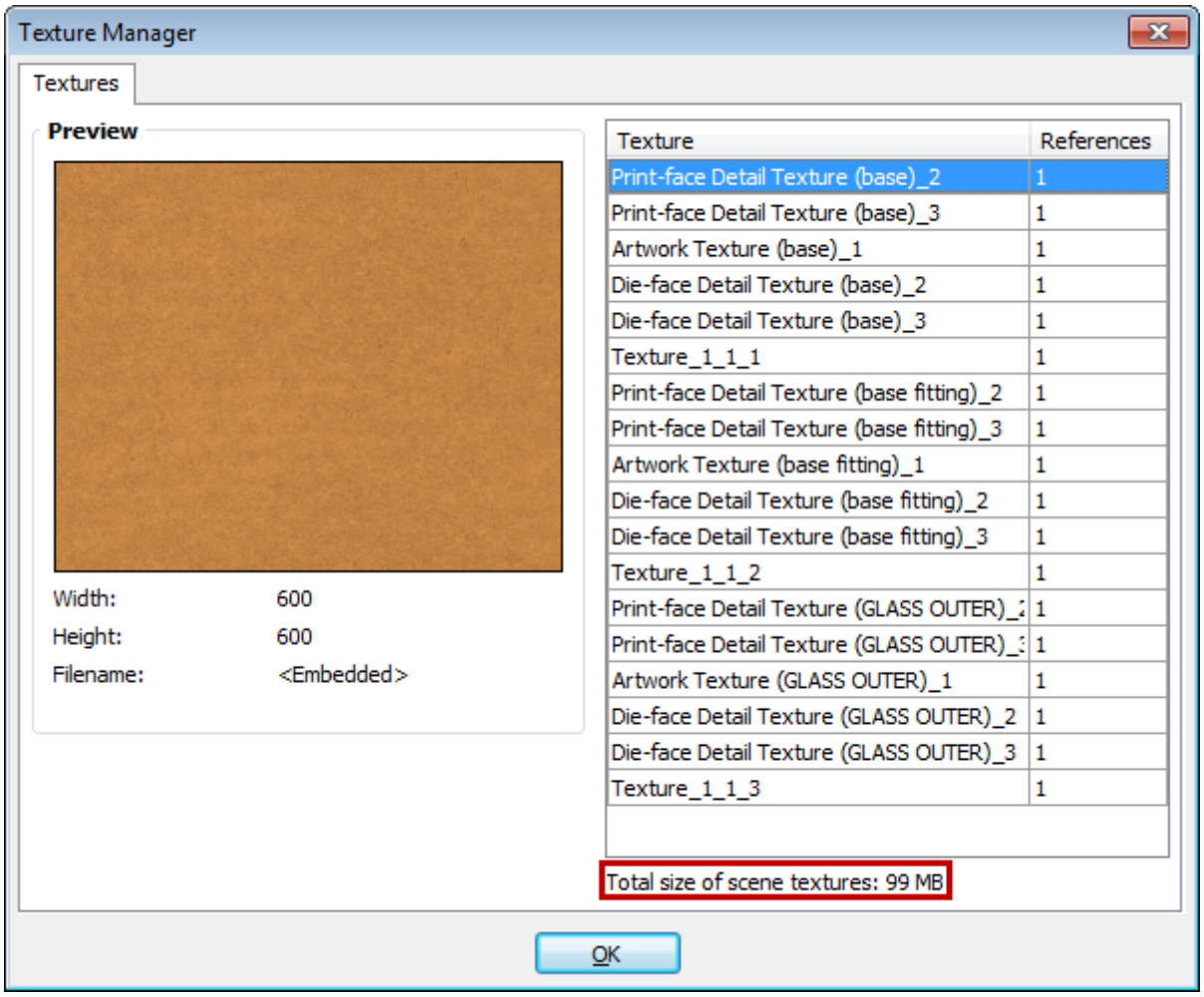


Fig 4 – Total Texture Size

Framerate Display

Another benchmarking feature has been added – the ability to display framerates within a 3D scene. This is a new option within the 3D Visibility options.

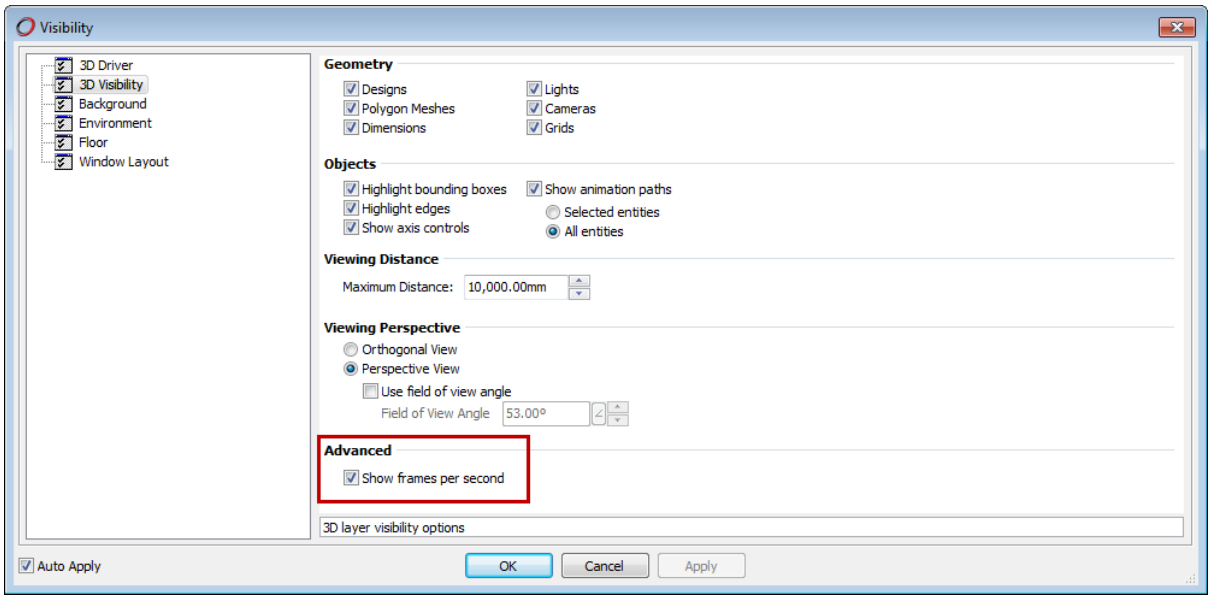


Fig 5 – Show Frames per Second option

The details will be displayed in the bottom-left corner of the 3D scene, using the user-defined 3D Text colour:

Fig 6 – Frames Per Second Display

Additional Debug Logging

Yet another benchmarking feature - the debug.log file now lists previously-hidden textures (and their sizes) plus overall texture-load times. This is not an optional feature and requires no enabling/configuration:

2015:01:16 13:25:32:854 TMaterial::GetTexture - Loading texture 'Artwork Texture (base)_1' with size 13729792 bytes.
2015:01:16 13:25:33:499 TMaterial::GetTexture - Loading texture 'Occlusion Texture (base)_2' with size 4194304 bytes.
2015:01:16 13:25:33:558 TMaterial::GetTexture - Loading texture 'Mask Texture (base)_1' with size 4 bytes.
2015:01:16 13:25:33:564 TMaterial::GetTexture - Loading texture 'Occlusion Texture (base)_3' with size 4194304 bytes.
2015:01:16 13:25:33:628 TMaterial::GetTexture - Loading texture 'Occlusion Texture (base fitting)_3' with size 4194304 bytes.
2015:01:16 13:25:33:731 TMaterial::GetTexture - Loading texture 'Occlusion Texture (base fitting)_2' with size 4194304 bytes.
2015:01:16 13:25:33:801 TMaterial::GetTexture - Loading texture 'Mask Texture (base fitting)_1' with size 4 bytes.
2015:01:16 13:25:33:809 TMaterial::GetTexture - Loading texture 'Occlusion Texture (GLASS OUTER)_3' with size 4194304 bytes.
2015:01:16 13:25:33:867 TMaterial::GetTexture - Loading texture 'Occlusion Texture (GLASS OUTER)_2' with size 4194304 bytes.
015:01:16 13:25:40:500 TMultiWin::OnLoadingTimer - Texture load timer.
2015:01:16 13:25:40:514 TMultiWin::OnLoadingTimer - Texture delay loading completed in 8486 milliseconds.

Fig 7 – Additional Debug Log Entries

3D Environment

Workstation Options

As the **3D Renderer** settings (**Automatic Degradation**, **Texture Mapping**, **Advanced** (and the new **Delayed Texture Loading** options)) have always been workstation-specific , they have been moved from **View>Visibility** (and **3D context menu>Visibility**) to a new **3D** Branch within **Options>Environment>Workstation**:

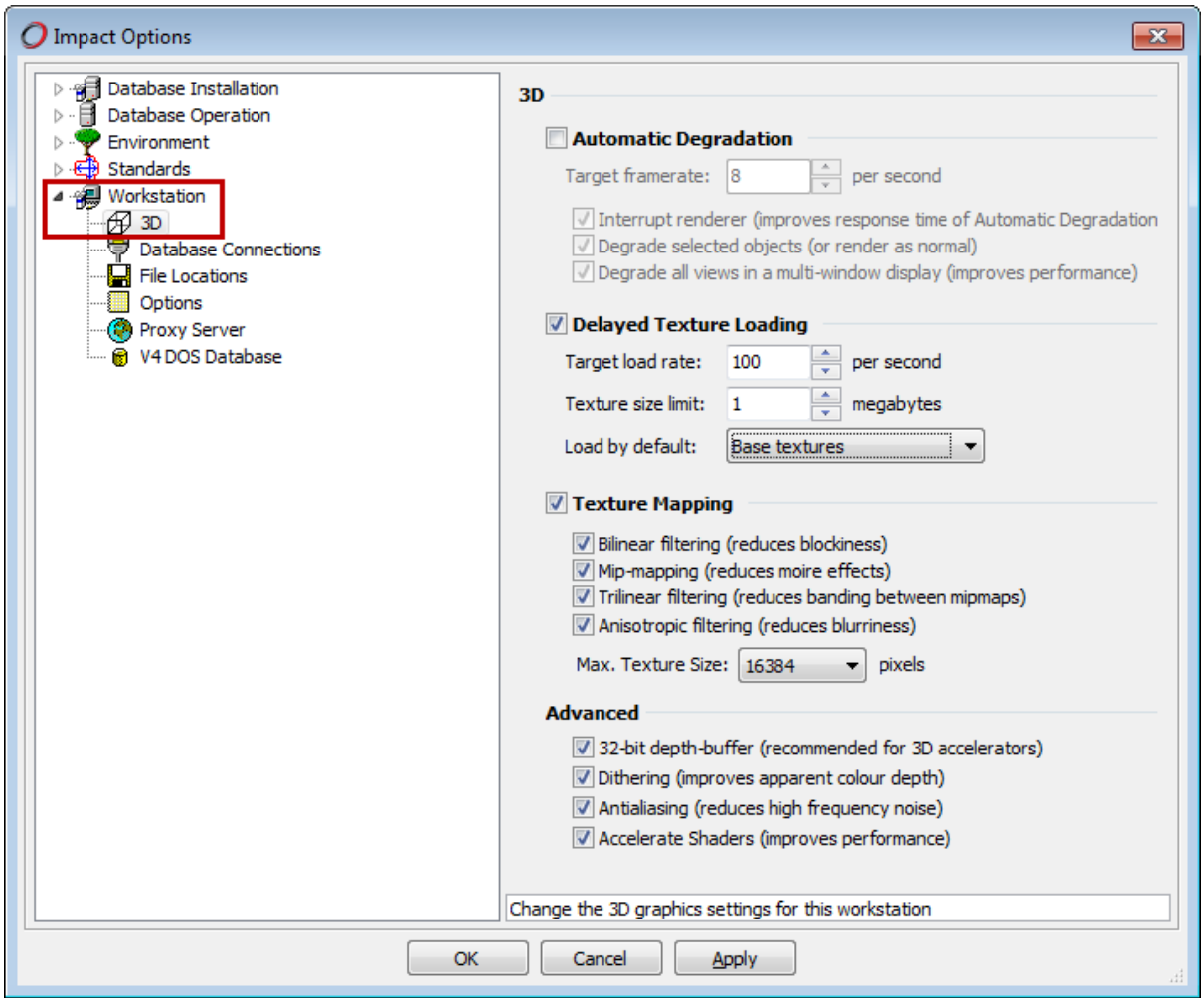


Fig 8 – 3D Settings within Workstation Options

Colour Coding of 3D Centre Snaps

Following on from the colour-coding of 3D Snaps in **Impact 2013 R2**, centre-snaps can now be colour-coded (previously they used the same colouration as mid-point snaps):

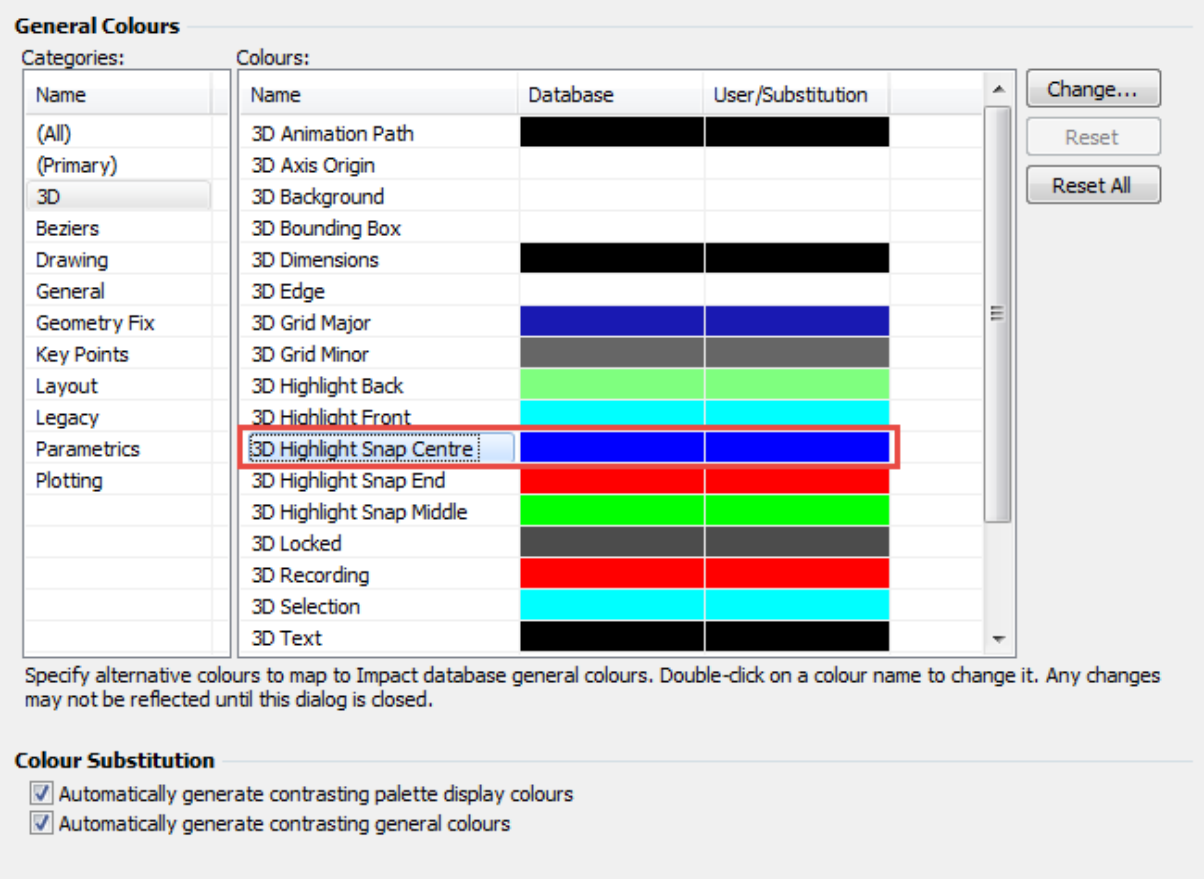


Fig 9 – Colour Coding for 3D Centre-Snaps

3D Hardware

Impact 2015 now supports 3D Connexion's Space Mouse/Space Pilot devices:

Fig 10 – 3D Connexion Devices

The Space Mouse/Space Pilot devices are to be used by your non-dominant hand, providing pan, zoom & rotate controls, whilst the dominant hand is free to run other tools within a 3D scene (such as **3DMove**, **3DObjectRotate**, **Dimension Aligned**, **EnquireDistance2Points**).

The devices are often configurable, allowing you to assign Impact tools to mouse buttons via a simple desktop application:

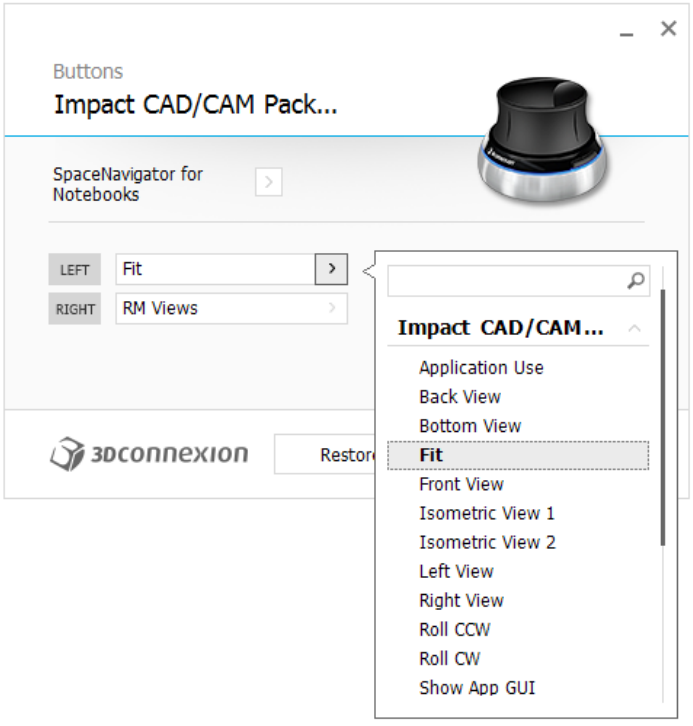


Fig 11 – Typical 3D Connexion Button Options

3D Animation

Animation Looping

Following on from the animation frame copy/paste/mirror options added to Impact 2014, it is now possible to loop a *selected* range of keyframes. Simply click & drag the time line to create the selection and the play controls (**First Frame/Previous Frame/Play in Reverse/Play/Next Frame/Last Frame**) will respect the selected range of frames.

Fig 12 – Looped Animation Frames

Simply double-click the time-line to cancel the selection.

Keyboard Shortcut for Goto Frame

The **3D Animation Goto Frame** feature (which was added to the Animation Editor for Impact 2014):

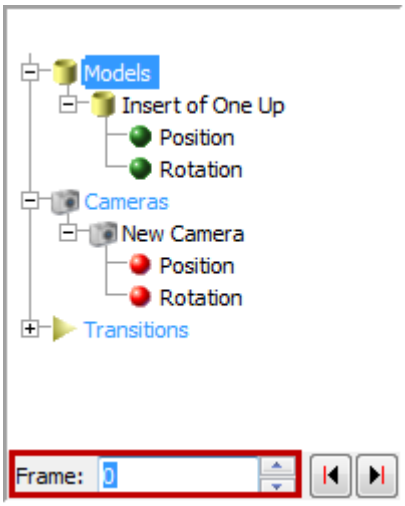


Fig 13 – Hotkey Assignment for 3D Animation Goto Frame

may now be assigned to a user-defined hotkey, providing further speed improvements when creating/editing animations.

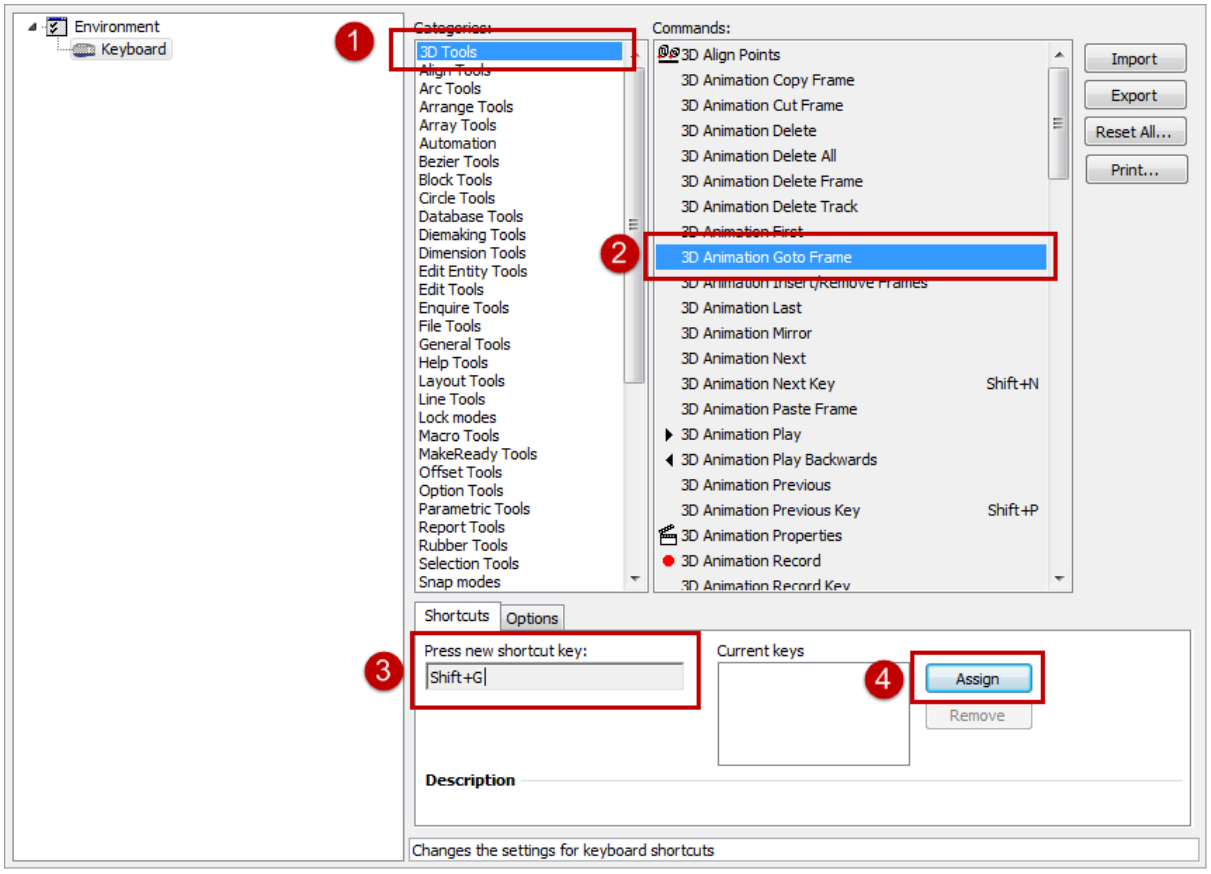


Fig 14 – Hotkey Assignment for 3D Animation Goto Frame

Improved Keyboard Shortcuts

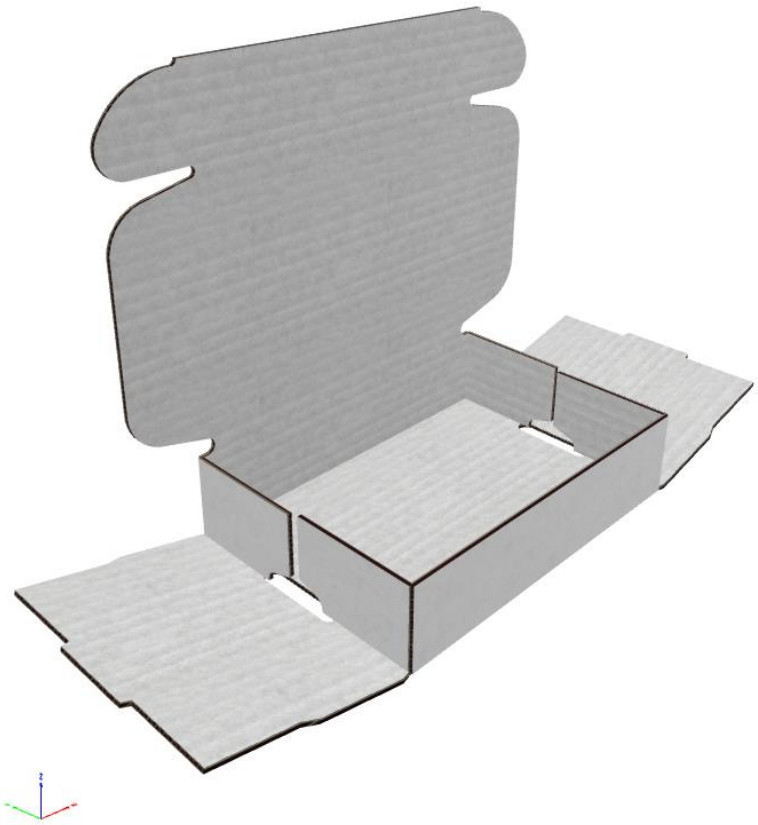
Superfluous (and possibly confusing) keyboard shortcuts have been removed, leaving a clearer set of possible assignments.

3D Import & Export

Animated PDF/U3D Exports

Impact 2015 is now able to produce animated 3D PDF & U3D files. Create your animation as normal and simply export to the **Adobe PDF** or **U3D** formats (there are no additional settings needed to facilitate the export of animation frames).

Animation playback controls - Adobe Reader X



Animated **PDF** offers several advantages over WRL (Virtual Reality Modelling Language) and AVI (Audi Video Interleave) animations. Reduced file size (and so easier distribution) is one significant benefit. The fact that most desktops/laptops are pre-installed with the requisite version of Adobe Reader (so that no further downloads/plugins are required) is another benefit. Note that there is a known issue with **Adobe Reader** which prevents the automatic update of animated **camera** frames. **Face-folding** & **object movement/rotation frames** are unaffected by this.

Improved PDF/U3D Lighting

3D PDF/U3D Exports from **Impact 2015** now contain a better approximation of 3D scene lighting than previously. You no longer have to apply the “Bright Lights” setting within Adobe Reader.

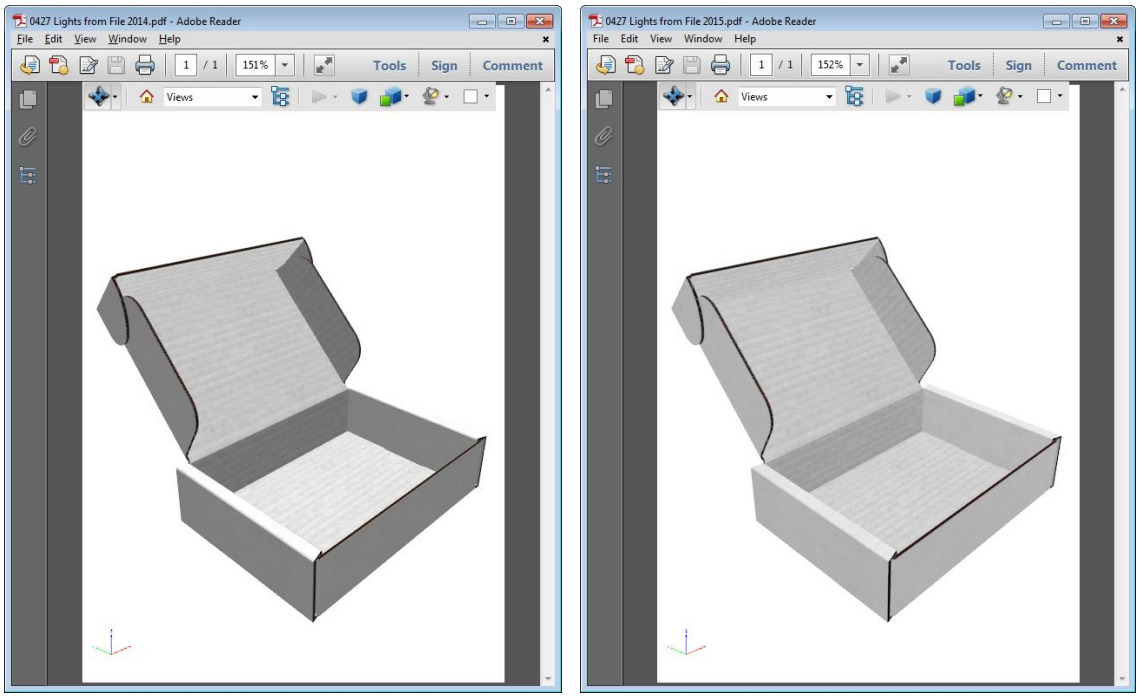


Fig 15 – 3D PDF Exports from Impact 2014 (left) and Impact 2015 (right)

There are no Impact changes necessary (or settings to configure), in order to benefit from this improvement.

Export of Acetates to the 3D PDF/U3D Formats

Another 3D PDF/U3D improvement which requires no changes to settings or workflow is the export of acetates/window patches to the Adobe PDF/U3D formats.

Fig 16 – 3D PDF Acetate Window Patch

Environmental Reflections in the 3D PDF/U3D Formats

An additional 3D PDF/U3D improvement requiring no changes is the export of environmental reflections:

Fig 17 – 3D PDF Export with Environmental Reflections

Instancing of 3D PDF/U3D Exports

When exporting an array of objects to the **PDF/U3D** formats, **Impact 2015** will create 'instances' of the models, so that instead of a 20-unit array of a 5MB model creating a 100MB 3D PDF file, **Impact 2015** will create a 5MB 3D PDF, containing the entire 20-unit array. As with the previous PDF/U3D exports, no workflow or settings changes are needed to benefit from this enhancement. This is especially effective when exporting arrays of imported solid objects.

Hoops Library/3DX Update

A new version of the **Impact 3DX** library has been issued (**v1.5**) – and with it come updates to the supported file formats:

- Parasolid – support for version **v26.0** has been added
- Solid Edge – support for version **ST7** has been added.
- SolidWorks – support for version **2014** has been added.
- STEP – support for version **AP 242** has been added.
- Siemens PLM NX Software – support for version **9.0** has been added.
- Autodesk Inventor – support for version **2015** has been added.
- CATIA V5-6 – support for version **2014** has been added.
- Creo – support for Parametric version **3.0** has been added.

In addition, the **Solid Edge** reader now imports welding & frame data; the **IFC** reader features improved load time with many files and the **Rhino** reader now supports external file references.

Align to Plane/Ground

A new **Edit Bar** option has been to the **3D Align** tool in **Impact 2015**. "Align selected".

Fig – New Align Selected option for 3D Align tool

When enabled, all **selected** objects may be aligned to a single face/plane. Consider a complex 3D object containing sub-assemblies/sub-models, which do not form groups (or a parent/child hierarchy). The new option will allow the all the **selected** objects to be aligned to a single face or plane, whilst still preserving the ability to move or rotate the individual objects.

Automation/COM

Impact 2015 COM enhancements focussed upon performance improvements, enhancing the ability to create shapes and providing interfaces to the new Document Management suite. All the **Impact 2015** COM interfaces are described in the Impact COM Documentation, available on request.

Improve Performance by Limiting Canvas Redraws

Two new **IApplication** methods have been added – **app.BeginBatch()** and **app.EndBatch().**

These methods disable & enable canvas redrawing, which can lead to a significant performance boost.

A new **IActiveBlock** method has been added - **activeblock.Select(entitiesCollection, selectStateBoolean)**

Additional IShape features

The ability to create & manipulate closed shapes has been enhanced by the addition of two new modes to **IShapeCreator.Perform** (creation mode) – **Points** and **Holes**; whilst a new **IShape** method has been added - **shape.Extents()**

Document Management

To complement the new Document Management functionality, a new object (**IDocument**) has been created, with many new methods & properties – including:

IDocumentColumn, **IDocumentColumn IDocumentColumns**, **IDocumentContext**, **IDocumentCreator**, **IDocumentCreatorDocument**, **IDocumentCreatorRelationship**, **IDocumentCriterion**, **IDocumentExtender**, **IDocumentGroup**, **IDocumentGroups**, **IDocumentHistory**, **IDocumentMetaExtrator**, **IDocumentMetaExtractors**, **IDocumentMIMEType**, **IDocumentMIMETypes**, **IDocumentProvider**, **IDocumentRelationship**

and *many* others…

Additional **Document** properties have been added - **ICustomerContact**, **IDatabaseLayer**, **ISite**, **IUser** and **IDatabaseItem**.

All the Impact COM interfaces are described in the Impact COM Documentation, available on request.

IAP Installation by Drag & Drop

Impact Auto-Plugins (IAPs) can now be installed by simply dragging & dropping the IAP onto the Impact canvas, as opposed to manually placing the IAP within the defined *Plugins* folder.

Blocks

Block Rename - Block Inspector Consolidation

The block rename tool now allows you to rename all selected blocks to the same root name. If for example you have a layer with blocks named: cutout_1, cutout_2, cutout_4 this function would allow you to quickly rename all the selected bocks to have a continuous _number sequence. This function has also been added to the block inspector.

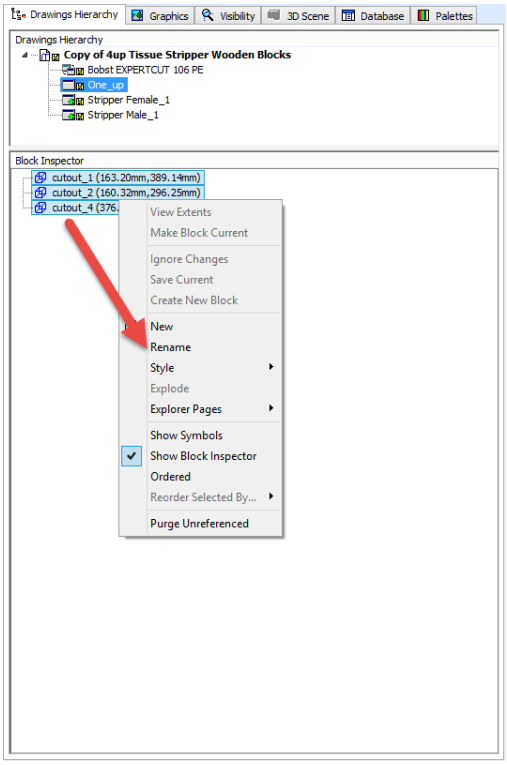


Fig – Block Inspector rename

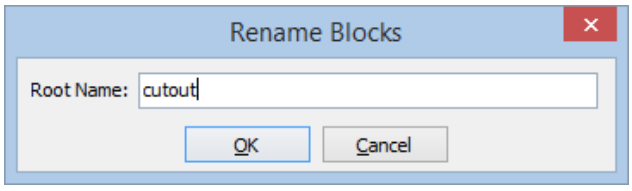


Fig – Block rename multiple selected blocks

Running the block rename tool when you don't have any blocks selected opens the block rename dialog as previous versions of Impact.

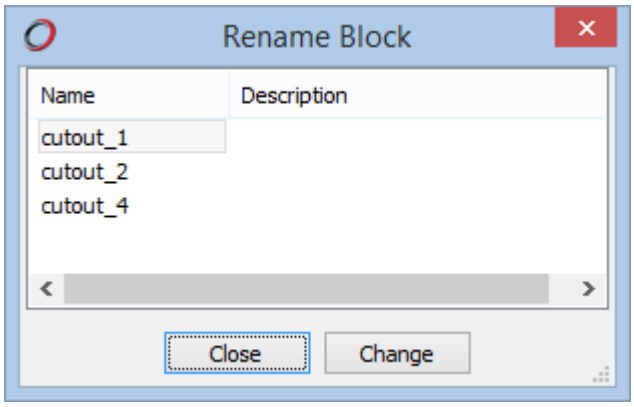


Fig – Block rename without any selected blocks

Block Styles - Block Inspector Consolidation

The block change style tool has been added to the block inspector.

Block Order – Block Inspector

The block inspector lists the blocks in alphanumerical order rather than alphabetical order i.e. 'MyBlock_10' appears after 'MyBlock_9' rather than after 'MyBlock_1'.

The order the blocks are stored in the drawing are displayed in the block inspector and the order of these can be now be changed simply by dragging and dropping selected entries or by pre-defined conditions of the name, style or first palette.

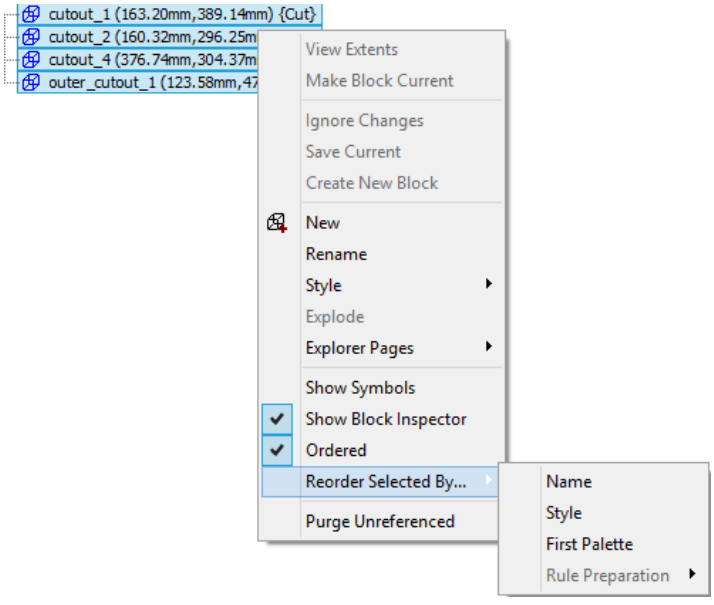


Fig – Block Inspector reordering

Diemaking General

Restart of Tools (Flatbed & Rotary Diemaking)

Following on from the **Impact 2014** Stripper & Layout enhancements, Diemaking session data is now stored within the drawing itself. This means that it is now possible to quit & restart the Diemaking tools without the need to delete all of the existing Dieboard geometry and 'start from scratch'.

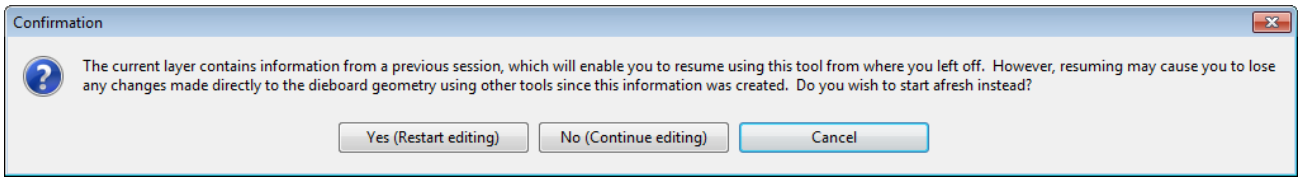


Fig – Diemaking Session Restart/Continue Editing Options

The session data may also be deleted via the **Layer Properties** dialog:

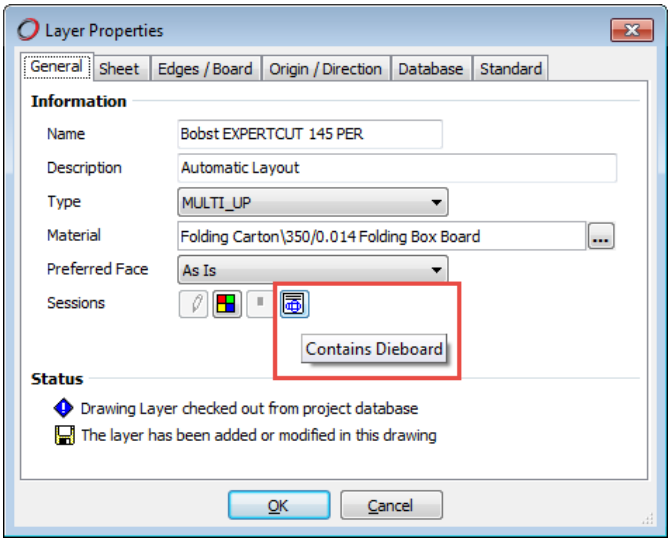


Fig – Diemaking Session Data Icon within Layer Properties Dialog

Running Diemaking Tools on a Locked Layer/Markup Layers

There may be occasions when Diemakers wish to be able to run tools (such as Rubber Creator, Matrix Creator, Stripper Creator) on layers which may be '*locked*' (checked-out) by other users.

To **remedy this, Impact 2015** introduces the concept of a **Markup Layer** – a new layer type, containing an insert of the original drawing layer. **Markup Layers** may be created at any time - via the context menu on the **Drawings Hierarchy** or the **Layer Tabs**:

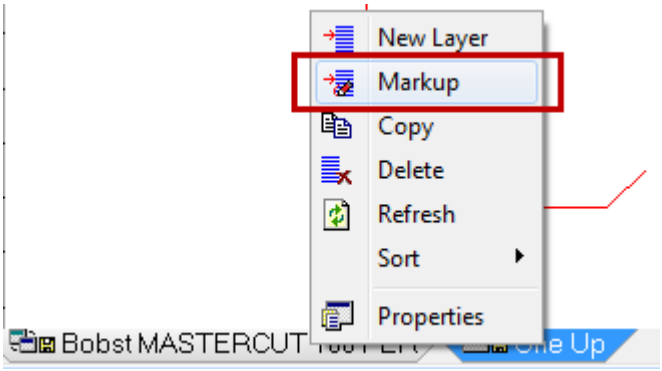


Fig – Manually Creating a Markup Layer via Layer Tabs

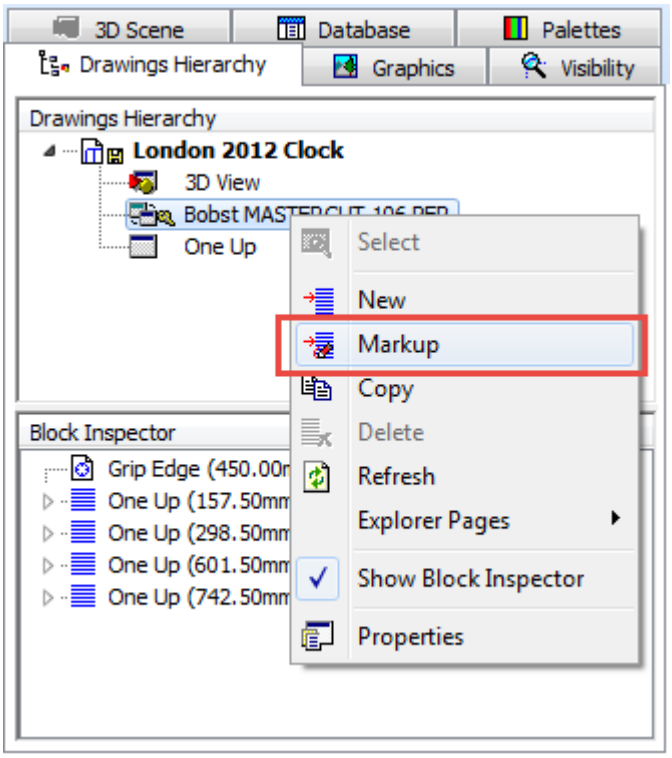


Fig – Manually Creating a Markup Layer via Drawings Hierarchy

Fig – Markup Layer Tab

Most significantly, **Markup Layers** can be created automatically when a the **Dieboard Creator**, **Rotary Dieboard Creator**, **Rubber Creator**, **Blanker Creator**, **Matrix Creator** tools are executed on a *'locked'* layer:

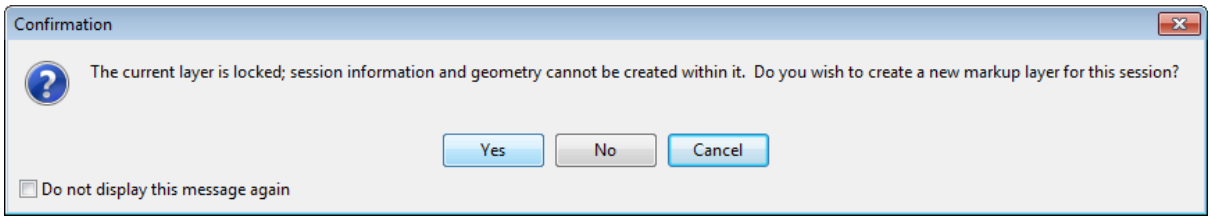


Fig – Automatic Creation of Markup Layer

Note that **Markup Layers** will not display the **Layer Properties** dialog and the **Plot** tools have been disabled.

The concept of **Markup Layers** can also be used to annotate a layer without making any changes to the drawing.

Diemaking Blanker

Improved Workflow

There have been several workflow enhancements to the blanker tool with the new shortcut keys for edit, copy and delete. In previous versions of Impact you had to manually complete some tools before allowing you to start a new tool, for example the fillet tool, these restraints have been removed.

Jogger Alignment

The symbol placement tool now allows you to place joggers on the opposite side of the frame to the one being placed and where this is not required you can add a construction line allowing alignment of drop and internal joggers. Where possible you would place joggers in line to optimise the areas for light beams and non-stop bars.
The symbol placement tool now defaults to the place symbol mode and not the select symbol mode.

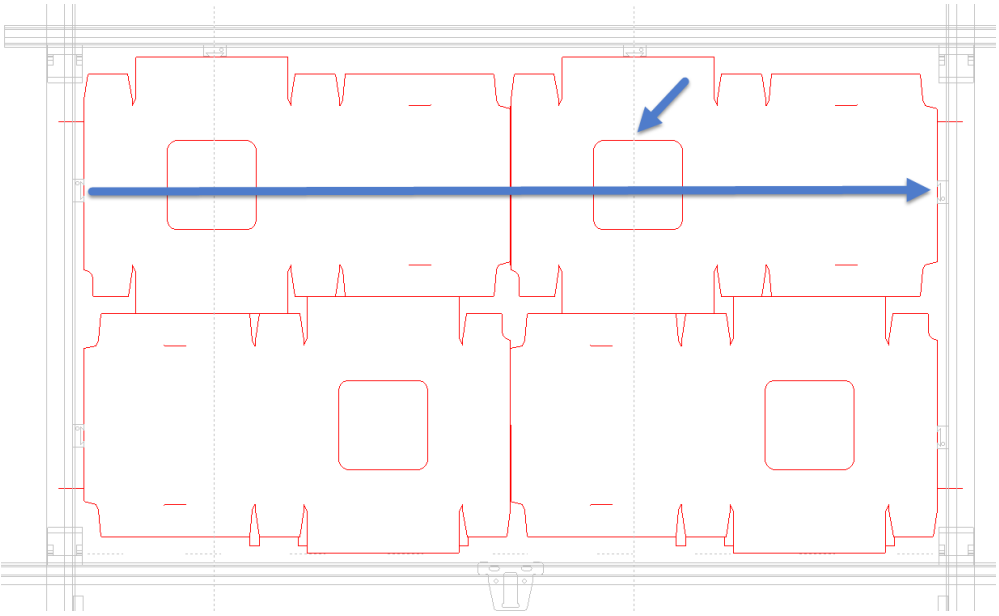


Fig – Jogger alignment and construction lines

Bar Clamp Position

With Impact you can automatically add the clamps to lock the bars to the frame, the default position of these can now lock to the side of the bar as well as the centre. This option now allows for the automatic placement for clamps that lock to the side of the bar of any width as with systems such as the BSI quick lock system.

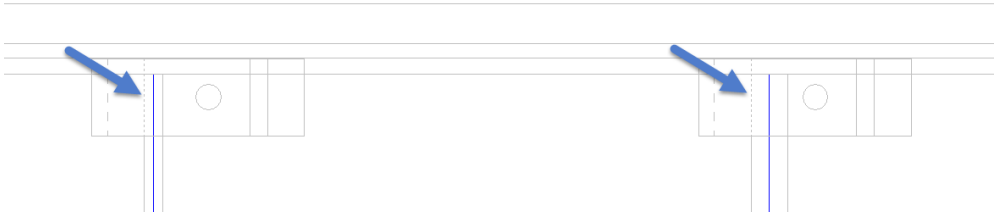


Fig – Bar clamps positioned to the side of any width bar

Copy Section of a Bar

Creating lower frame bar on a multiple layout can require intricate profiling which is often repeated across the length of a bar, to ensure the bends are kept the same you can now copy a bent section of a bar to replicated areas.

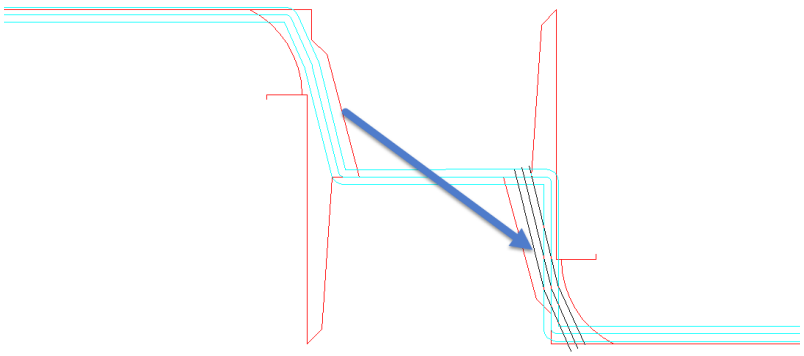


Fig – Copying a bent section of a blanker bar

Upper Pin Placement

The option to rotate upper support pins has been added to aid the placement of different styles.

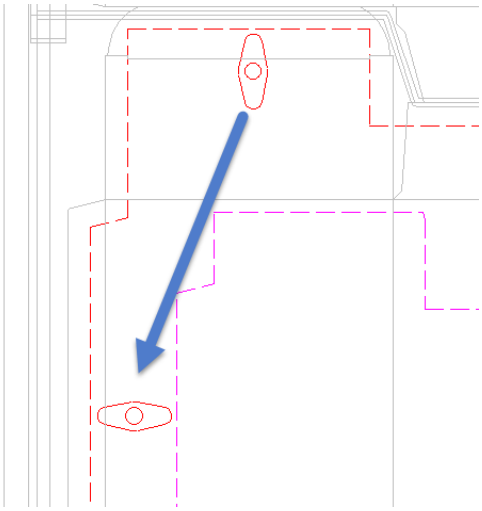


Fig – Placement of upper location pins can be rotated

Diemaking Rotary

The Rotary Dieboard has had some significant enhancements added to **Impact 2015**.

Cylinder

The concept of the cylinder has been added, this then allows the relationship between the shells, design and cylinder to be clearly visualised. The cylinder parameters are used to calculate the print repeat value which can then be used to determine the linear spacing for the mounting bolts (see symbol pattern changes)

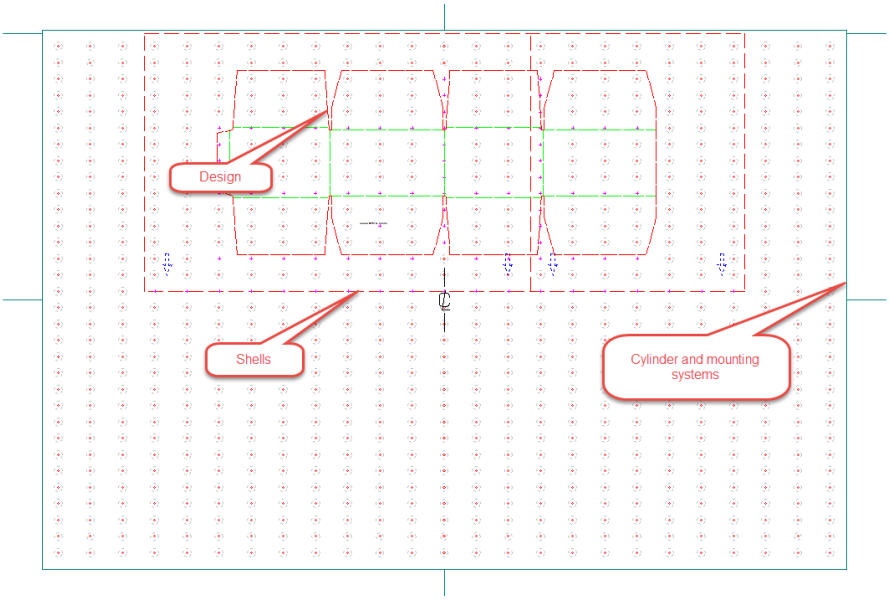


Fig – Rotary cylinder

Cylinder Positioning

The default placement of the design and the shells on the cylinder can now be set for each machine. The option to place the design on the cylinder by:

- Centre crease – centre cylinder
- Centre design – centre cylinder
- First crease – offset from edge of the cylinder

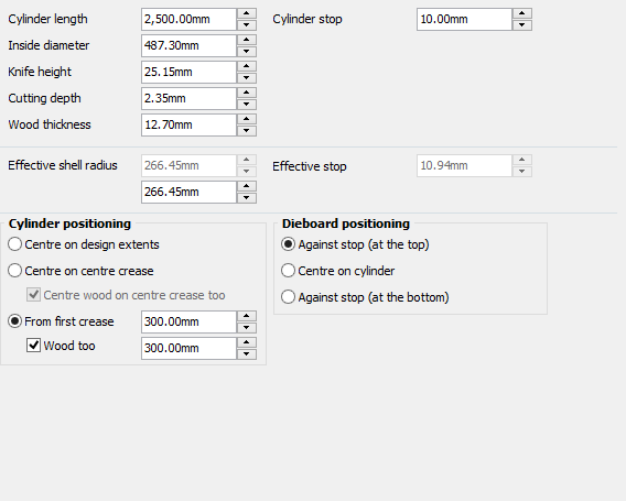


Fig – Cylinder settings page from the MTS

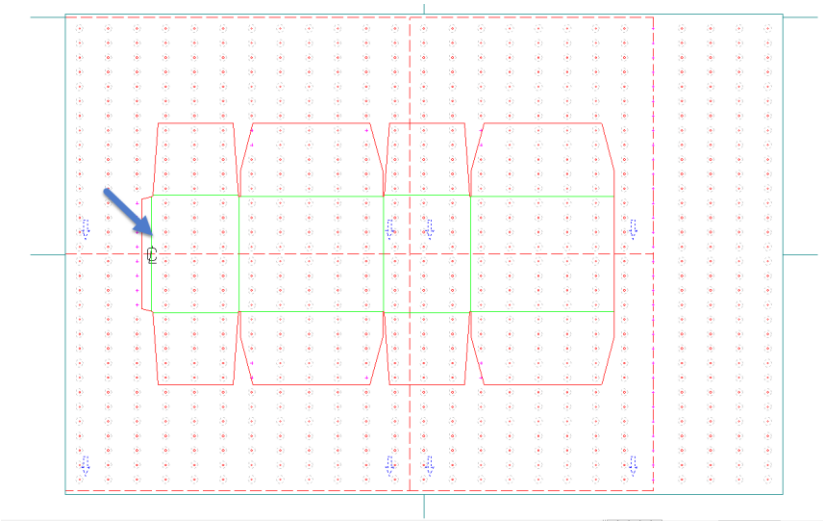


Fig – Design positioned relative to the first crease

Shells

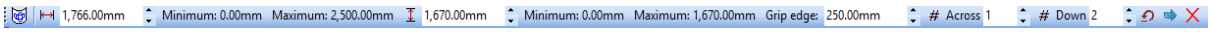
The diemaker may stock more than one shell length per cylinder diameter, for example 1m, 1.5m and 2m lengths. These lengths can be added to the settings allowing the optimal number across the cylinder default when applying the Rotary Dieboard.

Symbol Pattern Placement

Two new options have been added to aid the placement of standard parts, symbol patterns can now be placed relative to the cylinder or relative to each shell. Bolt symbols placed relative to the cylinder have the option for automatic selection based on a grid, for example every 5th bolt along and around. The ability to place a pattern relative to each shell allows automatic placement of parts such as lead or trail edge markers on all the shells.

Woodsize

The option to check the woodsize before creation has been moved to an edit bar mode, replacing the pop up window and making it consistent with the other editing modes. This then allows the user to change the calculated size quickly if they know for example a reducing the size would reduce the number of shells. In this mode the shells extents are shown on the design so any changes can be seen before being applied.



Editing

The size of the overall wood or individual shells can be modified interactively using the edit mode shells. This mode allows the sides of the wood or any split lines to be repositioned by dragging and repositioning or by editing the shell values on the edit bar.

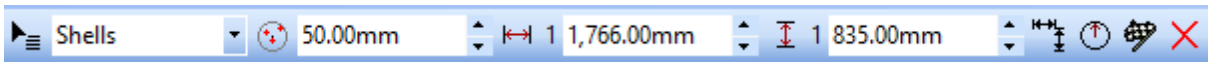


Fig – Shells mode edit bar

The mode cylinder position allows the user to move the cylinder and the dieboard relative to design if required. This is useful if the design needs moving slightly to ensure enough bolt positions are available for mounting.

Mounting Holes

The edit bar mode place mounting holes shows all the possible positions for a mounting including the default selection grid. In this mode the user can quickly toggle which mounting bolts on the cylinder are to be added to the dieboard.

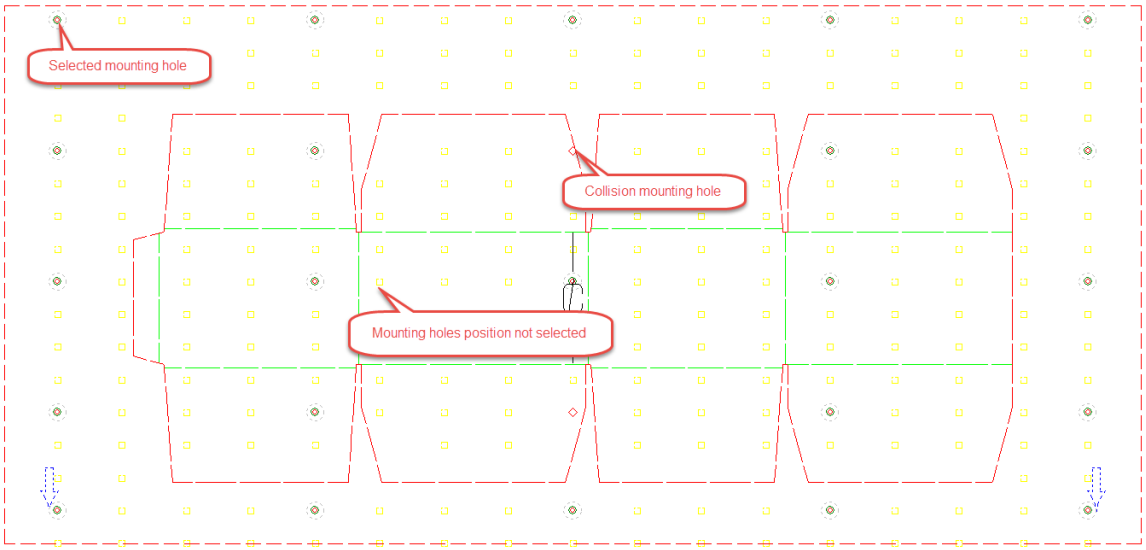


Fig - Mounting hole editing

Rotary Split

The Rotary Split separates the rotary dieboard into separate shells for laser output. In Impact 2015 the option to create the separated shells into a new layer has been added whereas previous version changed the dieboard geometry in the active layer.

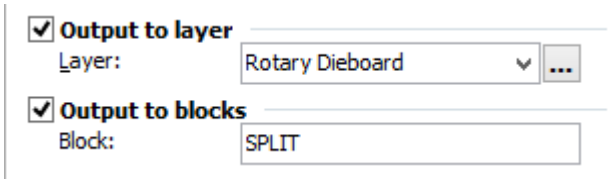


Fig - Rotary Split output to new layer MTS

Editing Tools

Quick Explode Tool

Whilst the **Explode** tool provides options for exploding any number of entities & entity types (Blocks to entities, Symbols to blocks, Text to lines, Arcs to lines/arc segments/quad segments, Beziers to arcs & lines/Dimensions to lines etc), the complex nature of exploding a wide-range of objects necessitates a large & complex dialog box to contain all the various options & combinations. The **Quick Explode** tool in **Impact 2015** provides a quick & easy explode option, without the dialog box. The tool is also the first example of a widely-used scripted solution being incorporated into core Impact functionality.

Fig – Quick Explode tool

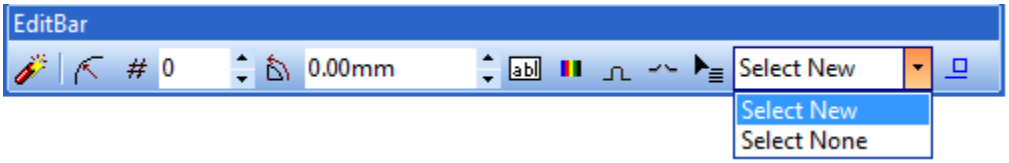


Fig – Edit Bar Options for the Quick Explode tool

Initial **Edit Bar** options:

- **Arcs to quad segments** – arcs are split at their quadrant boundaries. Unchecking this option will then display the following arc options:
    - **Maximum lines from an arc** – specifies the maximum number of line entities into which the arc can be explode.
    - **Arc tolerance** – specifies the maximum distance of the new lines from the original arc. A tolerance value of zero causes the tool to use its default tolerance value.
- **Special text** – text entities containing special text (such as items calculated from system functions, database fields, macros and so on) are converted into normal fixed text.
- **Palette composition** – entities that are assigned palettes with a rule type other than Normal (such as Combination or Zipper) will be divided into entities matching the manufacturing information pattern. For example, a single cut/crease line will be broken into sections of cut line and crease line.
- **Bridges** – entities containing bridges will be divided into individual entities between each bridge.

1-2-1 Bridge Format – entities containing bridges which do not conform to the 1-2-1 format are split into smaller entities which do. Unlike the Bridged Entities explode method, these new entities are end-to-end and can therefore be rejoined. This method is often used when exporting the data to another system which only supports 1-2-1 bridging.

- **Selection** – chose from **Select New** (to leave the exploded entities selected) and **Select None** (to leave the exploded entities unselected)

- **All Selected** – performs the explode function on all **selected** entities.

Running the tool and clicking on an entity will explode that entity down to its default components. For example, clicking on a Bezier will break the Bezier down into its arc and line components. This is shown by the entity becoming selected, and a small circle marker generated for the new entity. You can keep clicking this way to break individual entities down further.

If the tool is activated with multiple entities selected, the behaviour of the tool is modified slightly - clicking on one of the selected entities (or the '**All selected**' button) will explode all of the selected entities, but only from the highest entity type. Note that the tool gives entity types a priority, in the following order:

SYMBOLS
BLOCKS
DIMENSIONS
SPECIAL TEXT*
TEXT
PALETTES*
BRIDGES*
BEZIERS
ARCS
LINES

* Only exploded if the respective toolbar switches are enabled.

Clicking an entity whilst many are currently selected will deselect them, and explode the single entity as first described.

Geometry Tools

Anti-Flicker

The **Double Buffering** display setting (found in **Impact 2014** and earlier) has been replaced by a new **Anti-Flicker** control. This feature enhances the Double-Buffering mechanism, to optimise the drawing of "cursors" (for example when inserting a symbol or symbol pattern, or pasting geometry). The flicker effect when moving a complex "cursor" (typically when there are many symbols or entities to be placed) has now been eliminated. This allows the "cursor" content to be placed significantly faster & more accurately than ever before. After upgrading to **Impact 2015** (and also upon switching **Appearance Settings**), the following dialog is displayed:

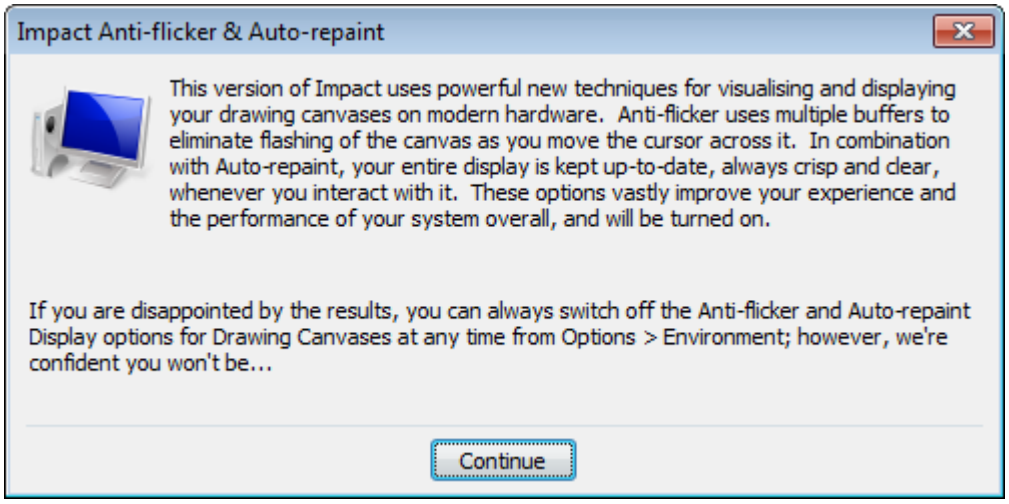


Fig – Anti-Flicker Message upon Login/Loading of Appearance Settings

The **Anti-Flicker** control has been added to the **Display** options, found within **Options>Environment>Display>Drawing Canvases**:

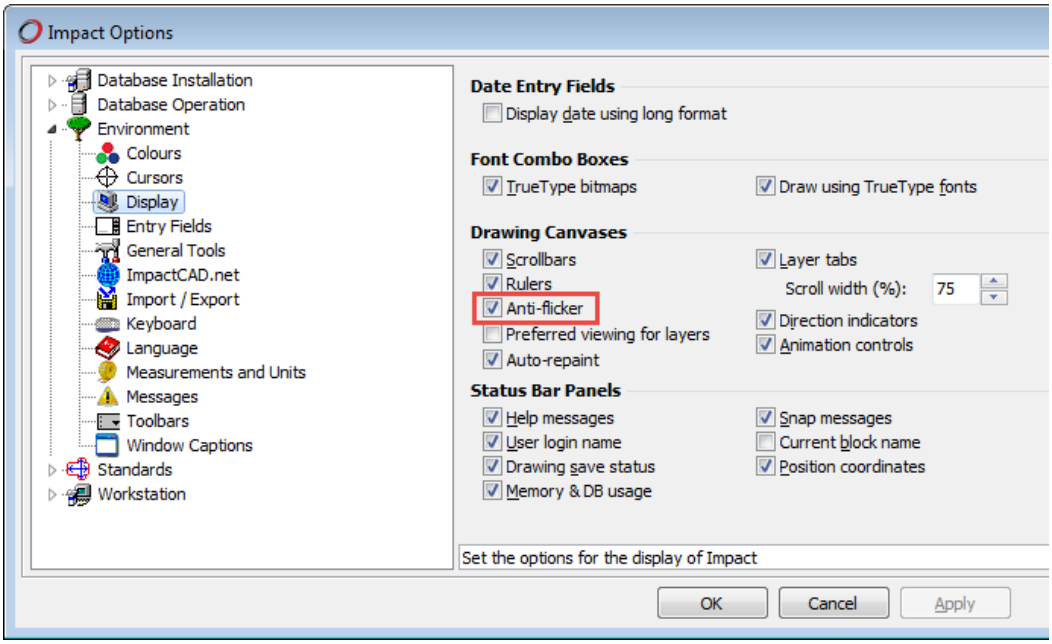


Fig – Anti-Flicker Control

Bezier Pen

A new Bezier tool **Draw > Bezier > Pen** has been developed for **Impact 2015**. This is intended to replace the **Draw> Bezier> Path** tool (which has been added to the "Legacy" tool category) by providing additional functionality & flexibility.

Fig – Bezier Pen tool

Click the first point, then click-and-drag subsequent points (or just click to create straight segments) and finish with a click. On cancelling the tool, the segments are used to generate Bezier entities (or optionally line entities, for straight segments).

Edit Bar options:

- Rewind – to "undo" the last operation
- Forward – to "redo" the next operation (if there is one)
- Lines – causes straight segments to generate line entities, when the tool is finishing

Fig – Edit Bar Options for Bezier Pen

Node markers are drawn at the ends of each segment – these can be repositioned with a click-and-drag (but only when "handlebars" are not displayed). Similarly the "handlebars" can be displayed by clicking on a node – the bars can then be repositioned by click-and-dragging on the bar ends.

Right-click on any node marker for the following functions:

- Asymmetric Node – makes the "handlebars" move independently (different lengths, opposite direction)
- Symmetric Node – makes the "handlebars" move together (same length, opposite direction)
- Cusp Node – makes the "handlebars" move independently (different lengths, different directions)
- Node To Lines – makes the "handlebars" zero length, "flattening" the curves either side of the node
- Line Before – "flattens" the segment before the node
- Line After – "flattens" the segment after the node
- Curve Before – "unflattens" the segment before the node

Import Export

Add additional settings for DWG/COLLADA export*

Options to export textures and warnings regarding target cameras have been added to the COLLADA/Packaged COLLADA and DWG export settings:

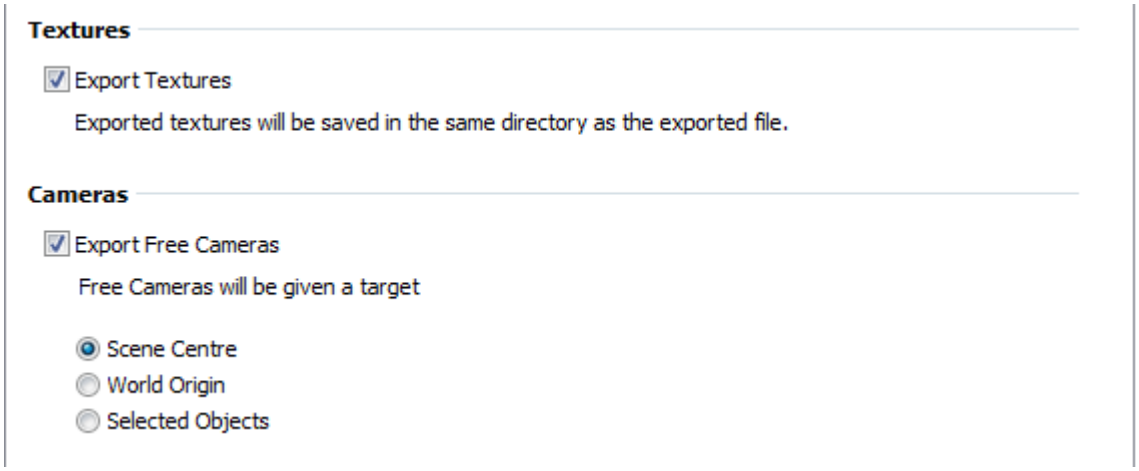
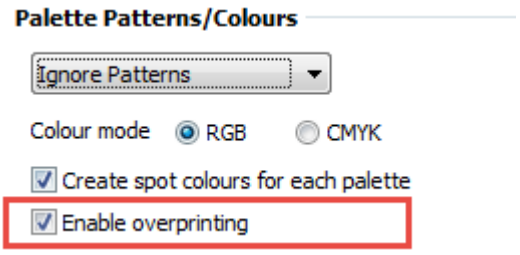


Fig – COLLADA/Packaged COLLADA and DWG 3D Export Master Tool Settings

PDF Overprinting

Impact 2015 now offers the ability to enable **overprinting** when exporting to the **PDF** format - preventing artwork knock-outs when palette spot colours are hidden (typically when an Impact-generated PDF file is used within a graphics workflow).



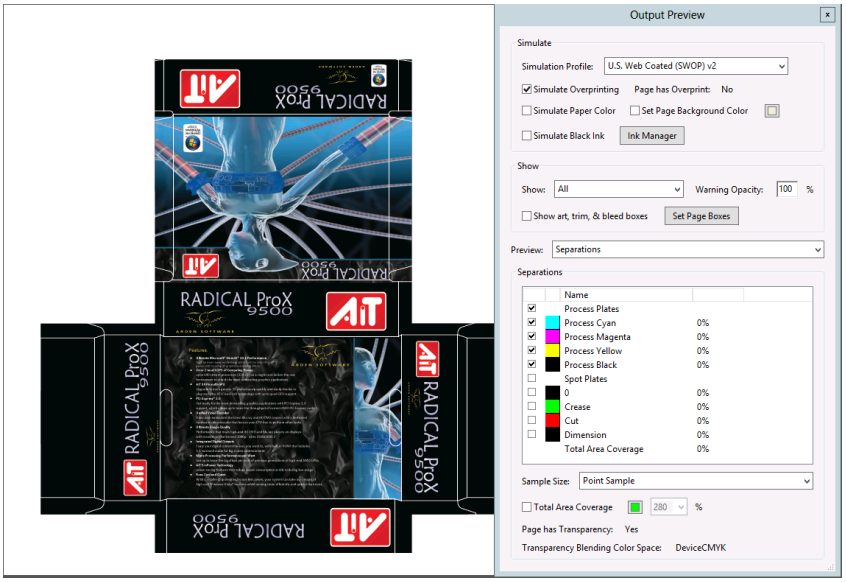


Fig – Artwork Knock-Outs (No Overprinting)

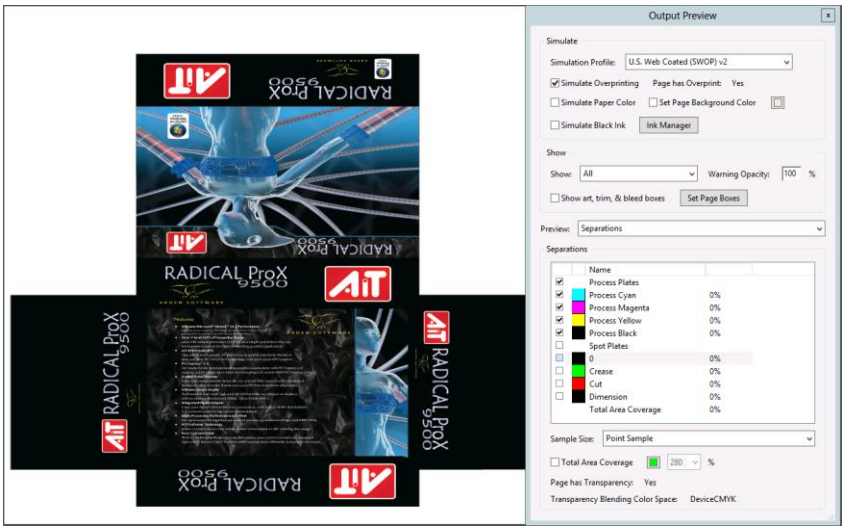


Fig – No Artwork Knock-Outs (Overprinting)

PDF Export in CMYK

Impact 2015 now offers the ability to export to the **PDF** format using **RGB** or **CMYK** colour modes.

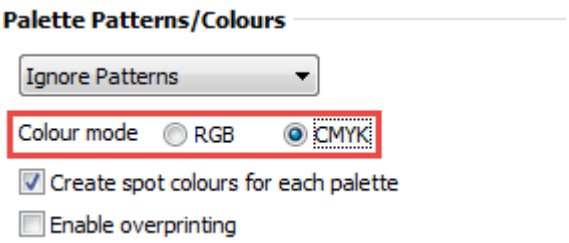


Fig – RGB/CMYK Colour Mode options

Consolidation of PDF/PS/AI Export Settings

The **Adobe** Export Settings branch for Impact 2014 (and previous) contained identical nodes for the PDF, PS and AI formats, and offered many controls which affected the PDF format only. As such, many of the options were superfluous and the dialog as a whole was confusing. The export settings for **Impact 2015** have been modified and now contain only valid options which affect the relevant file formats.

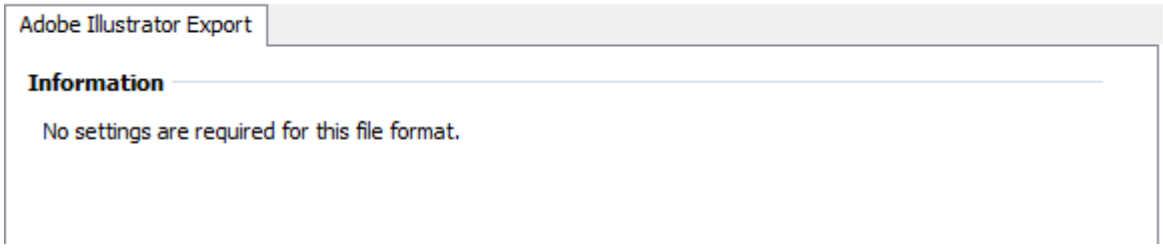


Fig – Adobe Illustrator Export Branch

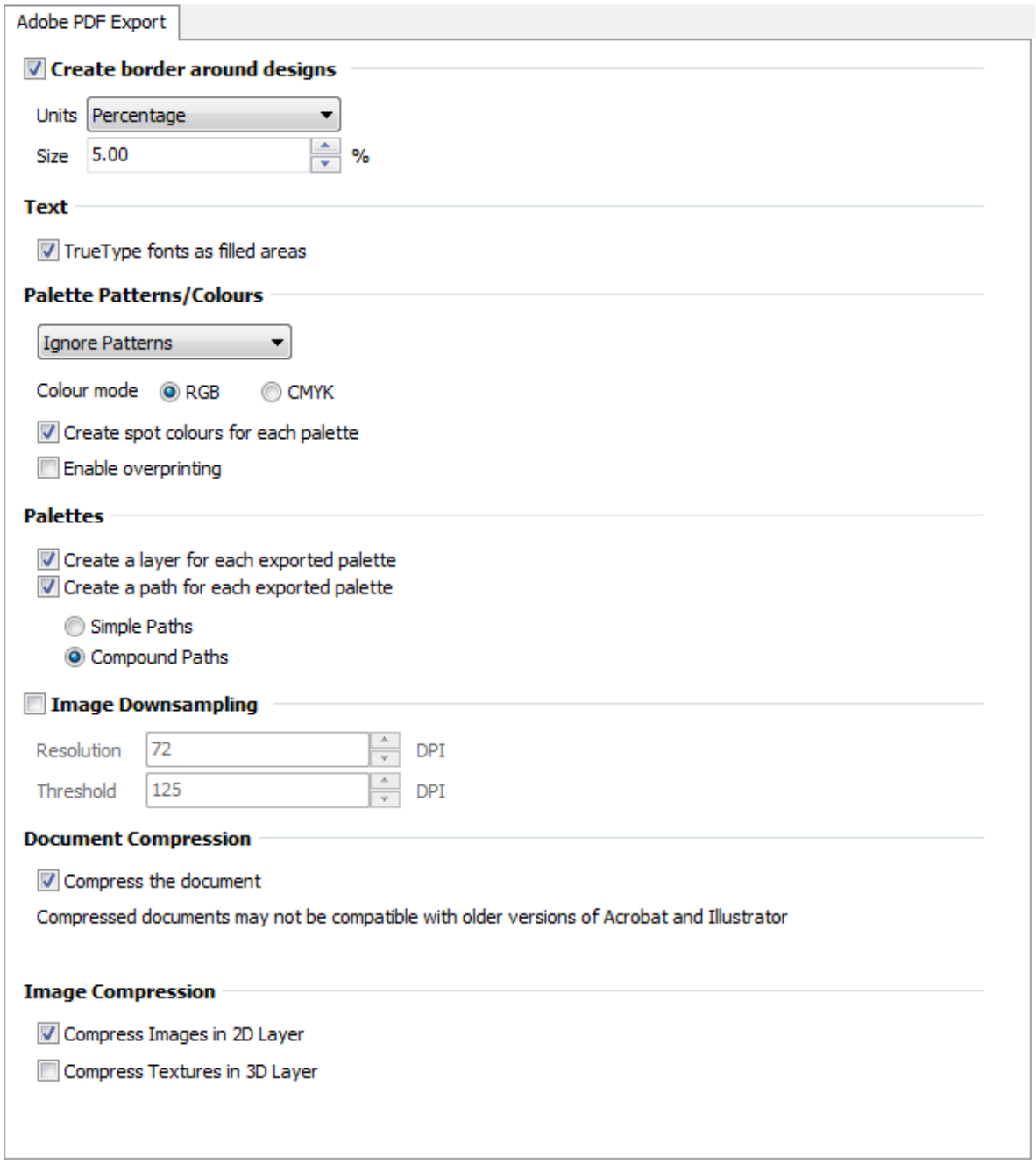


Fig – Adobe PDF Export Branch

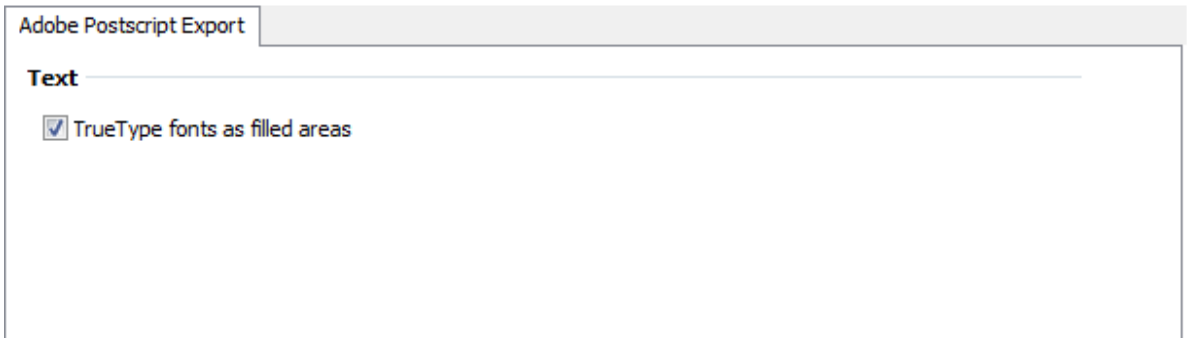


Fig – Adobe PostScript Export Branch

*Note that the **Import** settings for the Adobe formats remain untouched.*

RGB - CMYK conversion in Import/Export settings

The calculation of values for RGB>CMYK conversions (and vice-versa) within the Import/Export Settings now use the correct formulae. Because of this, exports to the Adobe formats (using existing Import/Export Settings) may look slightly different, following an upgrade to Impact 2015.

Enhanced Import/Export Dialog Boxes

New options for **Browse/Hide Folders**, **Open file after publishing** and **Open folder after publishing** have been added to the **2D Export**, **3D Snapshot**, **Send to Graphics File**, **Save** (Image) **As** dialogs:

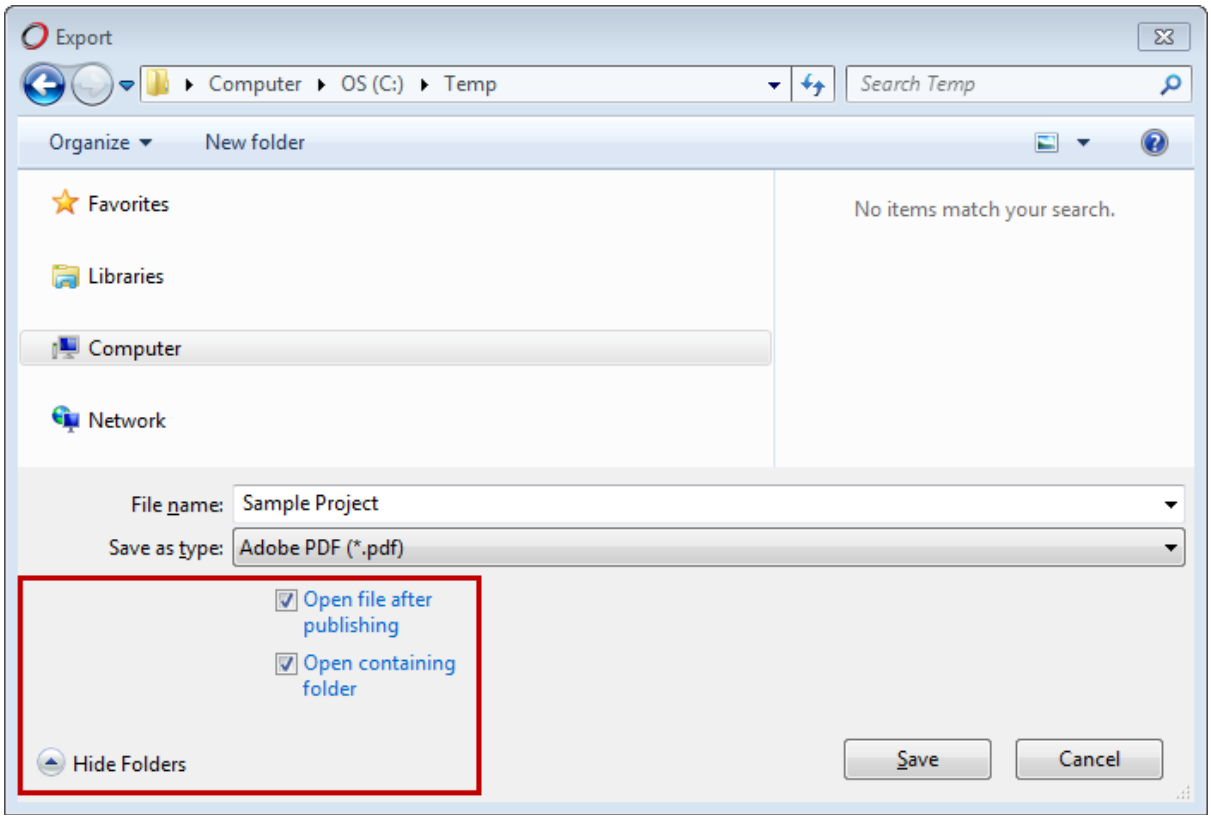


Fig – Enhanced Export Dialog

Similarly, the 2D Import dialog has also been enhanced with new options for displaying a **Preview** window and **Show previous versions** of the selected file:

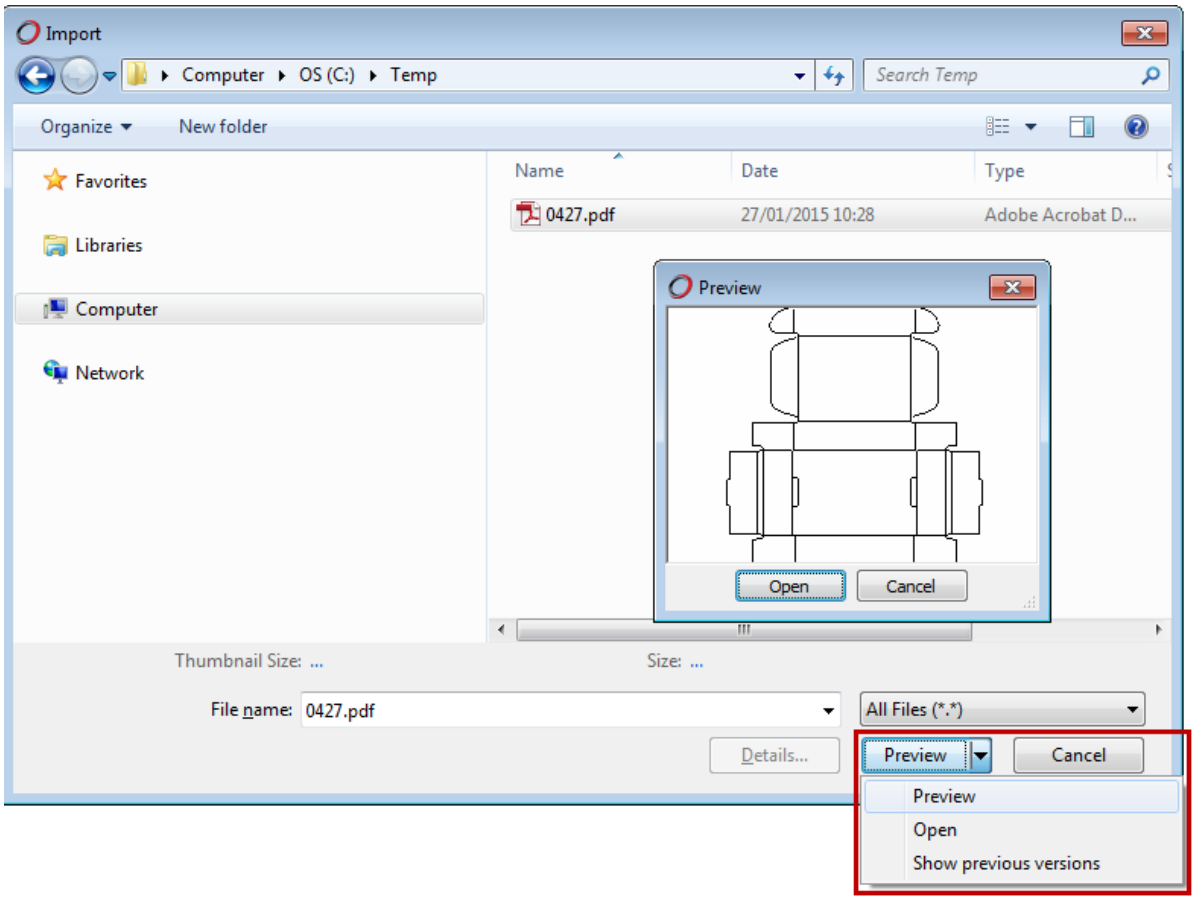


Fig – Enhanced Import Dialog

Installers

Remove Support for Win 2K/Win XP

As of April 8, 2014, Microsoft's support for Windows XP ended. Therefore, **Impact 2015** will be the first major version that **will not be compatible** with this operating system. However, **Windows Vista** and above will continue to be supported.

Layouts

Add *All* Favourite Stock Sheet Settings to Layout Sheet Assistant

Impact 2015 now makes it possible to add **all** your '*Favourite*' **Stock Sheet** Master Tool Settings to the **Layout Sheet Assistant** with a single click. If you can make use of pre-cut board/stock sheets, this can save time when creating/estimating layouts across multiple sheets.

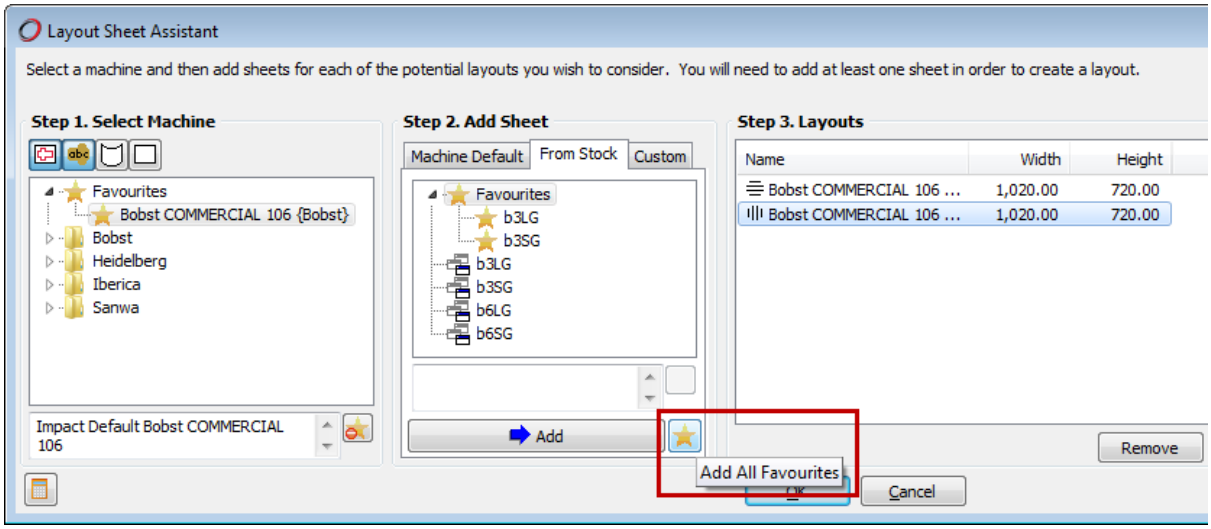


Fig – Add All Favourites option within the Layout Sheet Assistant

Document Management

Consistent/Improved Document Management

Impact 2015 features a completely rewritten document management system, with many new features. Some of the most significant developments include drag & drop addition of single (or multiple) documents, document tagging, one-to-many relationships (allowing a single document to be referenced by multiple Impact projects or customers), document thumbnails (where appropriate), document searching, document metadata support and at-a-glance document history. Additionally, Impact 2015 is able to integrate with 3rd-party document management systems.

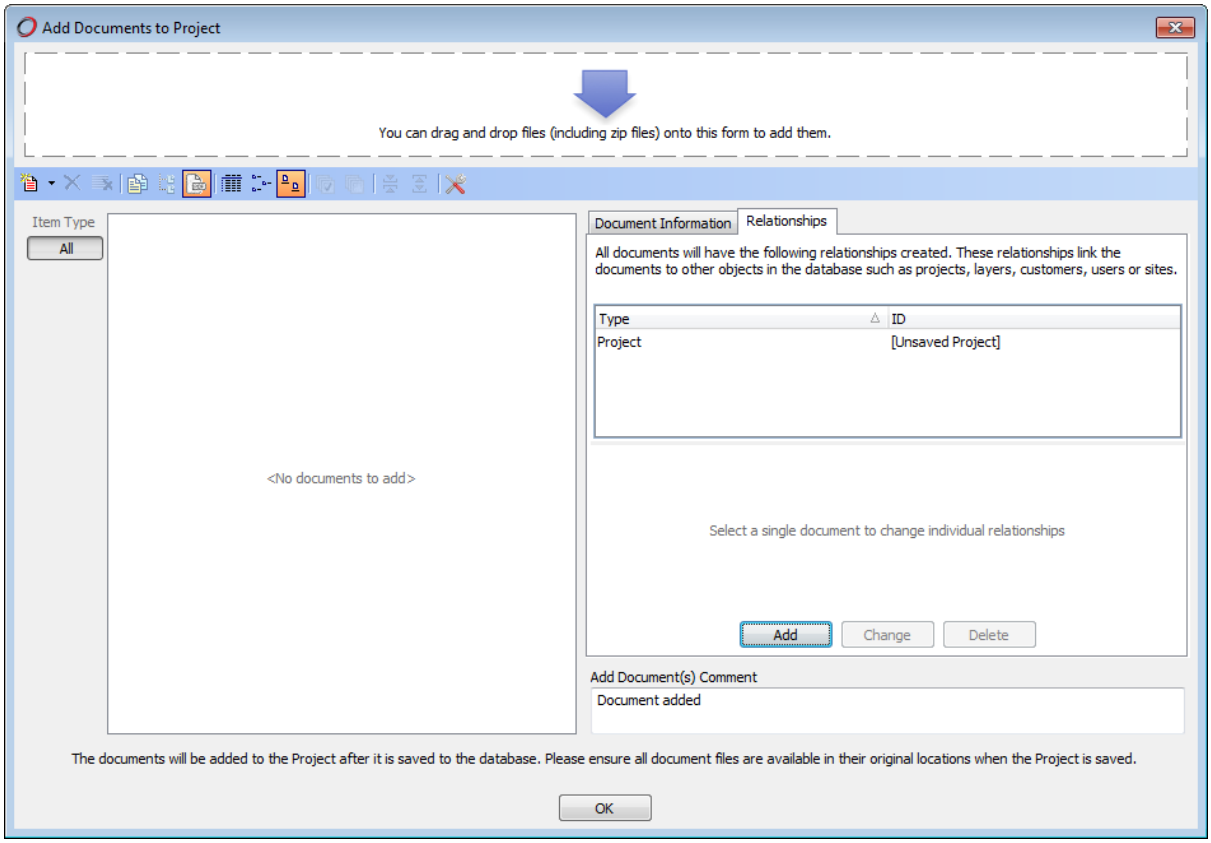


Fig – Document Management Interface

Rule Preparation

Split and merge rule prep blocks

A rule preparation block is a path for a single piece of rule for output to the rule processor.

Once a ruled block has been created the block it can then be split at a picked point to create a join if needed. Similar the option to join two rule blocks into one has been added with the merge tool.

Fig – Single rule block split at a picked point

Automatically set the end conditions

Previous versions of Impact have a mode for the automatic creation of all crease entities where the end conditions are automatically calculated. In Impact 2015 there is an option to automatically calculate the end conditions of manually created paths.

Coincident ends

Applies end condition of 0 +/- the adjust value.

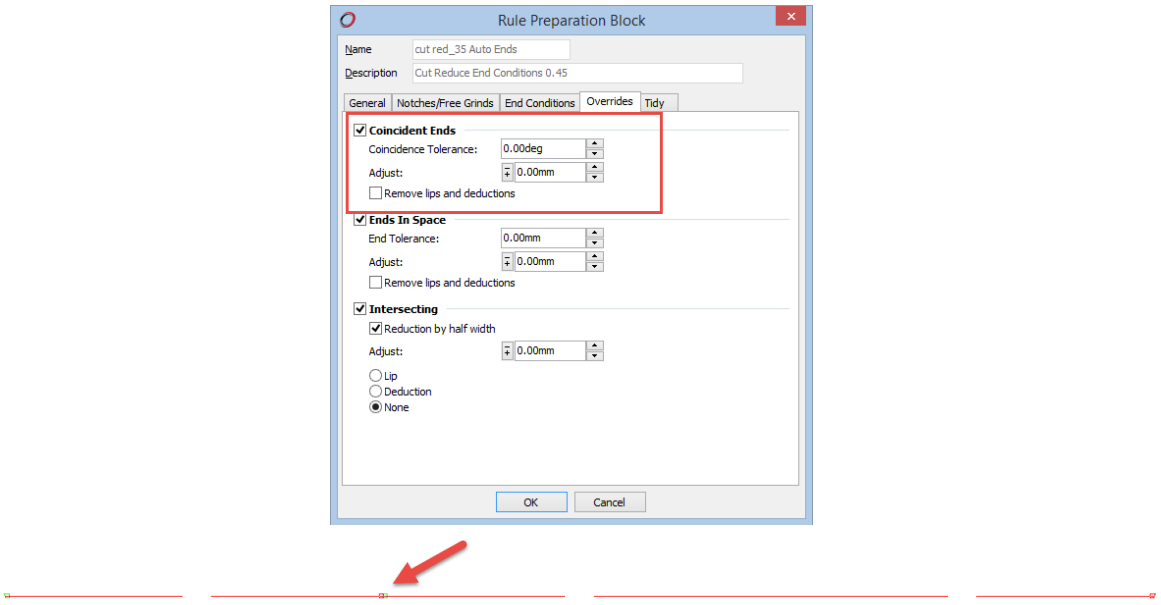


Fig – Example of a coincident join

Ends in space

Applies end condition of 0mm +/- the adjust value to any ends in space.

Intersecting

Where the end of a defined path intersects with another ruled block but the ends are not a corner or collinear the correct calculated value will be applied.

Clear visualisation

The visualisation of top notches and freegrind is much clearer showing the width and the size for top notches. It is also possible to define the colours for the different top notches – crease and perforation.

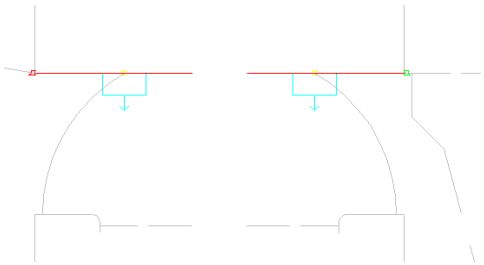


Fig – Freegrind position

Improve support of top notches in the Rule Prep tool

Top notches on a ruled path can be either for nicks, perforation or crease within a cut-crease path. It is now possible in Impact 2015 to automatically detect nick symbols and crease combinations as well as perforations to create the correct width top notches along a path.

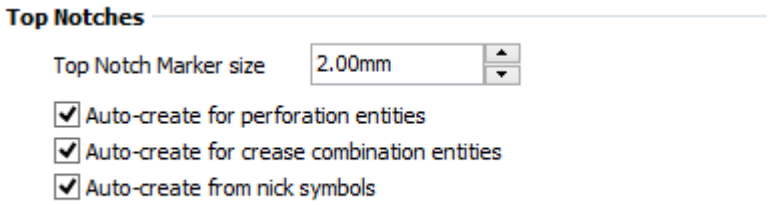


Fig – MTS for automatic creation of top notches

Shortcut Keys

Extra shortcut keys have been added to improve the workflow, these include edit block, breaks, split and merge.

Selection Tools

Select by Example Tool

A new selection tool has been developed for **Impact 2015** - **Select by Example**. This is another example of a widely-used script-based solution becoming core Impact functionality. The tool allows a selection to be made, based on the properties of a picked block or entity.

Fig – Select by Example tool

Edit-Bar options are provided to enable filtering by **Length**, **Radius** & **Sweep**. When enabled, entities within the specified Length/Radius/Sweep tolerances of the picked entity will be selected. An option for filtering by **Palette** is also available. If the palette filter is enabled, only entities matching the palette of the picked entity will be selected.

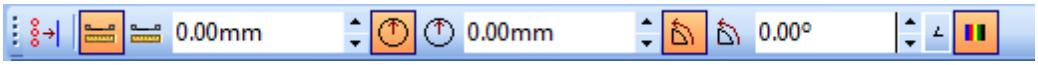


Fig – Edit Bar Options for Select by Example tool

Symbol Patterns

Create Symbol Pattern from a Layer with Inserted Symbols

The **Block>Create Symbol Pattern** tool previously allowed you to create a symbol pattern using **circles** in the drawing, and replacing them all with the same symbol. **Impact 2015** adds the ability to use the inserted **symbols** within a drawing, in order to create a pattern. Each separate symbol will then be added to the symbol pattern, relative to a single reference point. This can make creating symbol patterns for the dieboard tools significantly quicker than before. There are no changes to any dialog boxes or settings needed in order to benefit from this enhancement.

Rotary Mounting using Radial values

Symbol patterns are used for automatic placement of standard parts by several diemaking tools in Impact. For the Rotary Dieboard tool there is an option to place the symbols using radial values for the cylinder mounting systems. This new feature means the same bolt mounting system can be used for different print repeat parameters.

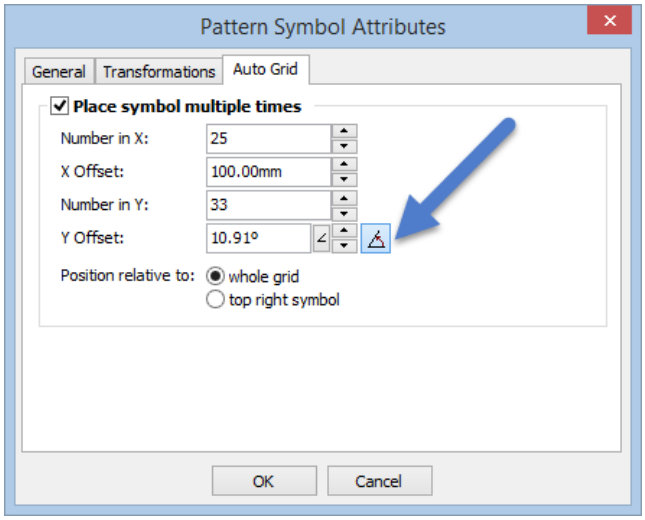


Fig – Symbol placement using radial values

Replacement Collision Symbols

Symbol patterns have the option to check if any symbols collide with existing geometry and prevent placement of these parts. This is a useful feature for example when placing the mounting holes for a flatbed dieboard. In **Impact 2015** there is now the option to place an alternative symbol if the active symbol collides with any entities.

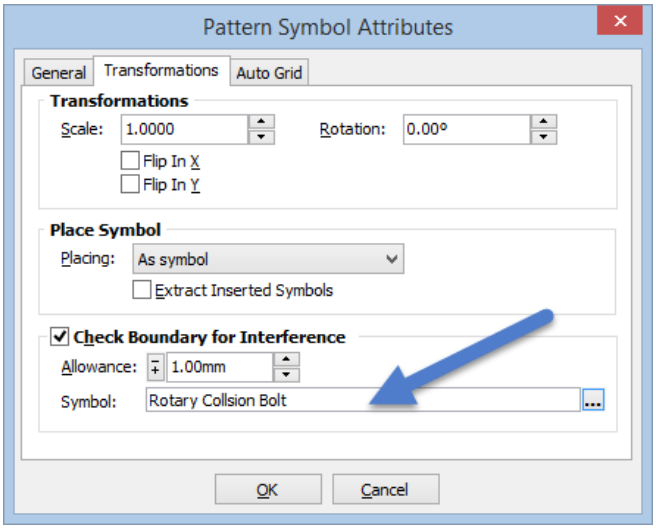


Fig – Symbol pattern alternative symbol placement

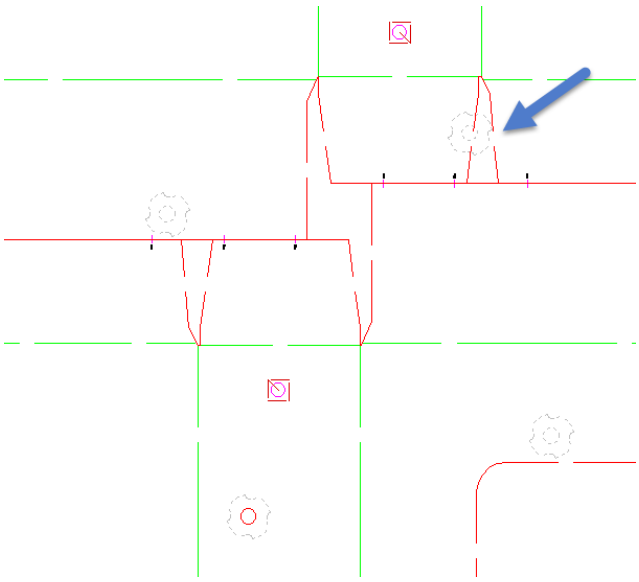


Fig – Alternative symbol placed where the original collided

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