3D QUALITY STANDARD

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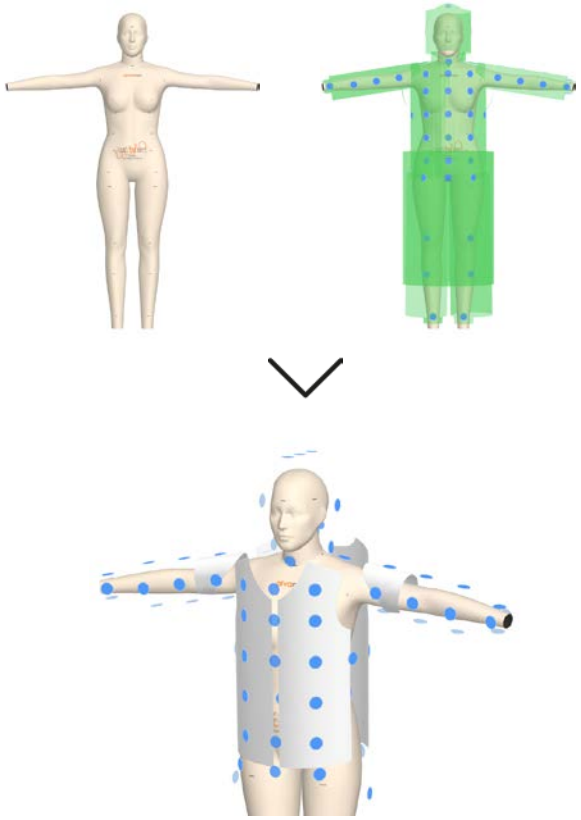
CONTENTS

AVATAR

Importance of using digital AlvaForms Saved in the CLO Avatar format

To arrange garments easily, it is necessary to use digital AlvaForms saved in the CLO Avatar format.

Digital AlvaForms saved in the CLO format have Arrangement Points and Bounding Volumes.



In CLO, it's much easier to arrange garments using Arrangement Points.

It's recommended to use digital AlvaForms saved in the CLO Avatar (.AVT) format.

How to use digital AlvaForms

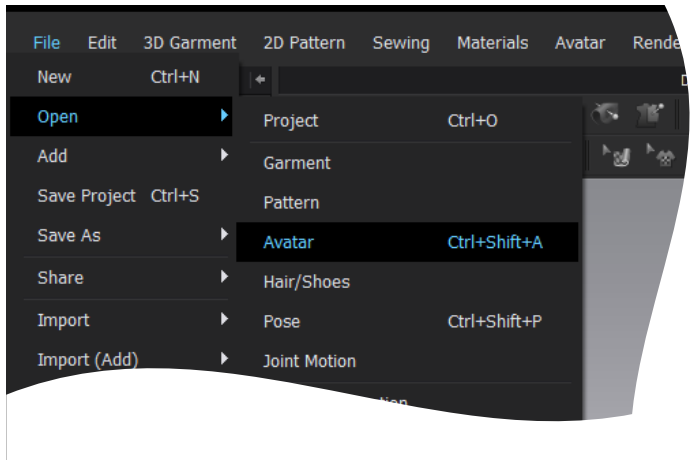
- Opening digital AlvaForms

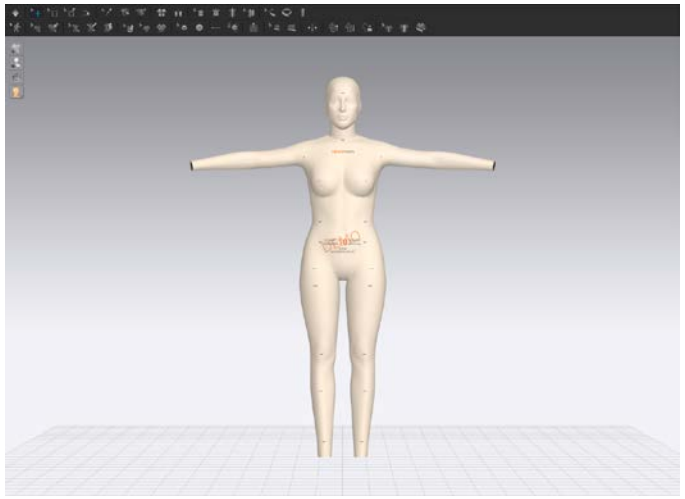
Learn how to open and use digital AlvaForms in CLO.

Two ways of opening digital AlvaForms in CLO

1. From the Main Menu

Navigate to the Main Menu and select File > Open > Avatar, locate the digital AlvaForm and select Open.





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How to use digital AlvaForms

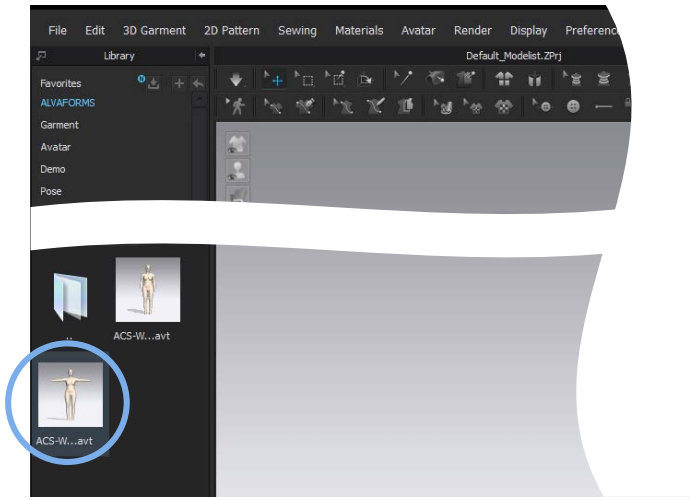
- Opening digital AlvaForms

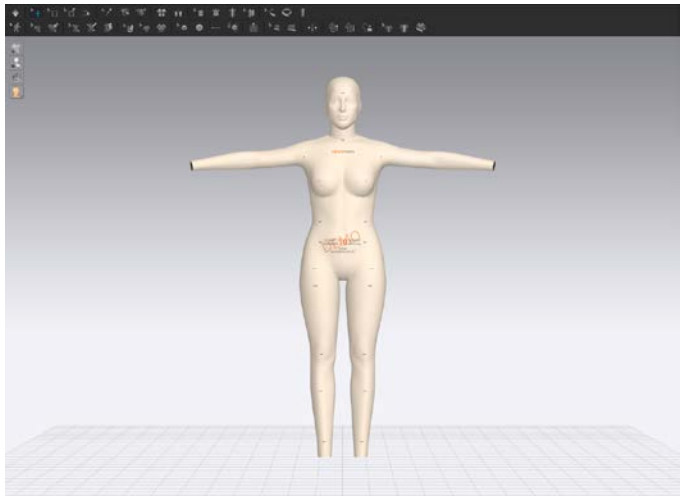
Learn how to open and use digital AlvaForms in CLO.

Two ways of opening digital AlvaForms in CLO

2. From the Library

Navigate to the Library, locate the digital AlvaForm and double click or drag and drop the file.



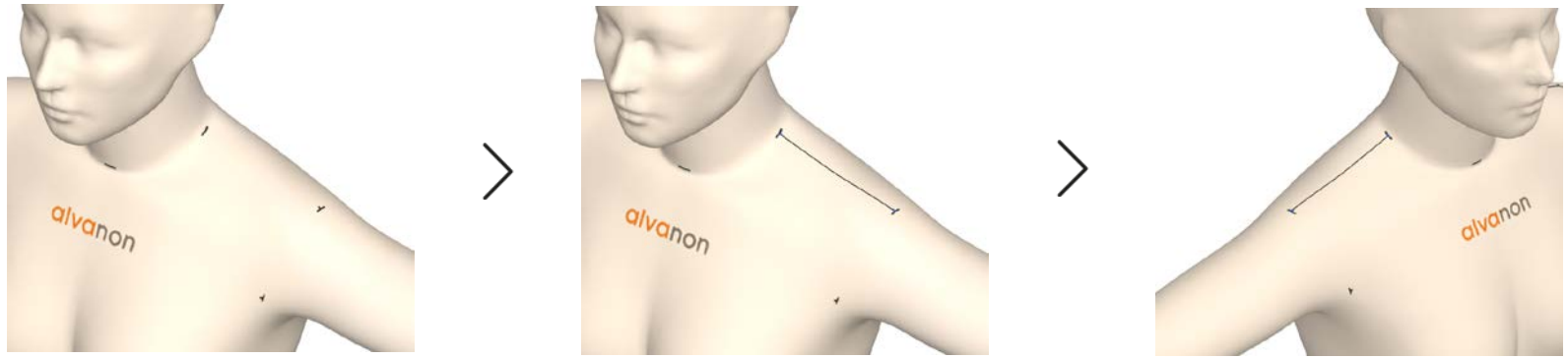


How to use digital AlvaForms

- Mark the Shoulder Line on the AlvaForm

Use the Avatar Tape tool to mark the Shoulder Line on the AlvaForm.

Use the Avatar Tape tool to mark the Shoulder Line on the AlvaForm.



1. To display the shoulder position of the AlvaForm, adjust the view in the 3D Window.
2. Select the Linear Avatar Tape tool from the 3D Toolbar, click once on the High Point Shoulder > double click on the Shoulder Point.
3. Follow the same steps for the other shoulder.

** Use the Avatar Tape on the Shoulder Line to align the garment to enhance the quality.

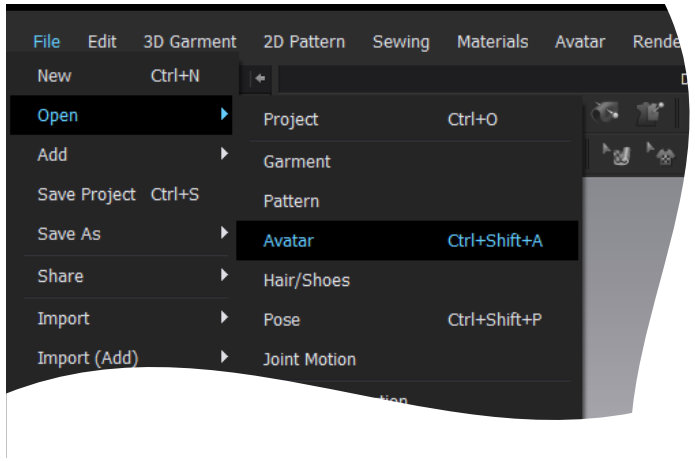
How to use body scans

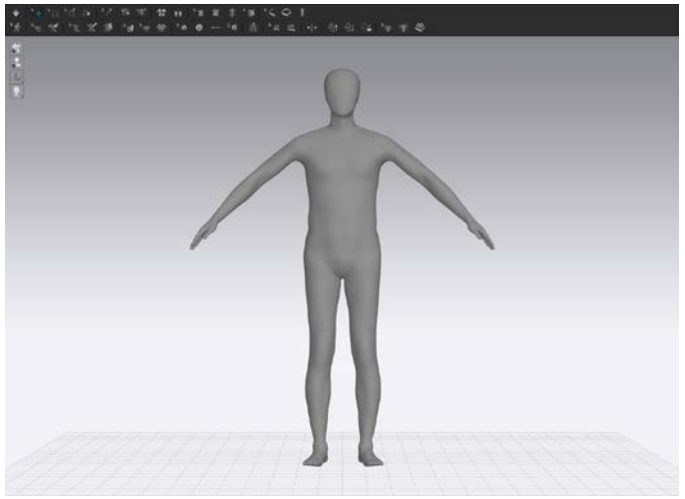
Learn how to open body scan files in CLO.

Two ways of opening digital AlvaForms in CLO

1. From the Main Menu

Navigate to the Main Menu and select File > Open >Avatar, locate the body scan file and select Open.





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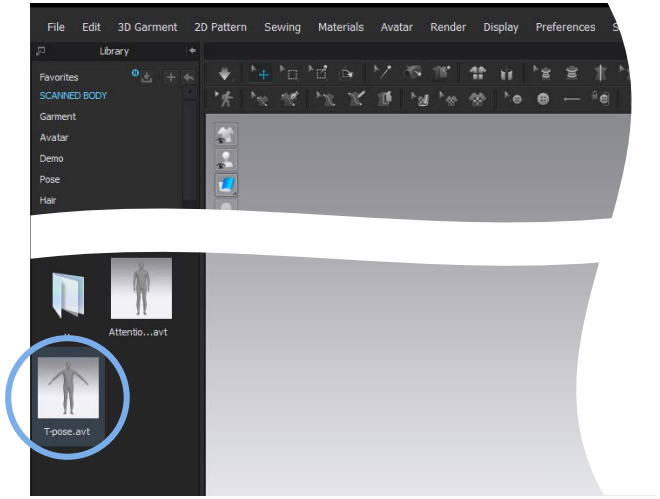
How to use body scans

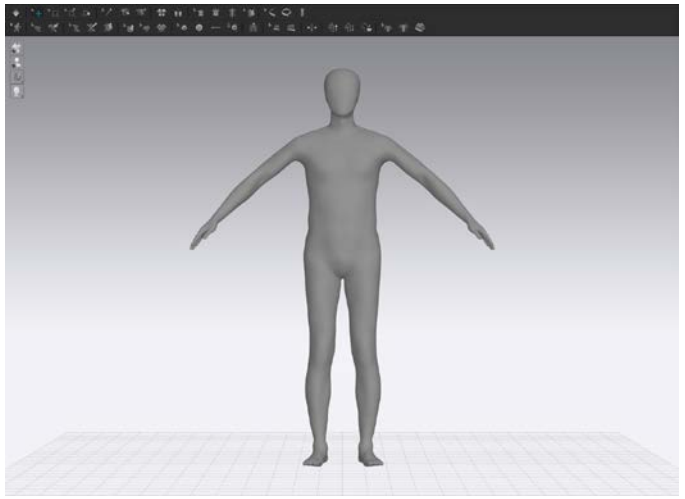
Learn how to open body scan files in CLO.

Two ways of opening digital AlvaForms in CLO

2. From the Library

Navigate to the Library, locate the body scan file and double click or drag and drop the file.

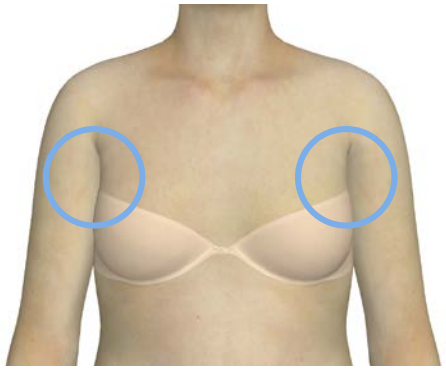


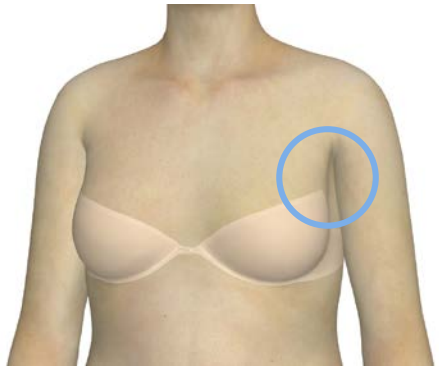


Provide sufficient gaps between the body parts

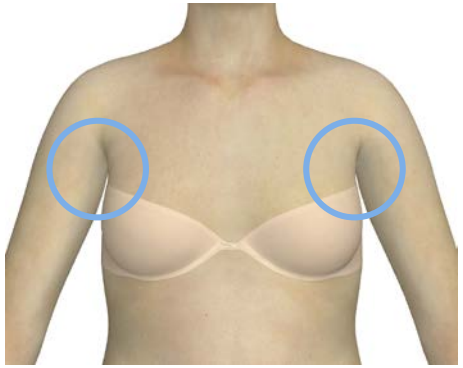
Ensure that there are sufficient gaps between the body parts of the resized Default Avatar, to prevent the garment from being stuck between the body parts.

Pose files in CLO are customized for the Default Avatar, and changing to Attention pose for the resized Default Avatar will cause the armpit to overlap with the body.





For resized Default Avatars, ensure to reopen the T-pose file and turn off the Play Motion button when there is a sufficient gap between body parts.



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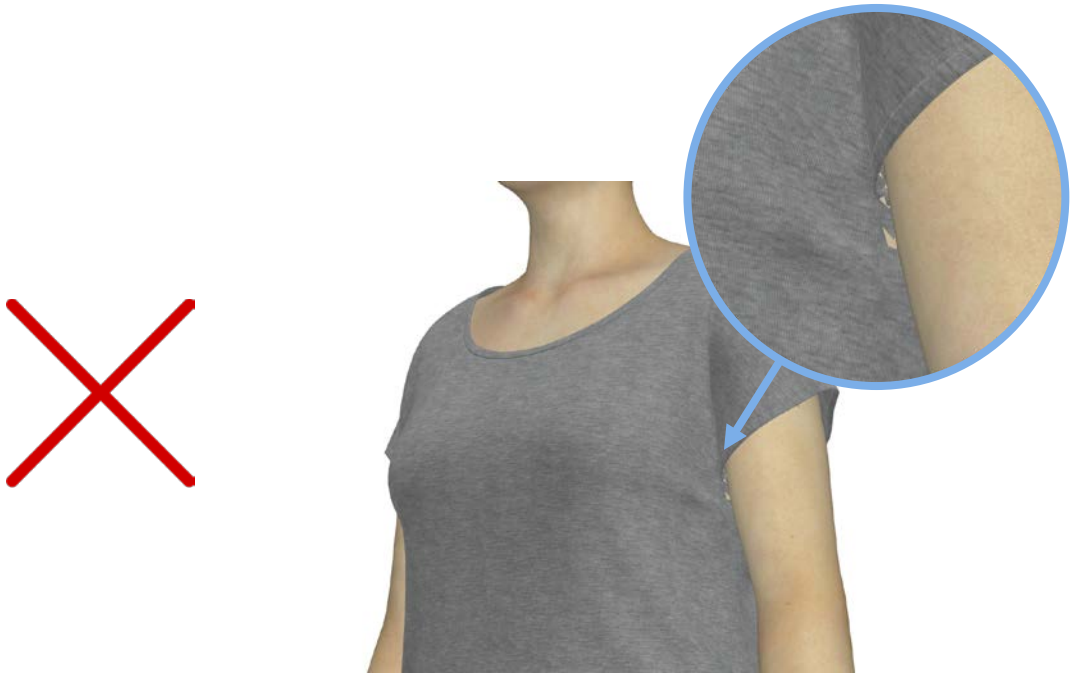
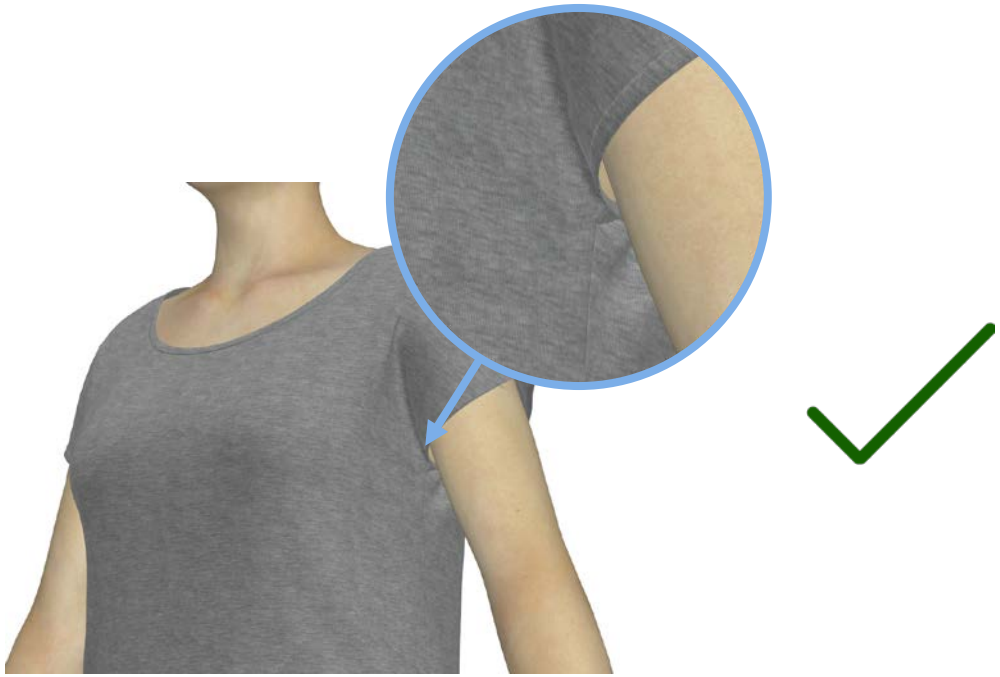
Provide sufficient gaps between the body parts

Ensure that there are sufficient gaps between the body parts of the resized Default Avatar, to prevent the garment from being stuck between the body parts.



When there is a sufficient gap between body parts



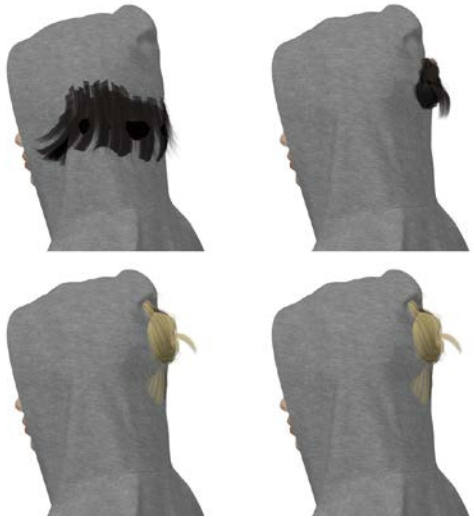
When there is no sufficient gap between body parts

Choose appropriate Avatar Accessories according to the garment

- Changing Avatar Hair

To prevent Hair from popping out of the hood, use any Hairstyle except Ponytail and Bob when putting a hood on the Avatar.

Suitable Hair for hood



Hood on the Ponytail and Bob Hair

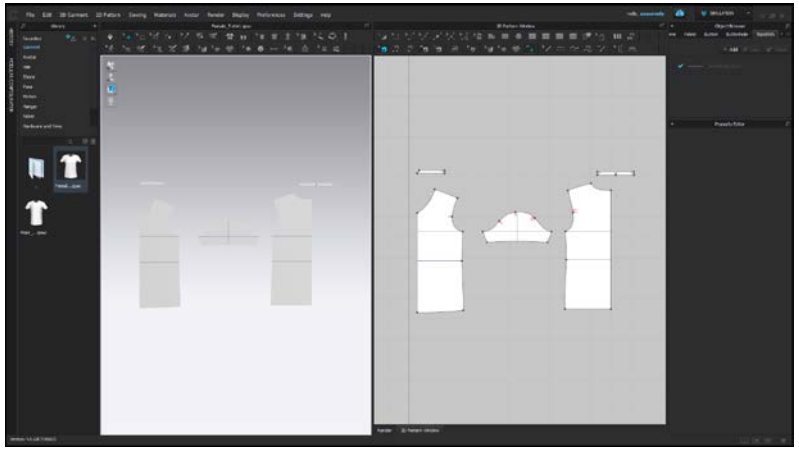
Hood on other Hairstyles

BASIC GARMENT ARRANGEMENT IN CLO

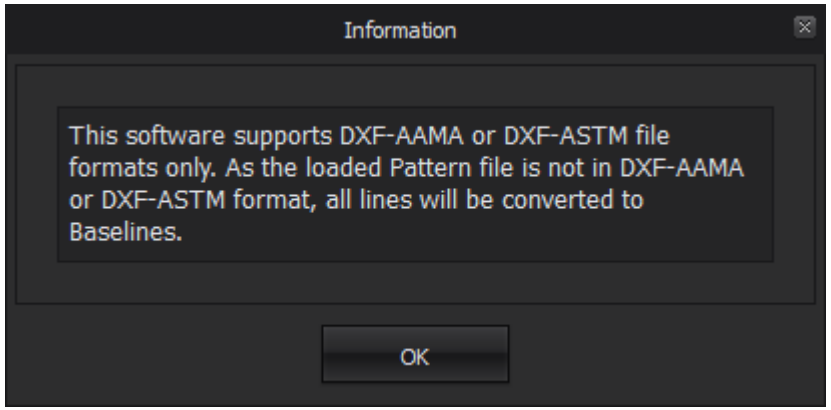
Importing Patterns Imported from 2D CAD Systems

DXF-ASTM format is highly recommended.
If patterns cannot be exported in DXF-ASTM format, export in DXF-AAMA format.

ASTM AAMA

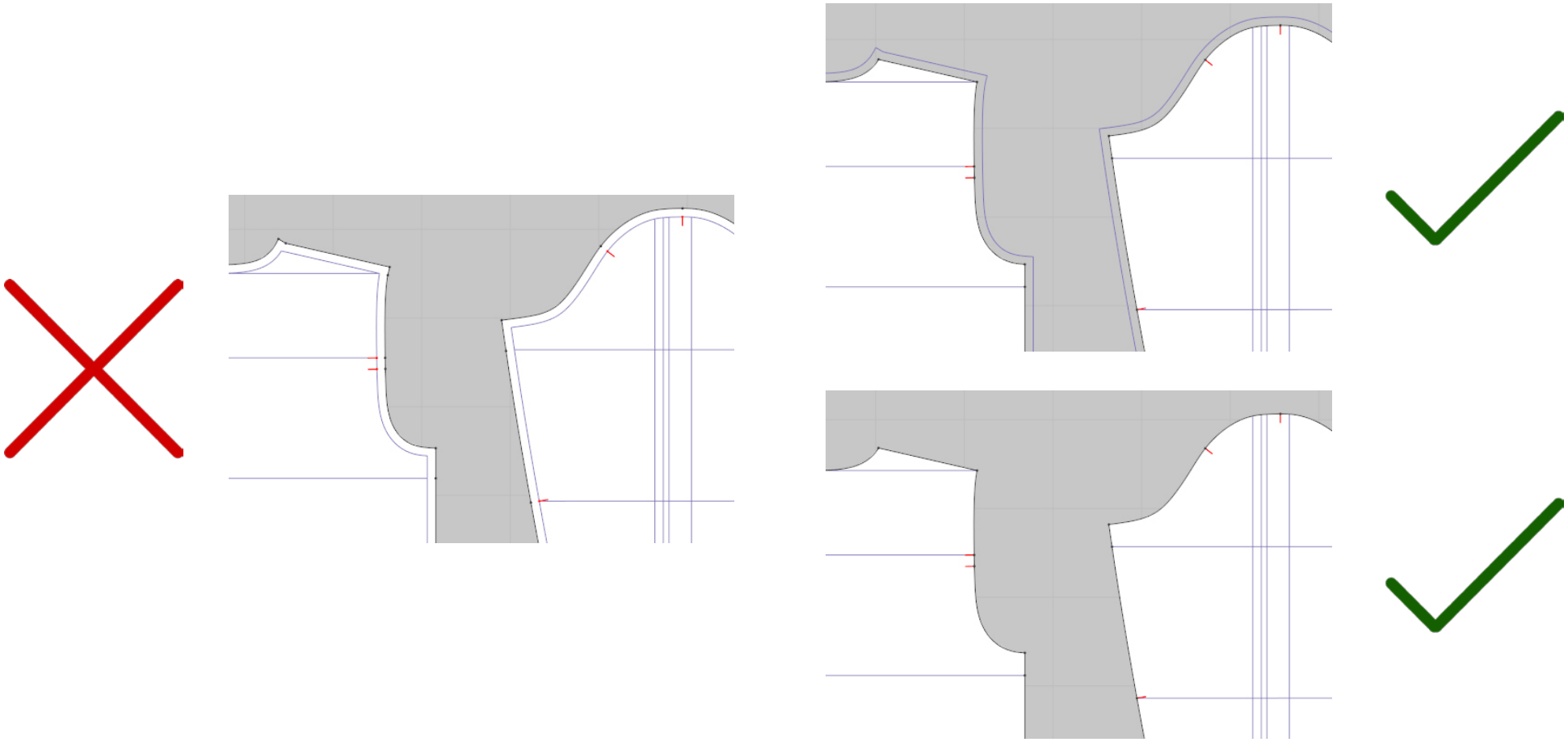


If a DXF file is not in ASTM or AAMA format, a pop-up window should appear.



Importing Patterns from 2D CAD Systems

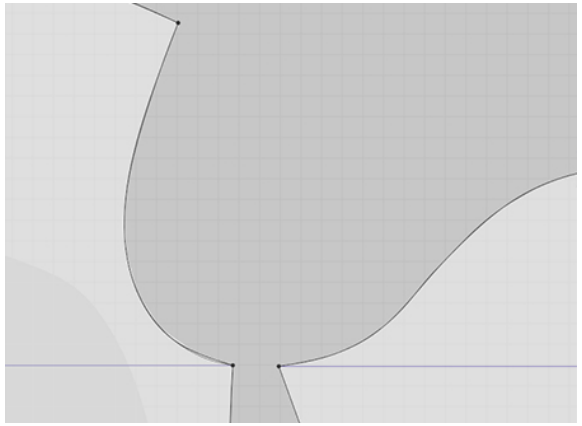
To apply Seamlines around the Pattern, ensure that the Pattern pieces do not have Seam Allowance and are Imported as Baselines.



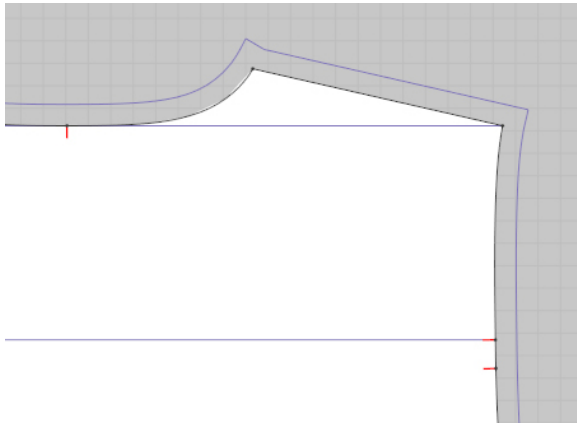
Importing Patterns from 2D CAD Systems

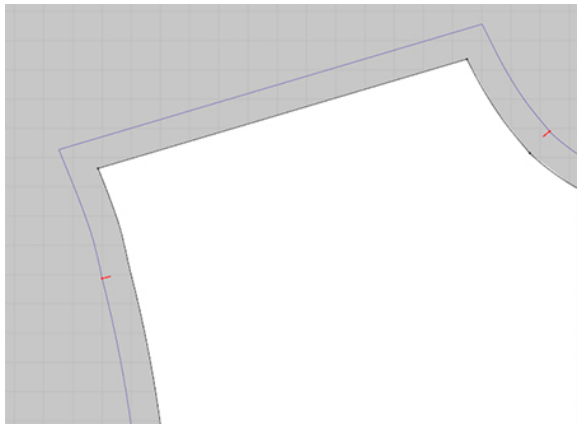
Ensure that the Notches sit in the correct position within the Pattern pieces.

Patterns without Notches are not recommended.

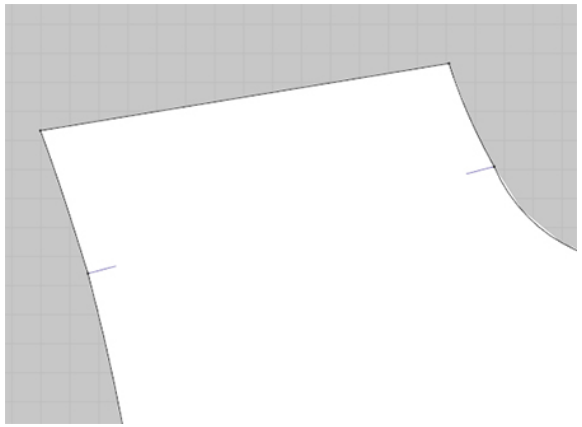


Patterns with Notches marked in red is highly recommended.





Patterns without Notches are not recommended.

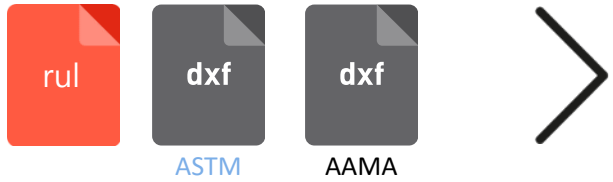


Notches marked as purple Baselines are also acceptable.

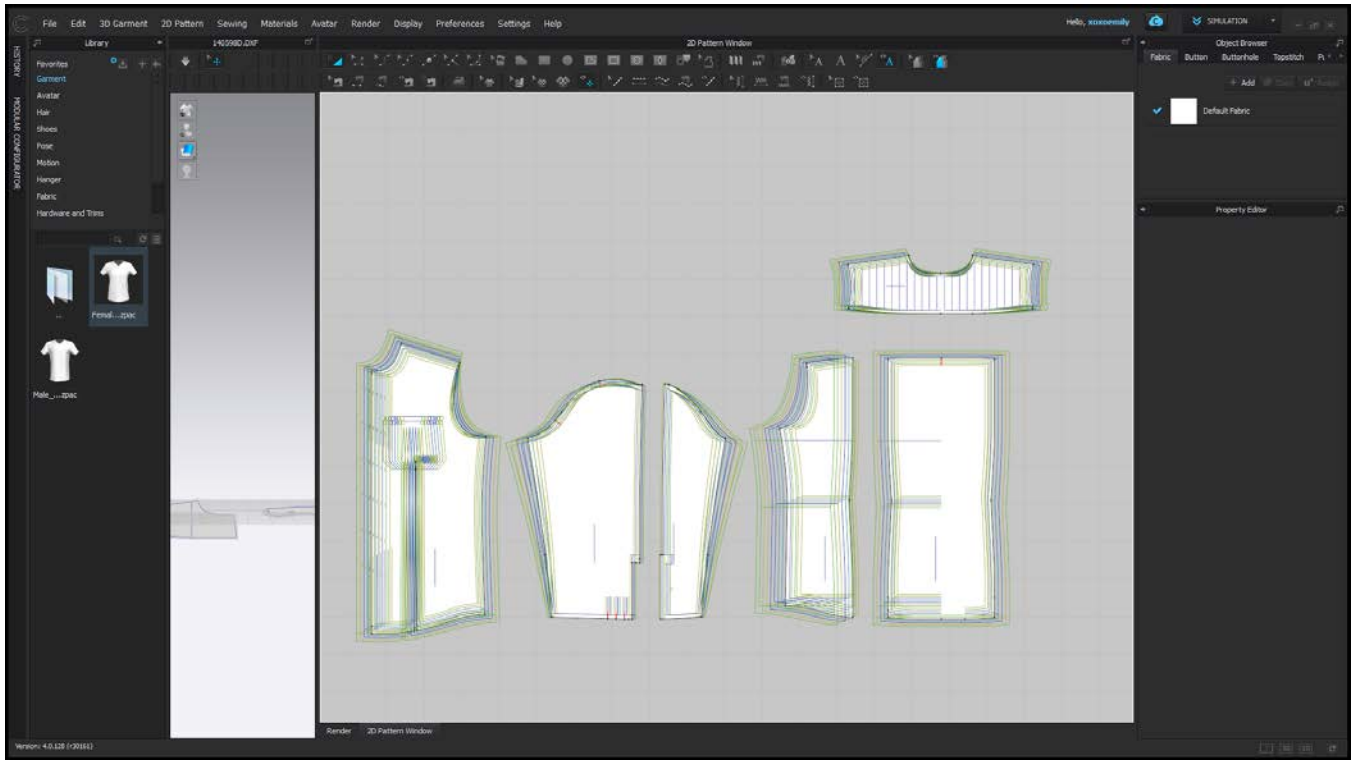
Importing Patterns from 2D CAD Systems

- If any error occurs while importing the pattern

In order to import the Grading information, ensure that you have a .RUL file with the same name as the .DXF file in the same folder.



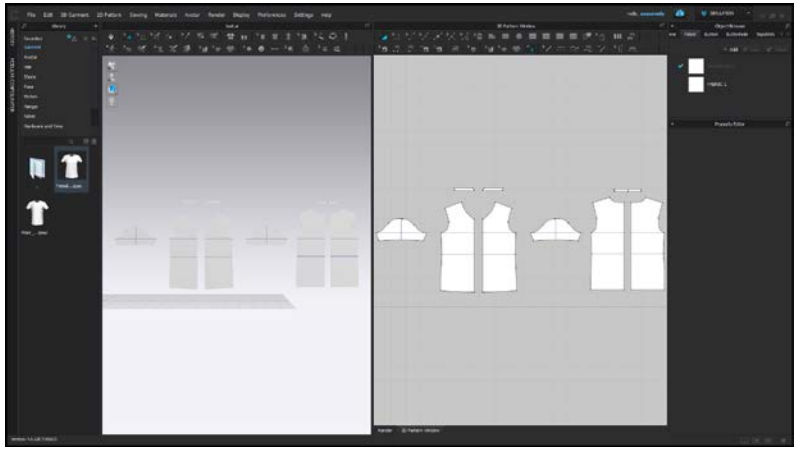
ASTM AAMA



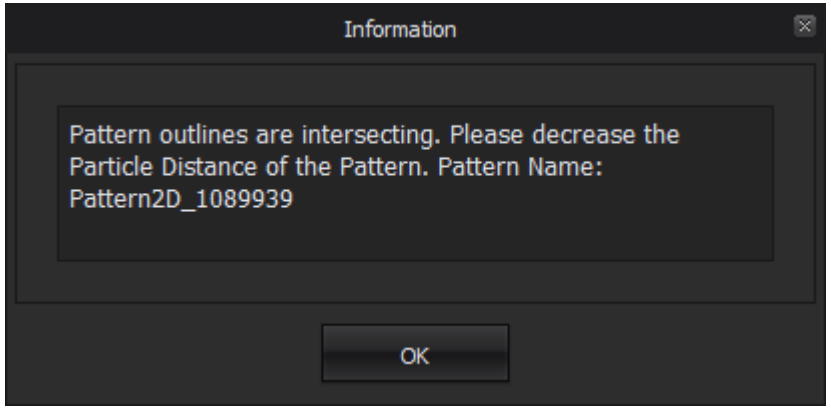
Importing Patterns from AI (Adobe Illustrator)

- If any error occurs while importing the pattern

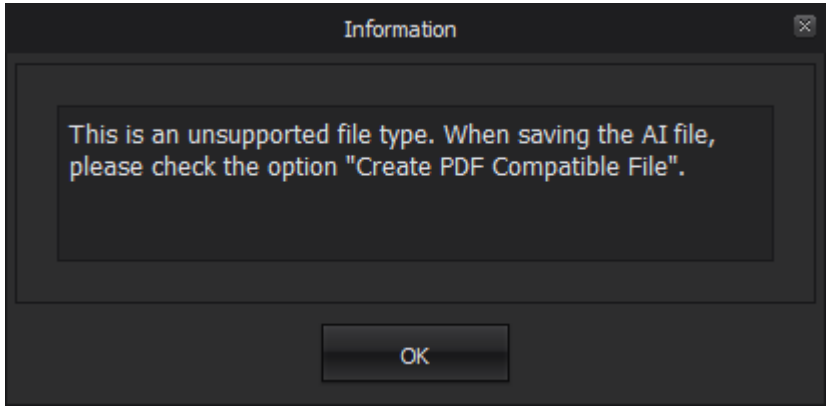
Only Pattern pieces without twisted lines can be imported.
Only fully closed Pattern pieces can be used in CLO.
If all of the Pattern pieces from Illustrator are not completely closed, they can not be imported.



If the lines in the Pattern are twisted or overlapped, a pop-up window will appear.



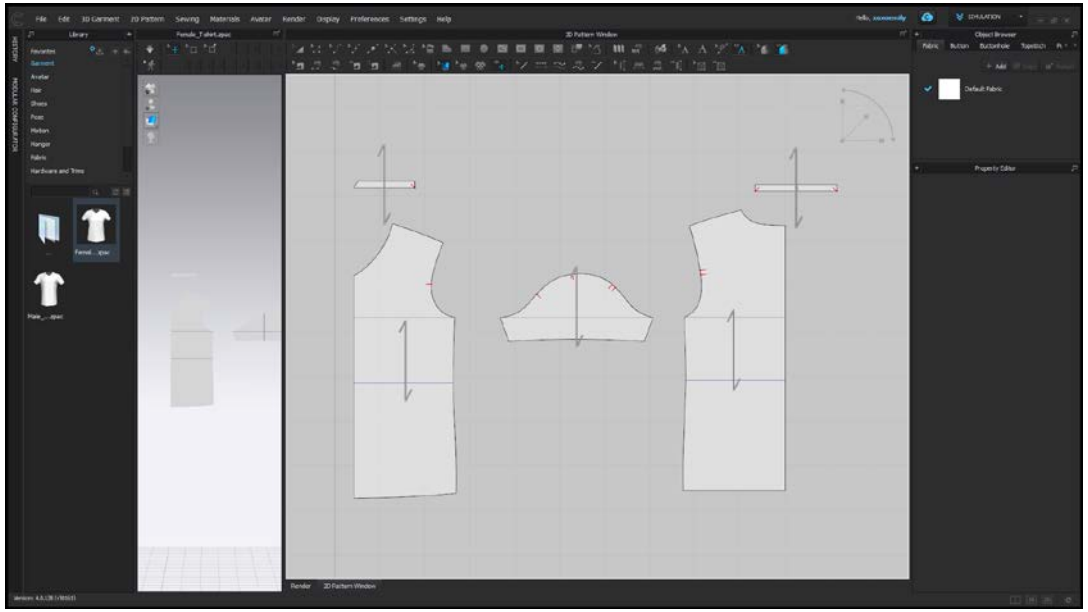
If the Pattern is not completely closed, a pop-up window will appear.



Check the Grainline

Ensure that the Grainline sits correctly within the Pattern piece.
The Grainline affects the shape of the garment, depending on the properties of the fabric.

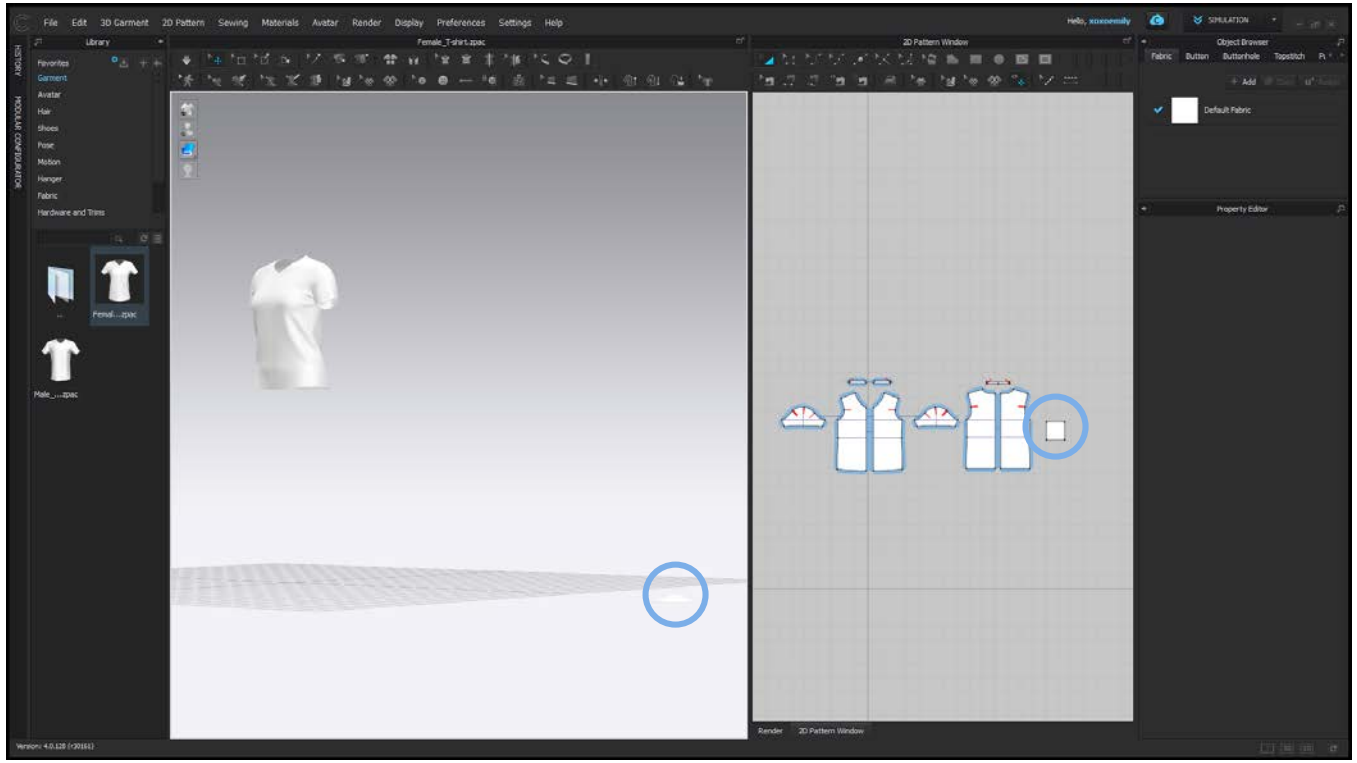
Grainlines of Pattern pieces can be adjusted by clicking the Edit Texture tool on the 2D Toolbar.
If the Grainline appears reversed, manually change the direction by rotating the arrow.



Delete Any Pattern Pieces not required for the Style

Leaving unnecessary Pattern pieces in the 2D Window may cause confusion.

Garment won't be rotated around the Avatar in 3D window.



when an unused pattern is located somewhere in the 3D window, that pattern would be recognized as a part of garment and the center axis of the 3D window will be moved.

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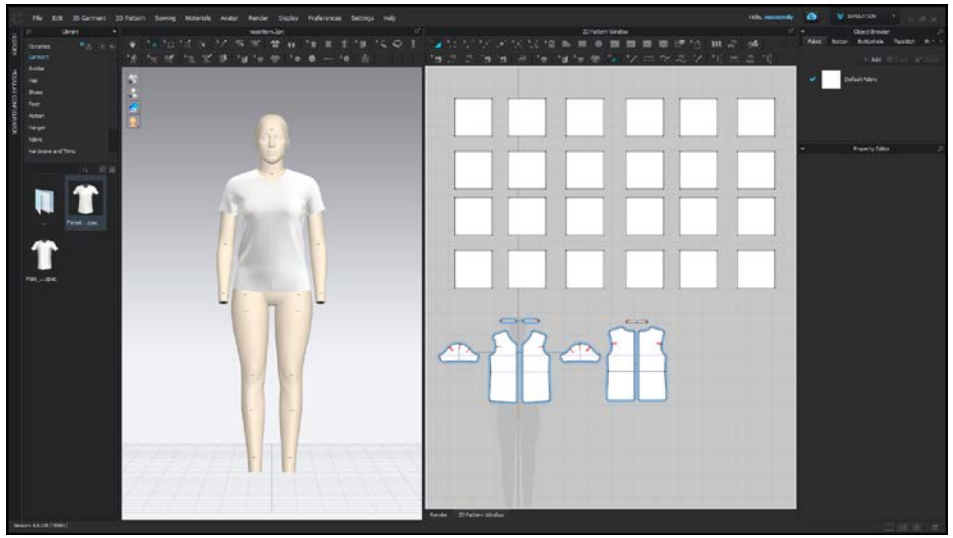
Delete any Pattern Pieces not required for the Style

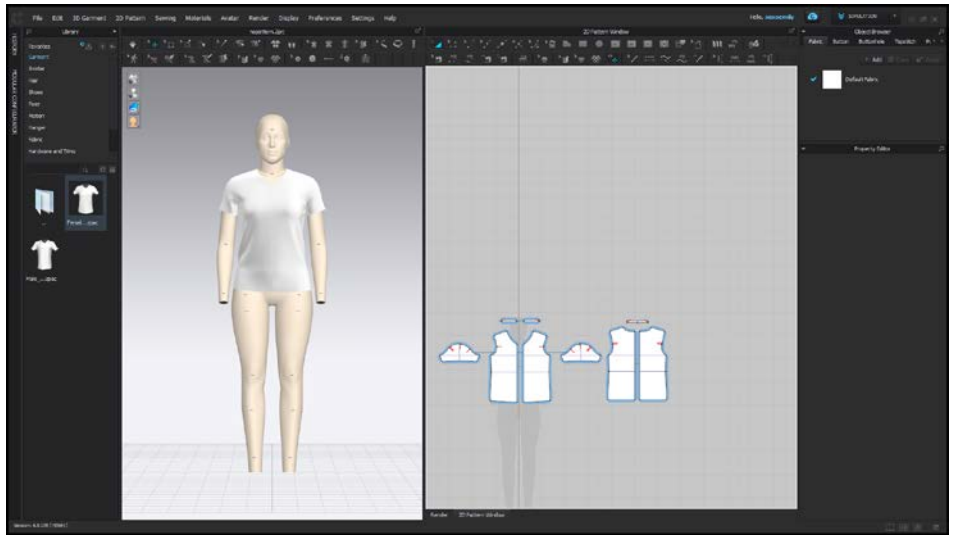
Leaving unnecessary Pattern pieces in the 2D Window may cause confusion.

Increase the 3D garment file size.

9.95 Mb



4.80 Mb

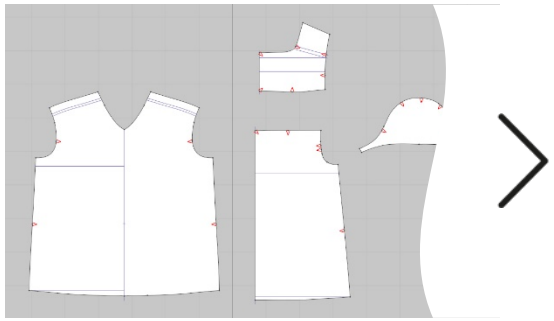


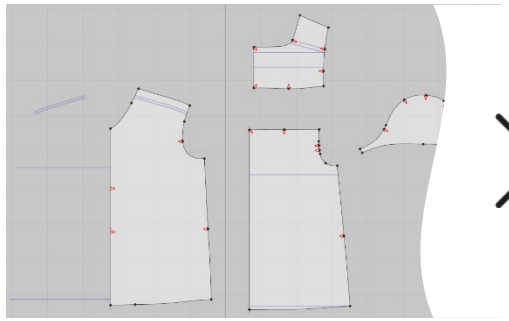
Unnecessary patterns will be saved together in 3D garment file, which may take more storage space.

Start with Half of the Pattern for a Symmetric Garment

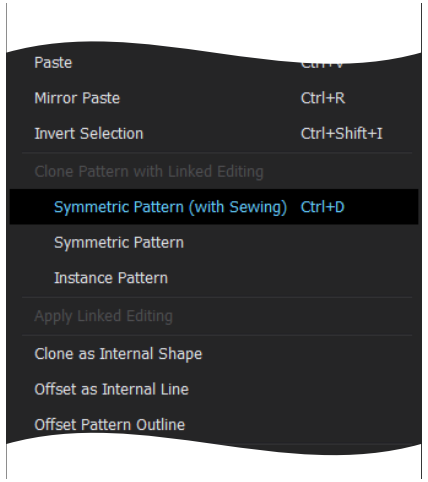
Duplicate the half Pattern using the Symmetry Pattern (with Sewing) tool.
It's much easier to work with the Symmetry function for setting sewing lines and expressing garment details.

If Symmetric Patterns are imported as one piece.

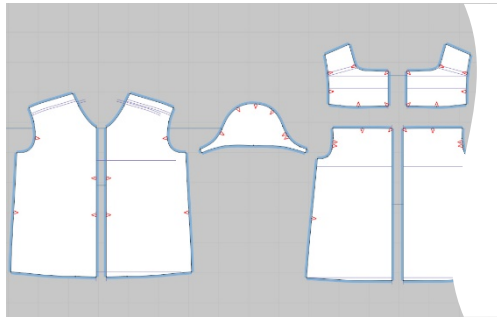




Cut the Pattern into half



Select Clone Pattern with Linked Editing – Symmetric Pattern (With Sewing)



It will not only increase efficiency but also prevent the left and right side of the garment from having different settings.

- You can set the Seamline to be Symmetrical.
- You can draw Symmetrical Internal Lines and set Elastics

Sew the Pattern according to the Notches on Pattern Outlines

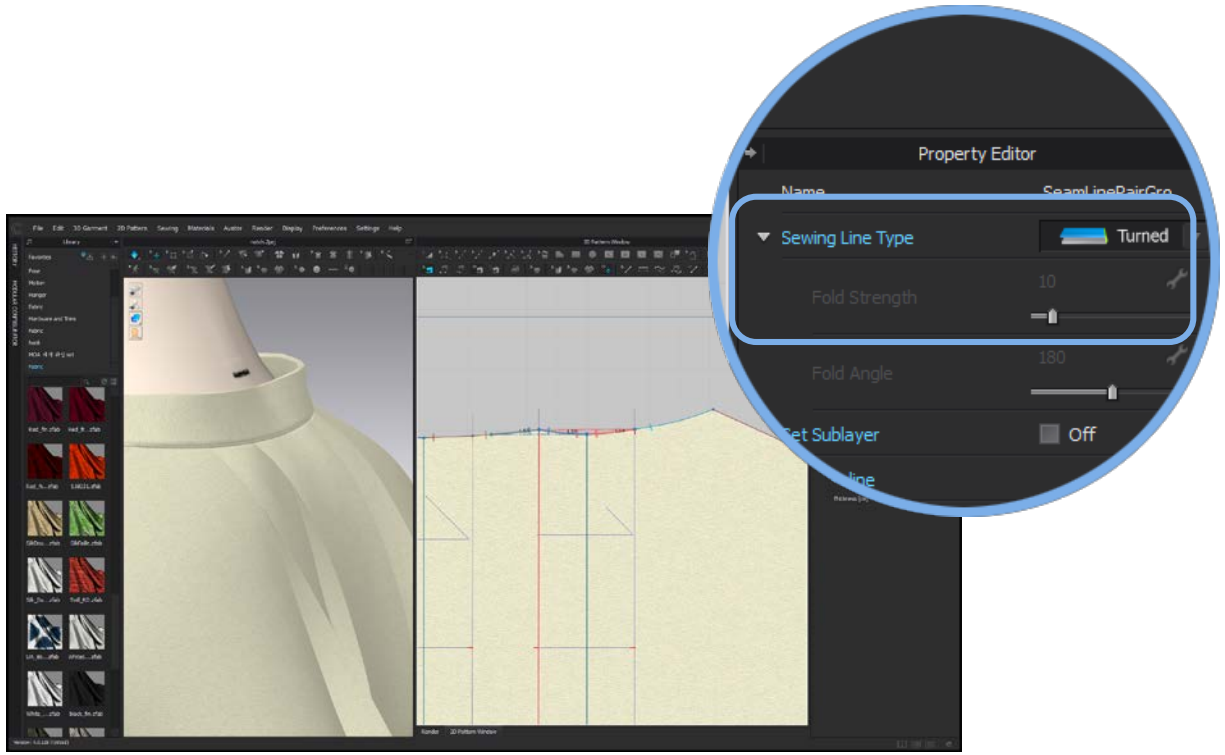
Failure to match the Notches of Pattern pieces will cause improper wrinkles and/or an entangled garment.

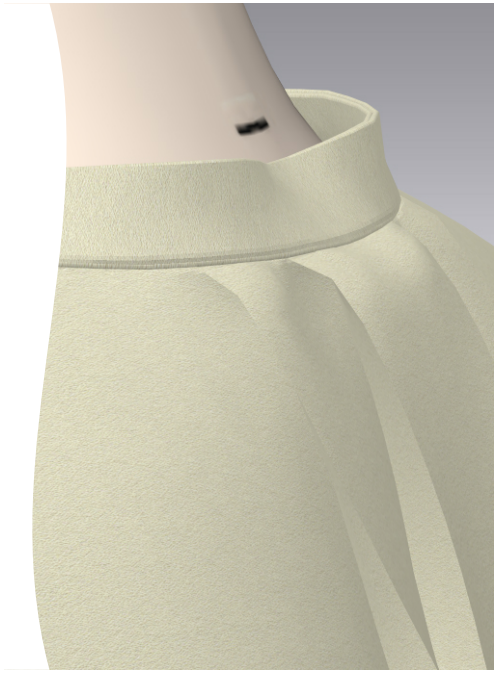
When the Patterns are sewn according to the Notches.

When the Patterns are not sewn according to the Notches.

Change the Sewing Line Type to Turned

Ensure that Sewing Line Types are changed to Turned, so that the sewn part of multiple layered Patterns will not be simulated in an abnormal shape.



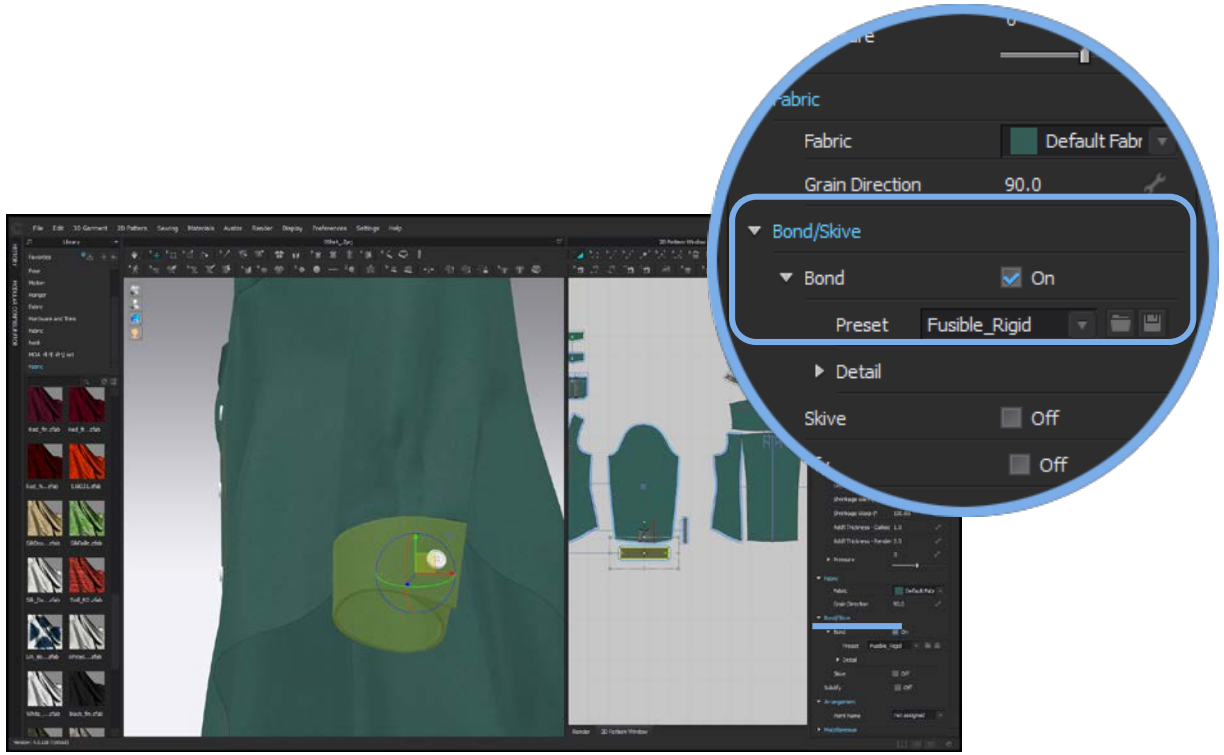


When the Sewing Line Type of the overlapped sewing pattern is Custom Angle(180).

When the Sewing Line Type of the overlapped sewing pattern is Turned.

Apply Bonding effect (BOND)

Ensure that Bonding has been applied to the 3D garment, if the physical garment has Bonding.



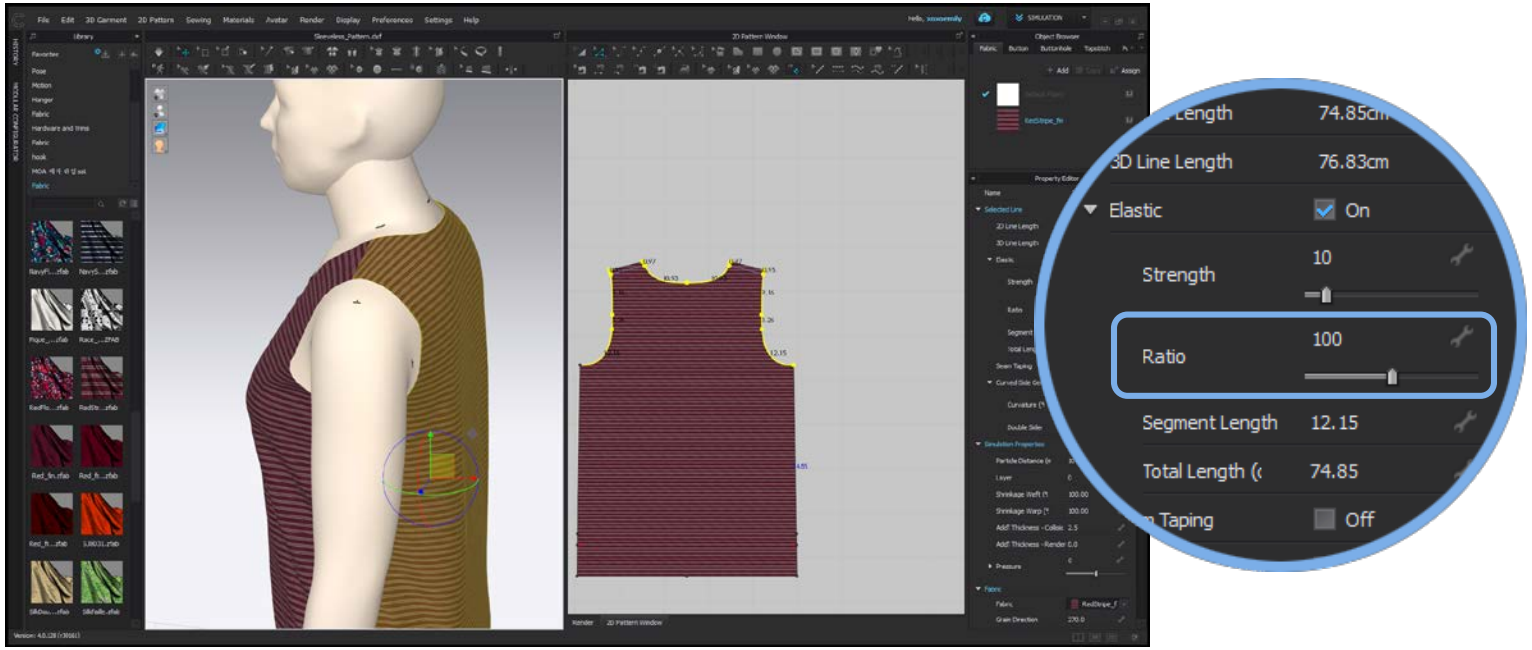
When Bond is not applied

When Bond is applied

Adjust the Neck Line and Armhole lengths to match the corresponding pattern length

Ensure that 100% Elastic has been applied to the Neck Line and Armhole to prevent the Pattern from stretching due to the weight of the garment.

If you set the ratio of the elastic band to 100%, the chosen line will now keep the original value of the Pattern length.



When to set a property to 100% elastic.

- Patterns without any rib band or collar on the Neck Line.
- Sleeveless garments

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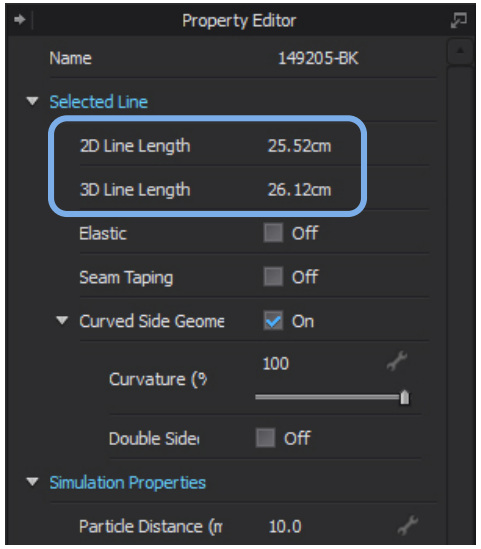
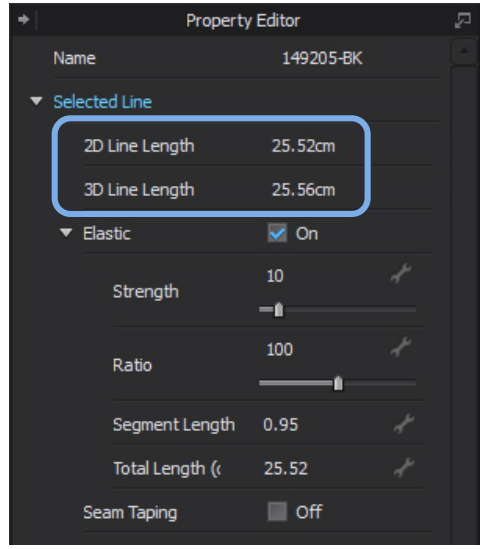
Adjust the Neck Line and Armhole Lengths to match the corresponding pattern length

Ensure that 100% Elastic has been applied to the Neck Line and Armhole to prevent the Pattern from stretching due to the weight of the garment.



If you do not set the ratio of the elastic band to 100%



If you set the ratio of the elastic band to 100%

Adjust the shape of the garment after Simulation

Pinching garments after Simulation is sometimes necessary to meet the desired shape.

Pinch the garment while the Simulation is on.

It is mainly for arranging Neck Line or to align Shoulder Line forward and backward.

Before Pinching

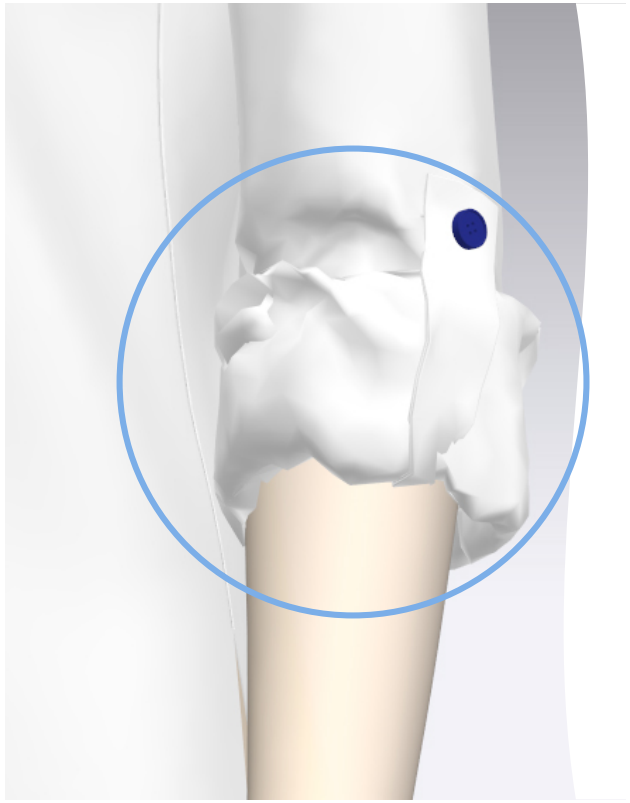
After Pinching

EXPRESSING GARMENT DETAILS

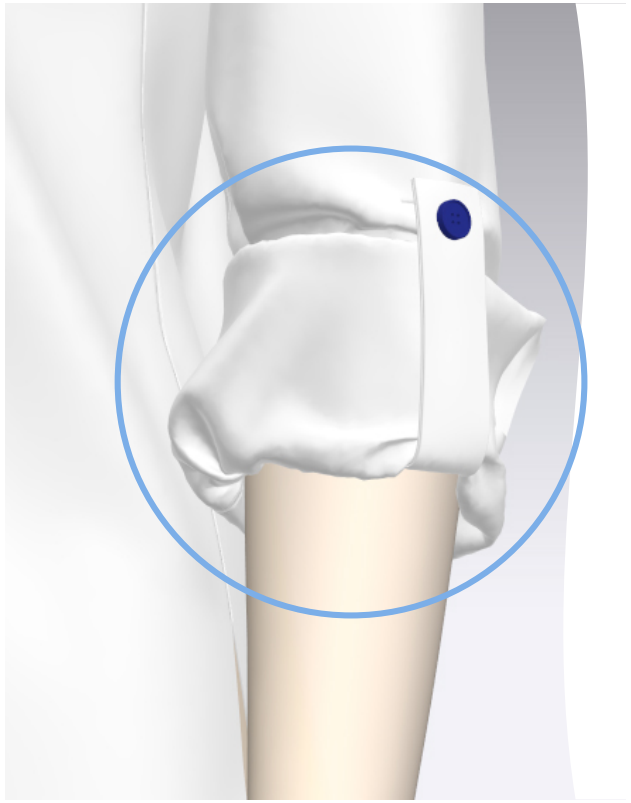
Good shape for Rolled-up Garment

The inside and outside fabrics should not be bundled up together.

A bad example



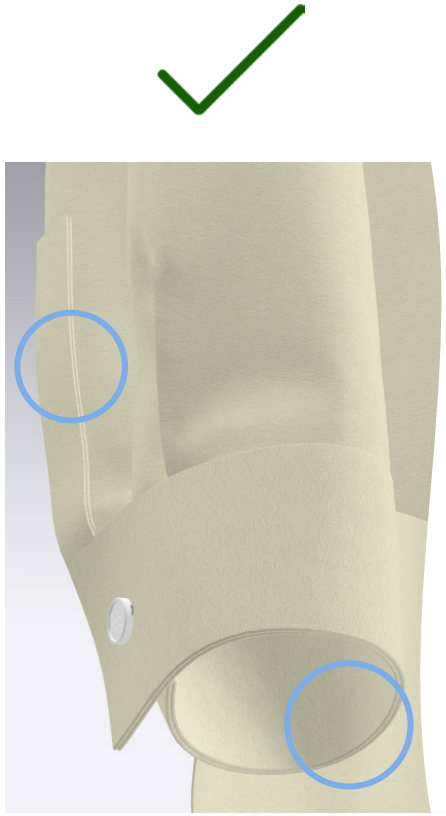
A good example



Sleeves

- Expressing Double Layers

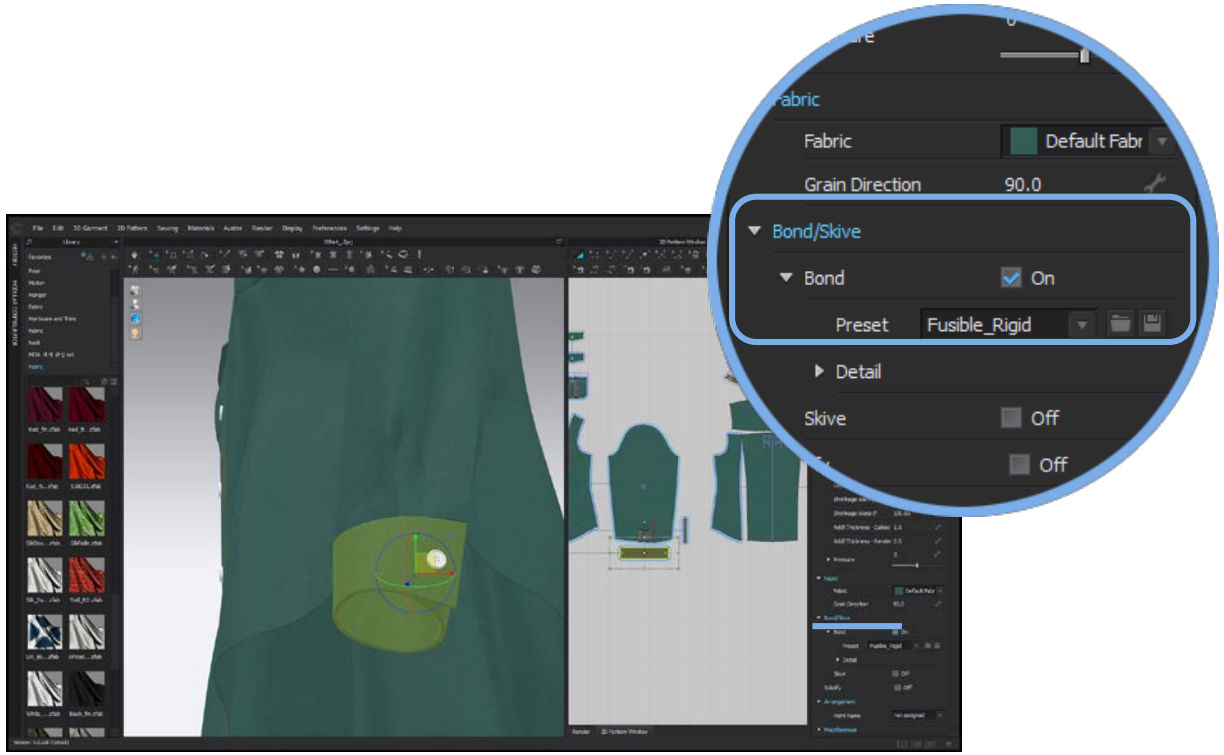
Ensure that cuffs and placket are Double Sided, to make them more true-to-life.



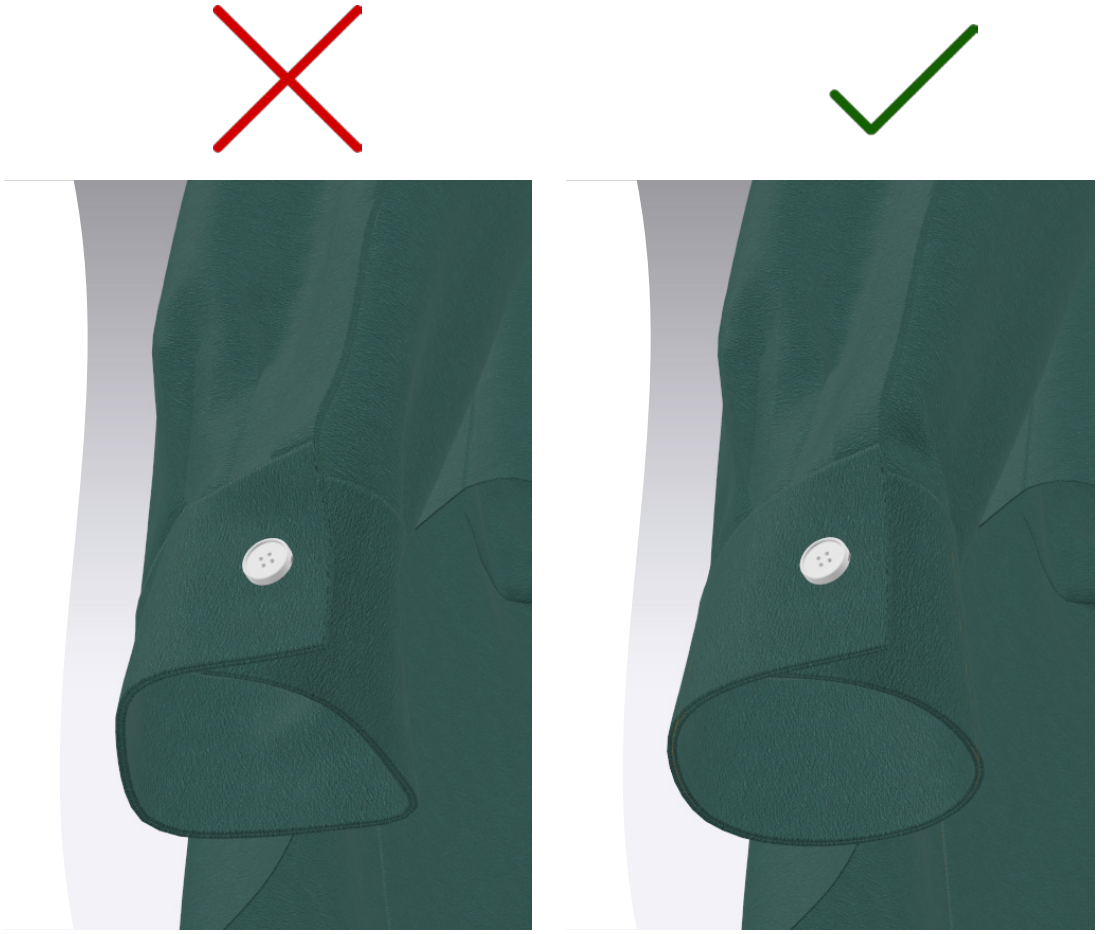
Sleeves

- Expressing Rigid Fabrics

Ensure that cuffs and placket are solid, as they are double layered.



Select the cuff and placket patterns, and then check the Bond menu in the Property Ed itor.



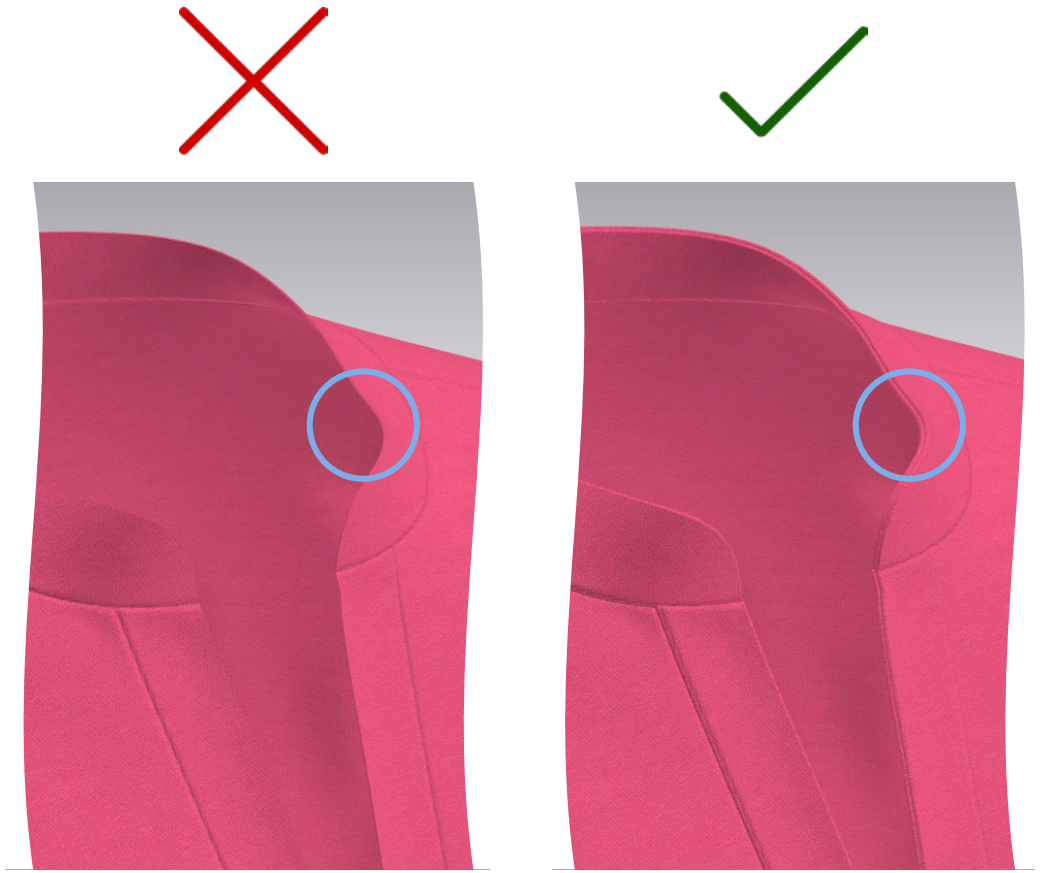
When Bond is not applied

When Bond is applied

Collar Stand

- Expressing Double Layers

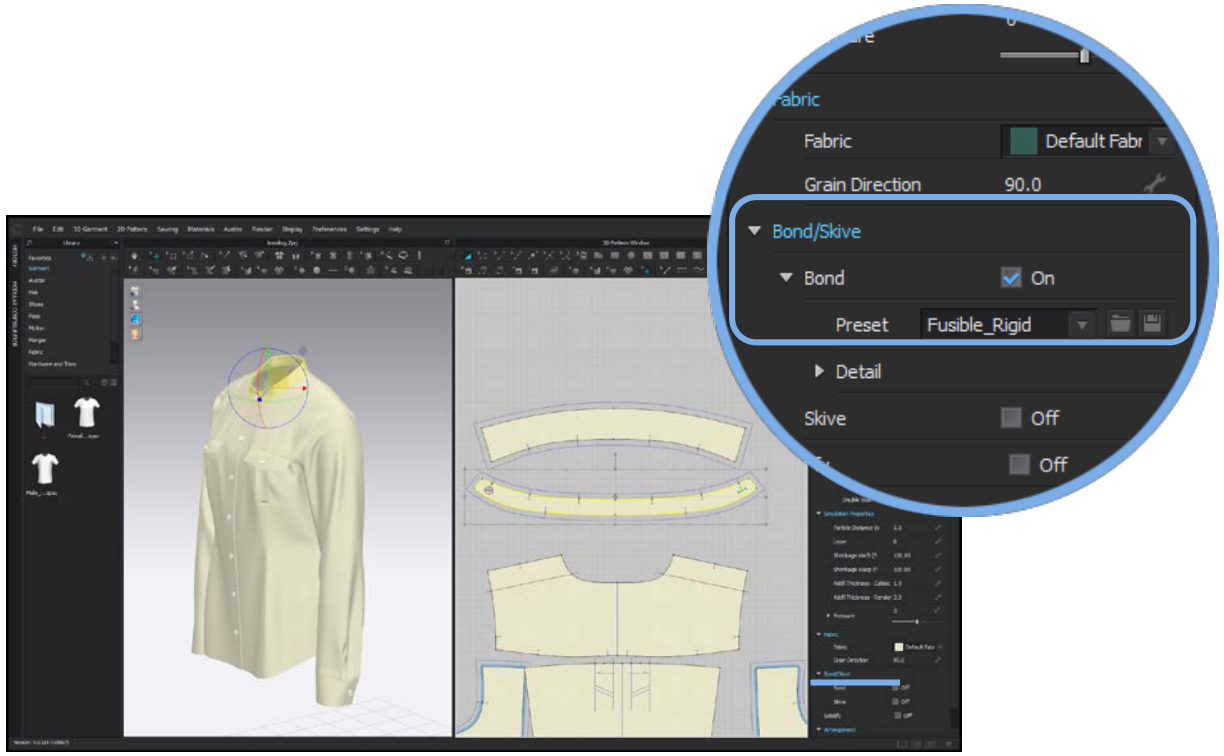
Ensure that Collar Stands are Double Sided, to make it look more true-to-life.



Collar Stand

- Expressing Rigid Fabrics

Ensure that Collar Stands are Double Sided, to make it look more true-to-life.



Select the collar stand pattern, and then check Bond menu in the Property Editor.

When Bond is not applied

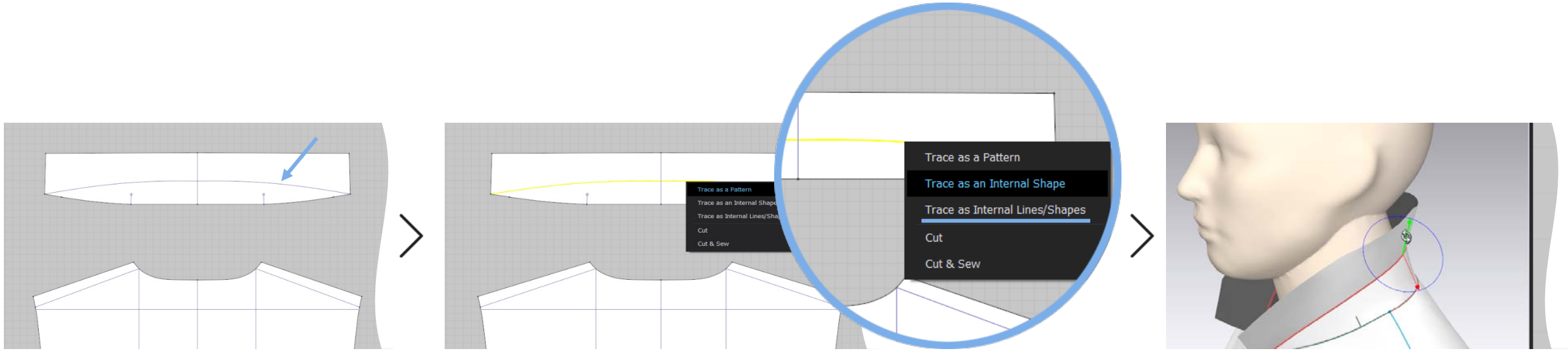
When Bond is applied

Collar

- Drawing an Internal Line for Folding

Draw an Internal Line as a fold line, so that the Collar can be folded precisely.

If the Collar pattern has a fold line marked as a Baseline.



Use Trace tool to Trace Baseline as an Internal Line.

When folding the Pattern based on the fold line, use the Fold Arrangement tool in the 3D Toolbar and set the Fold Angle to 0 or 360 degrees on the fold line.

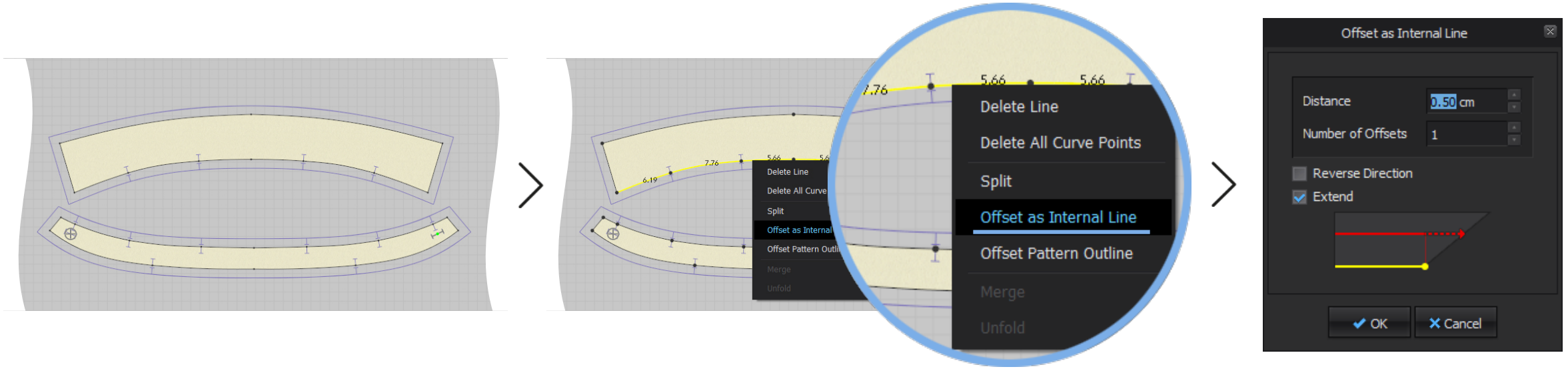
Continued on next page

Collar

- Drawing an Internal Line for Folding

Draw an Internal Line as a fold line, so that the Collar can be folded precisely.

If the Collar pattern does not have the fold line indication

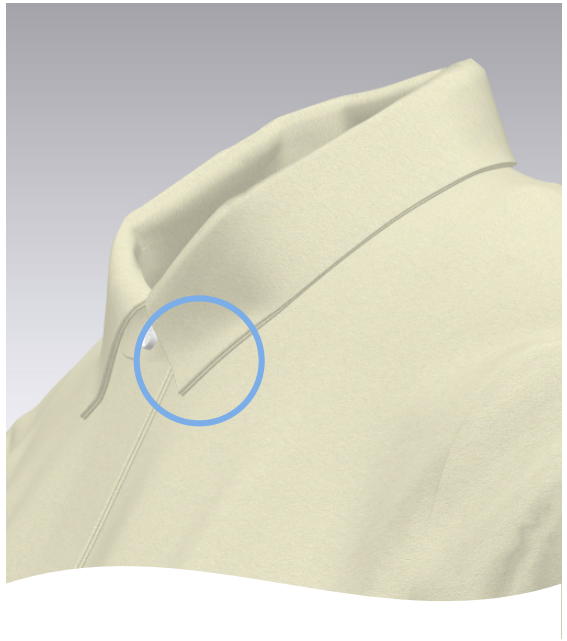


Use the Internal Polygon / Line tool or Offset as Internal Line menu to create an Internal Line as a fold line.

Collar

- Expressing Double Layers

Ensure that the Collar is Double Sided, to make it look more true-to-life.

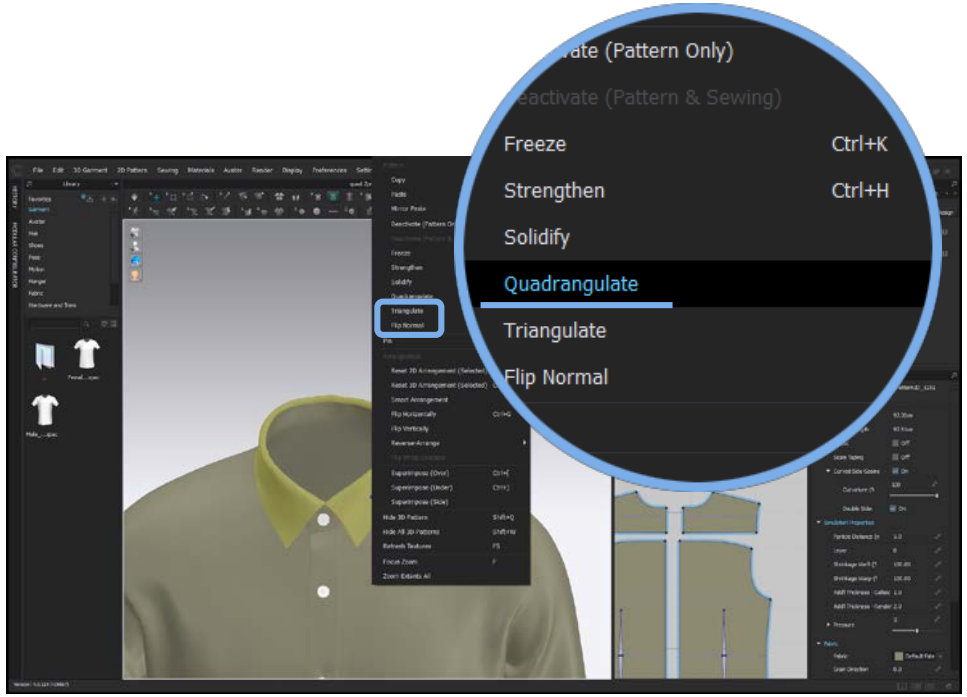


Collar

- Making the fold look more natural

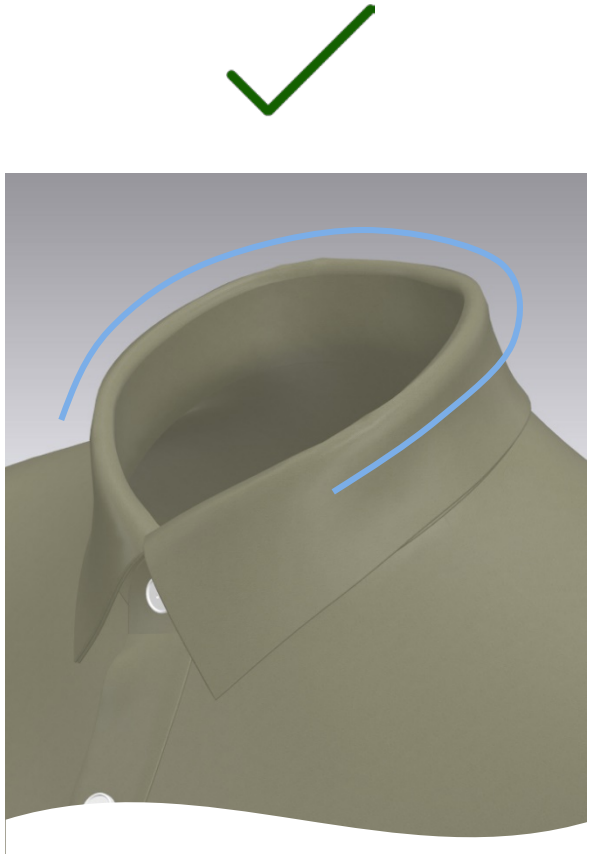
Change the Mesh structure of the Collar Pattern to quadrangular to make the fold line look neater.
Default mesh structure of the garment is triangular.

** Ensure that small patterns (such as Collars) are converted to quadrangular mesh, to make the fold line look neater.



Right-click on the Collar pattern in the 3D Window and select Quadrangulate in the pop-up menu.

Triangular Mesh



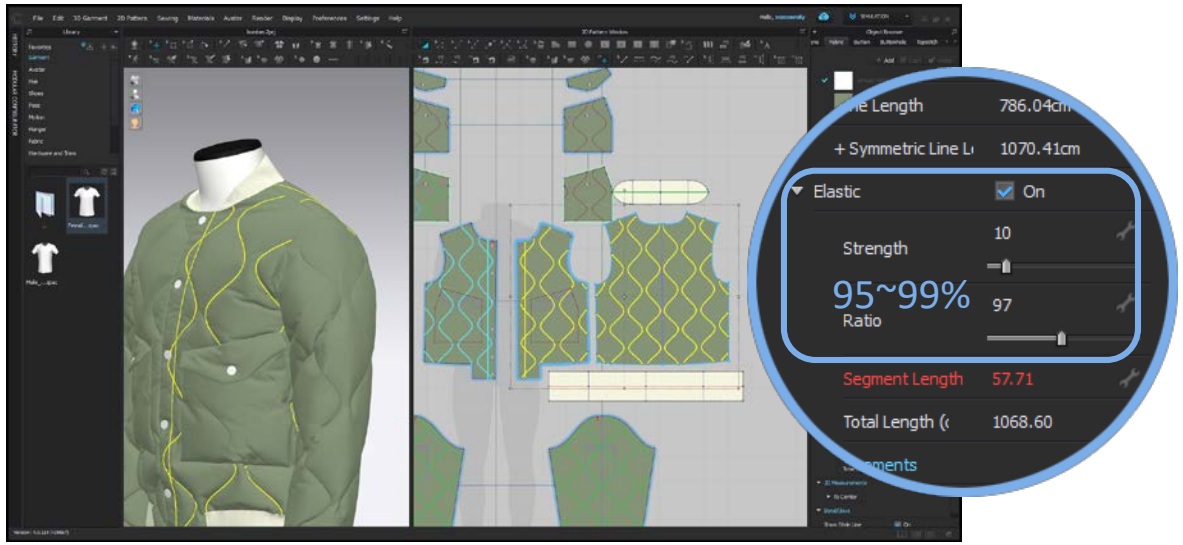
Quadrangular Mesh

Expressing Puckering Using the Elastic Function

Apply Elastic to make wrinkles appear when using Nylon and Polyester fabrics.

1. Select the internal quilting lines for padding.
2. Set the Elastic Ratio between 95 - 99%.

** Adjust the Ratio based on the fabrics to get the desired wrinkles.

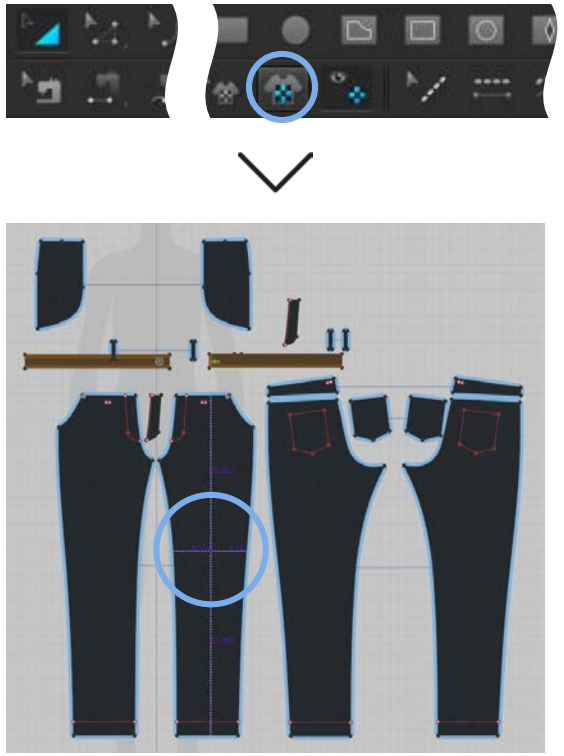


When Elastic is applied to the Quilting Line

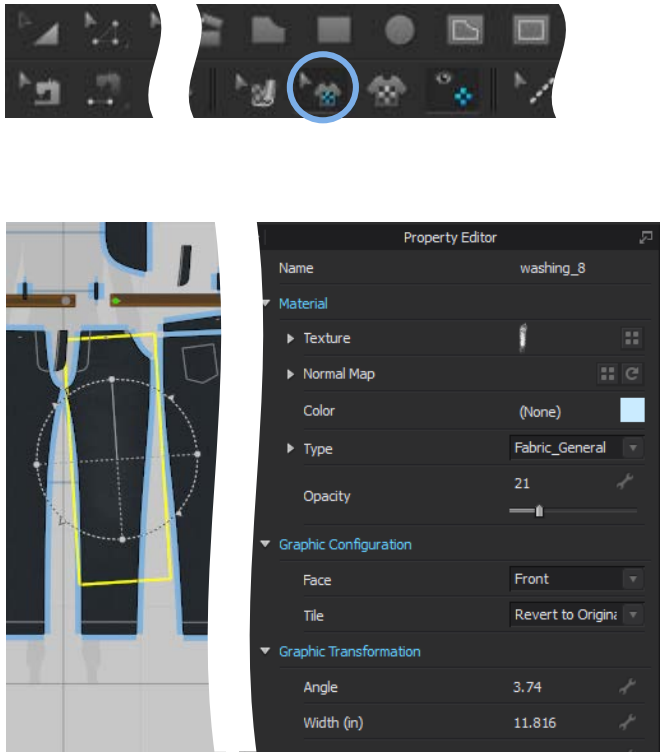
When Elastic is not applied to the Quilting Line

Express wash effects with the Graphic tool

Use the Graphic tool to load wash image files to design washed garments.



Use the Graphic tool to load the wash image file, then click on the 3D garment where you want to add the washing effect.



Use the Transform Graphic tool to adjust the size, position, color and opacity of the image.

Apply various wash image files in the same way.

Continued on next page

Express wash effects with the Graphic tool

Use the Graphic tool to load wash image files to design washed garments.

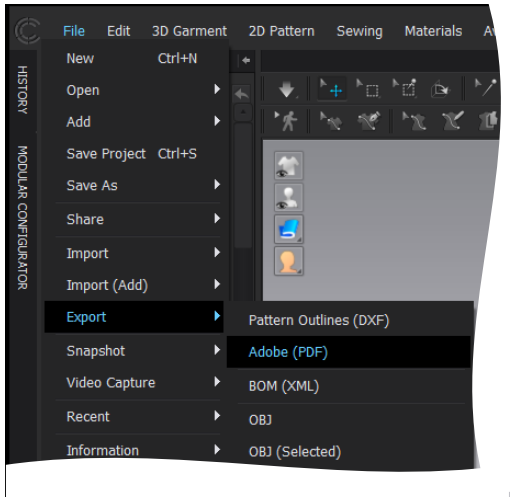
When creating wash image files, it's easier to freely adjust its position on the garment when the image is divided into more pieces.

Express wash effects with Texture images

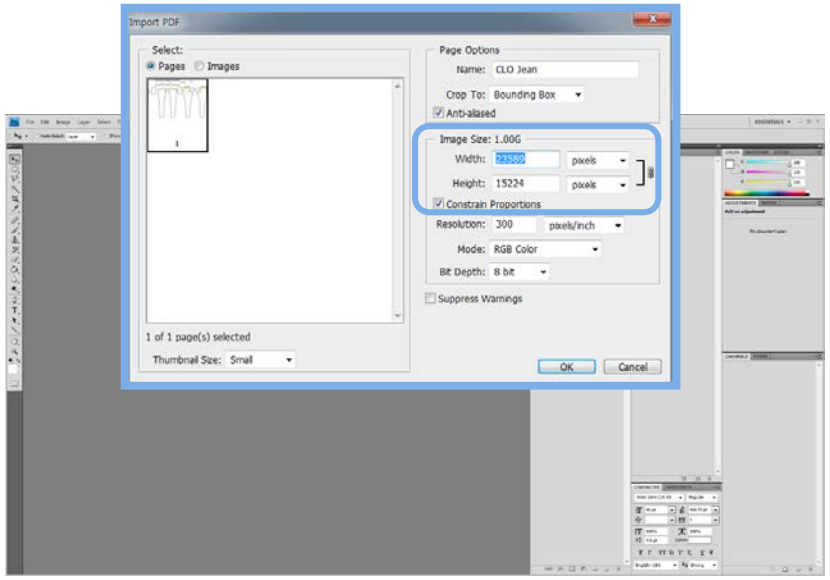
Create wash Texture images in a graphic editing software such as Photoshop, and apply it to the garment in CLO.

Since wash effects are irregularly applied on the entire garment, making a whole Texture image for the entire garment is recommended.

Export all Patterns in PDF format to use in a graphic editing software such as Photoshop, to place the entire Pattern as a background and create the Texture image.



Navigate to Main Menu and select File > Export > Adobe (PDF) to save the entire pattern in PDF format.



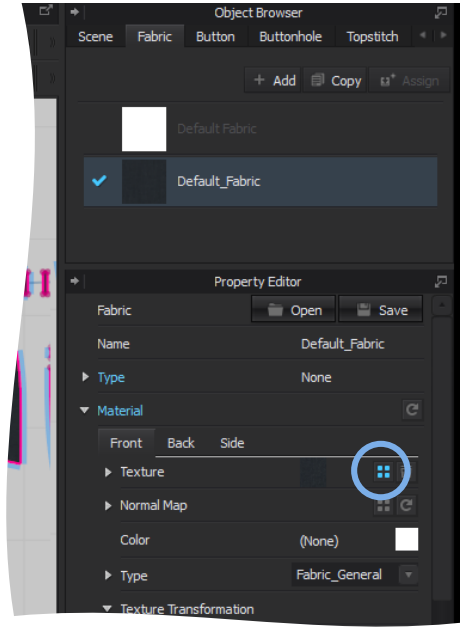
Open the PDF file in Photoshop or any other graphic editing software.
When opening the PDF file, reduce the scale so the Texture file won't be too heavy for the 3D garment.
(Reduce the file size but only as long as the original size of the wash image sources can be used.)

Design the washed garment by loading wash image sources onto the loaded Pattern image file.

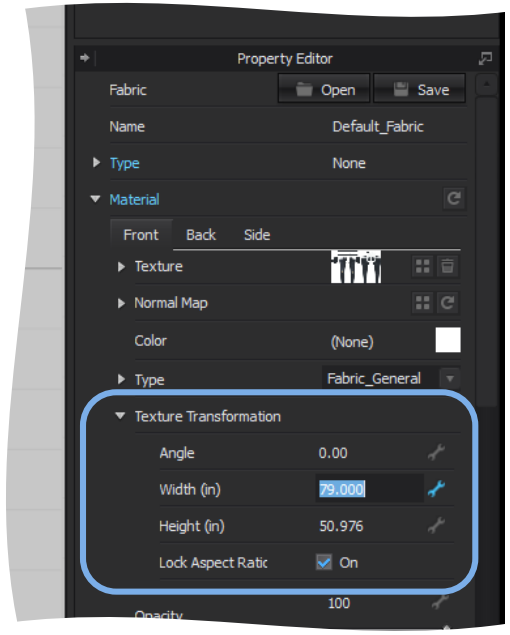
Continued on next page

Express wash effects with Texture images

Create wash Texture images in a graphic editing software such as Photoshop, and apply it to the garment in CLO.



Save the wash texture image in JPG format, and import into CLO as Fabric Texture.

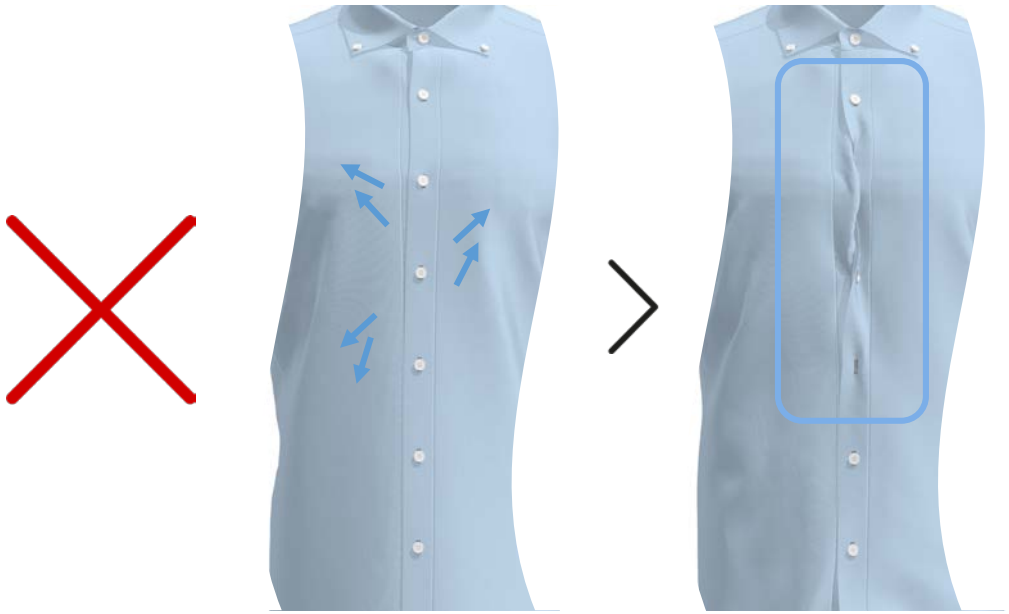


Since the PDF file has been reduced, select Material > Texture Transformation > check Lock Aspect Ratio and enter the original size in the Width or Height.

Adjust the position of the wash Texture image for each Pattern in Print Layout Mode.

Fasten Buttons Stably

Ensure to change the number of layers that Buttons are sewn through when adding Button & Buttonhole on two or more layers.



Bad example (Collision is on)

Good example (Collision is off)

Collapsing Buttons

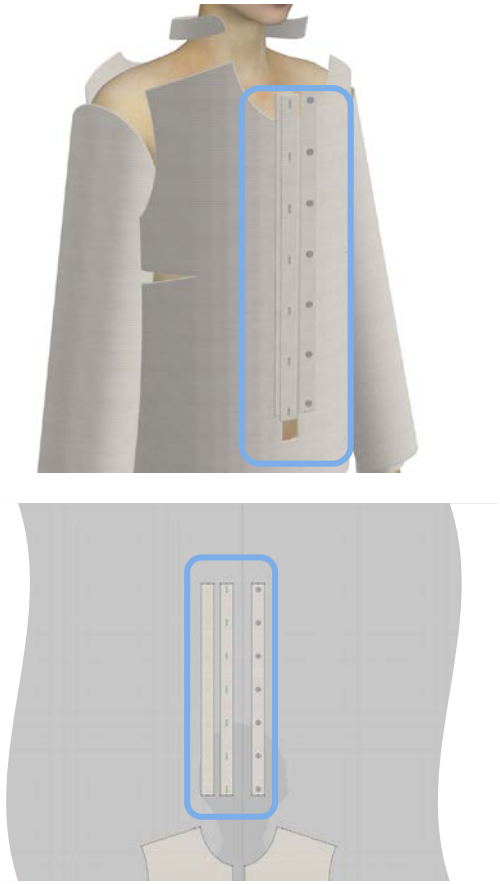
Set the Collision to Off to collapse Buttons

Bad example (Collision is on)

Good example (Collision is off)

When adding a Button & Buttonhole on two or more layers

Ensure to change the number of layers that Buttons are sewn through when adding Button & Buttonhole on two or more layers.



A Buttonhole (or Button) created on two or more layers

Bad example

(when the number of layers the Buttons are sewn through have not been changed with Set Number of Sewing Layers option)

Good example

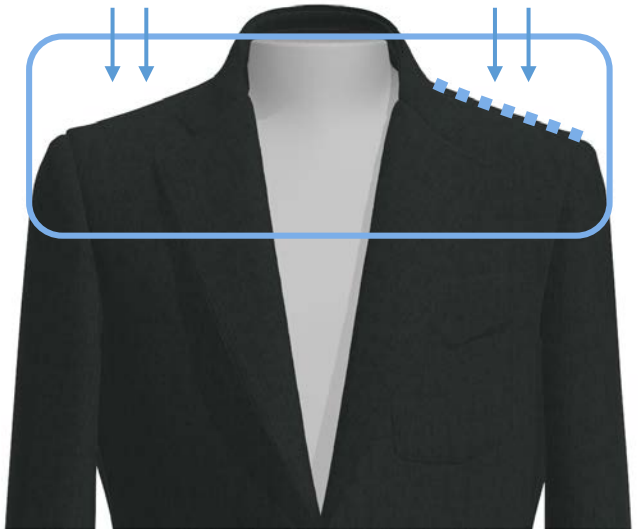
(when the number of layers the Buttons are sewn through have been changed with Set Number of Sewing Layers option)

Keeping the Thickness-Collision value of the Shoulder Pads

Ensure to change the number of layers that Buttons are sewn through when adding Button & Buttonhole on two or more layers.

Each Shoulder Pad has a different Add'l Thickness - Collision value.

Ensure that the default Add'l Thickness - Collision values of the Shoulder Pads were not lowered accidently.



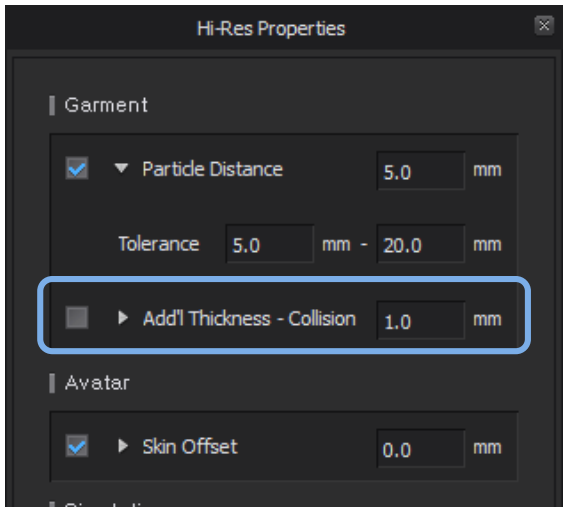
When all the Add'l Thickness - Collision values for different Shoulder Pads have been lowered

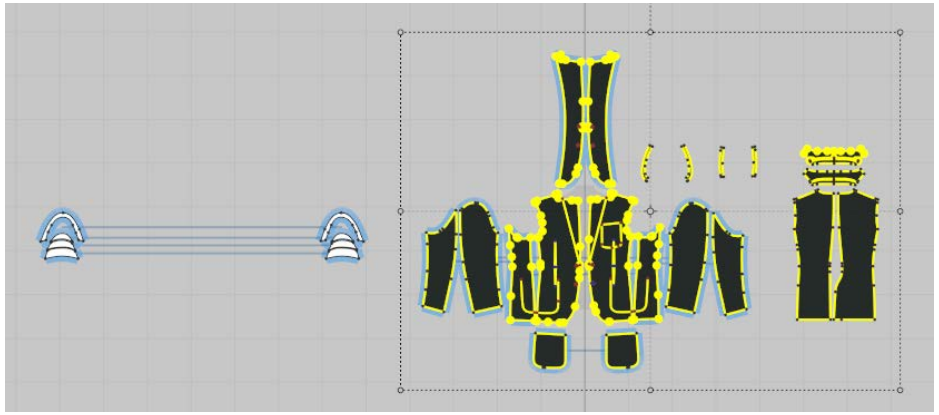
Different Add'l Thickness - Collision values for different Shoulder Pads

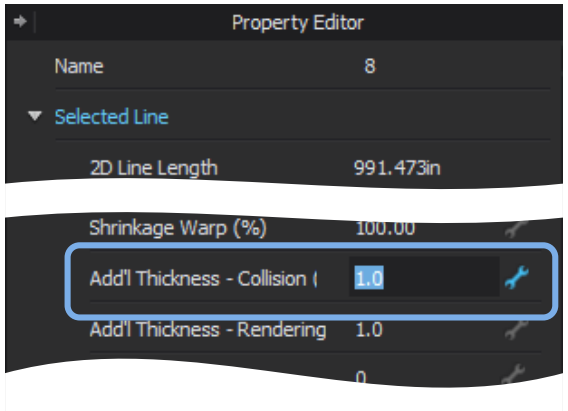
Continued on next page

Keeping the Thickness-Collision value of the Shoulder Pads

Ensure to change the number of layers that Buttons are sewn through when adding Button & Buttonhole on two or more layers.



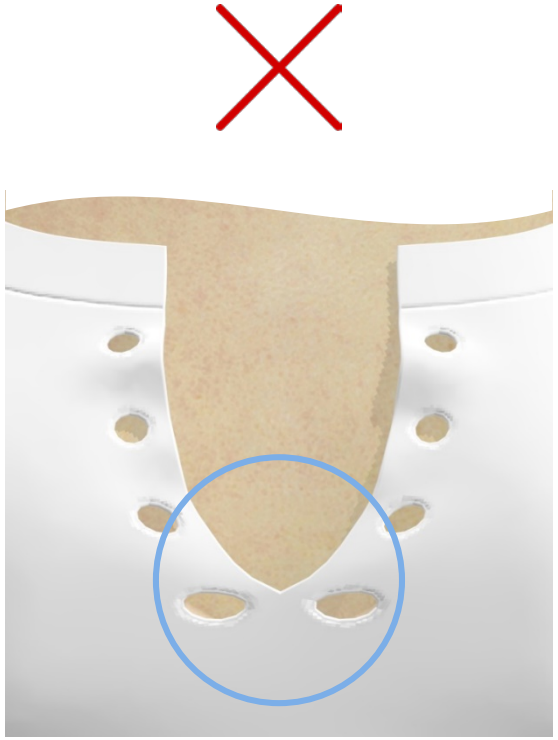


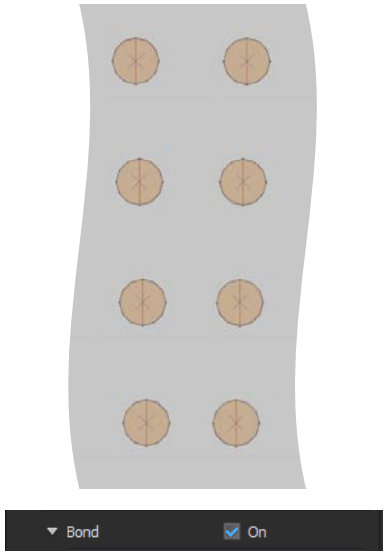


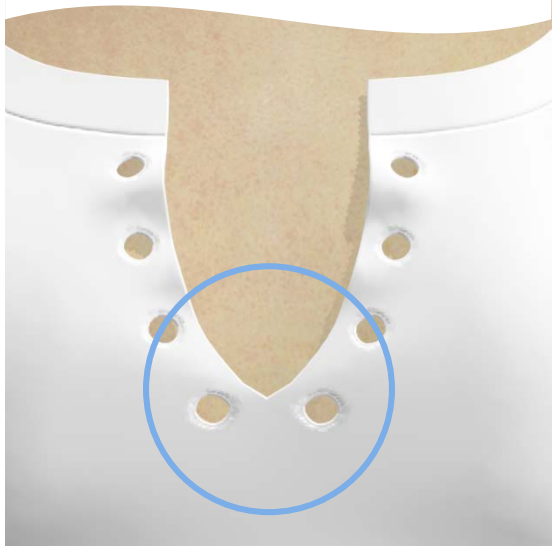
1. Clicking the Hi-Res Garment button when the garment is finished, reduces the Collision Thickness (Add'l Thickness - Collision) value of all Patterns.
2. Ensure to uncheck the Add'l Thickness - Collision option to avoid lowering the value for Shoulder Pads.
3. Adjust the Add'l Thickness - Collision values manually for the other Patterns.
4. Select all Patterns except the Shoulder Pads, navigate to Property Editor > adjust the Add'l Thickness - Collision value to 1.

Checklist for expressing lace-ups

To keep the circular shape of the hole, set Bond to the circle pattern with transparency.





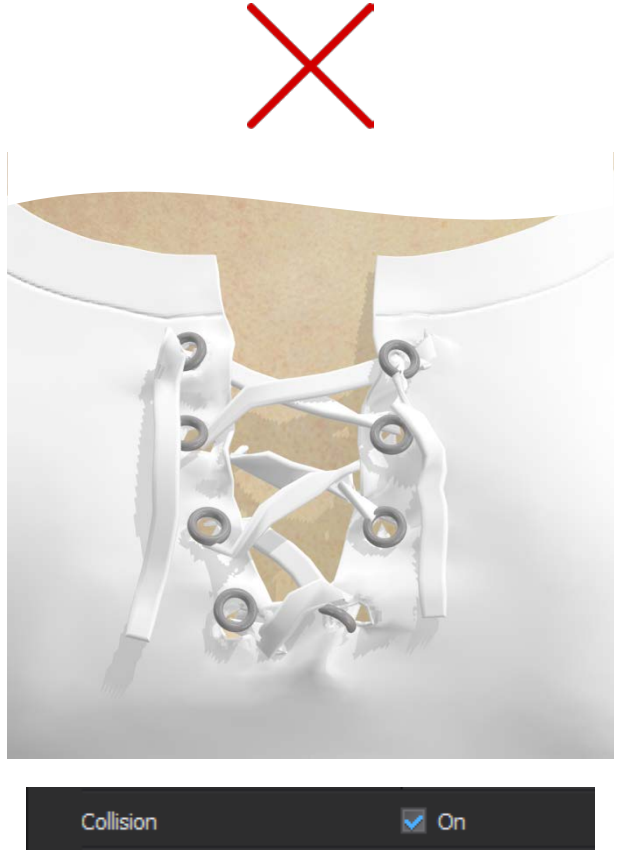


Select all the hole patterns, check Bond option in the Property Editor.

Checklist for expressing lace-ups

- Set the Collision option off for eyelet

For stable simulation of eyelets, set the Collision option off.

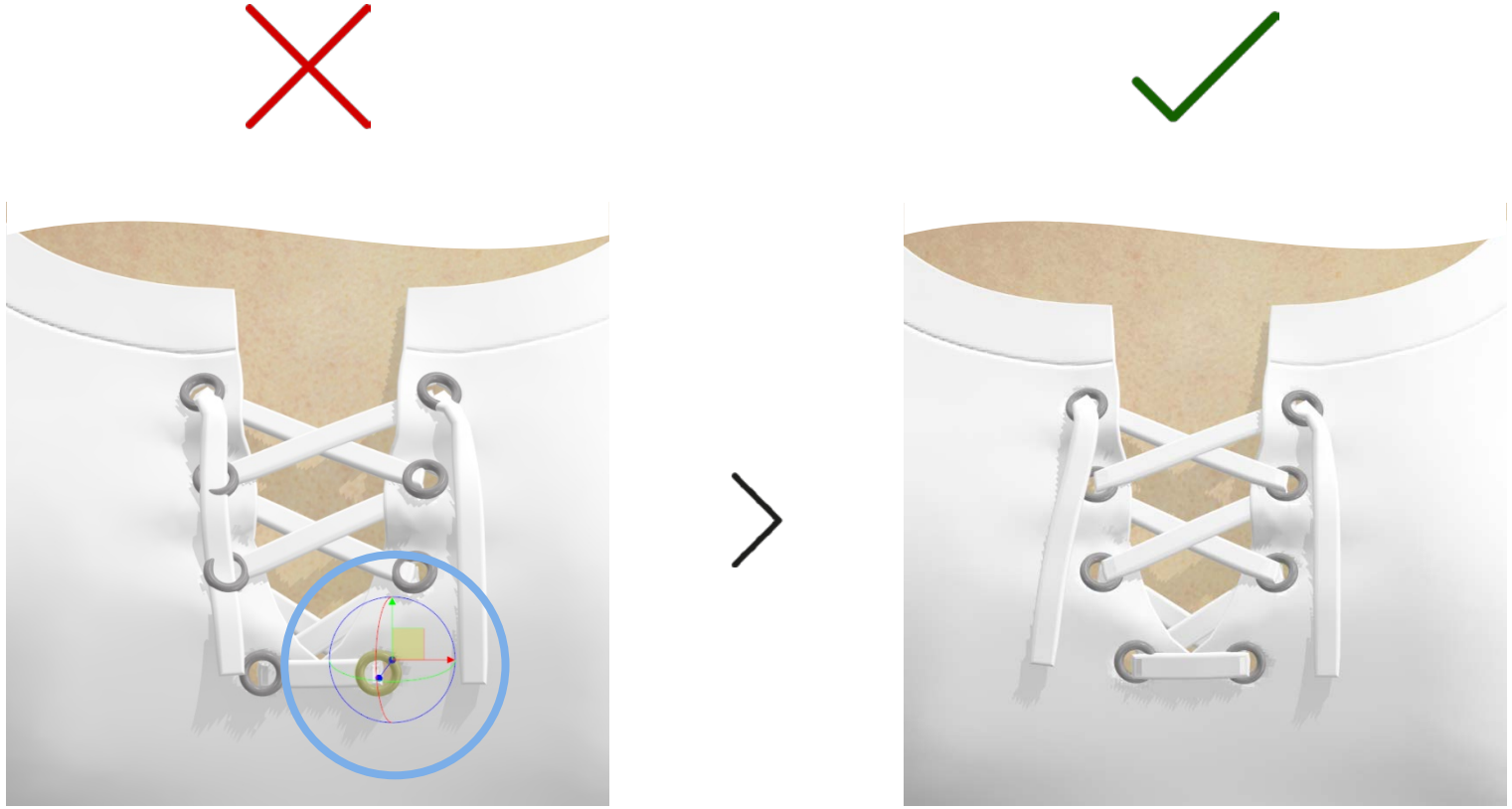


Select the eyelet with Edit Button tool, set the Collision option off in the Property Editor.

Checklist for expressing lace-ups

- Set the eyelet position with Gizmo

Adjust the position of the eyelets with Gizmo to position eyelets under the strap.

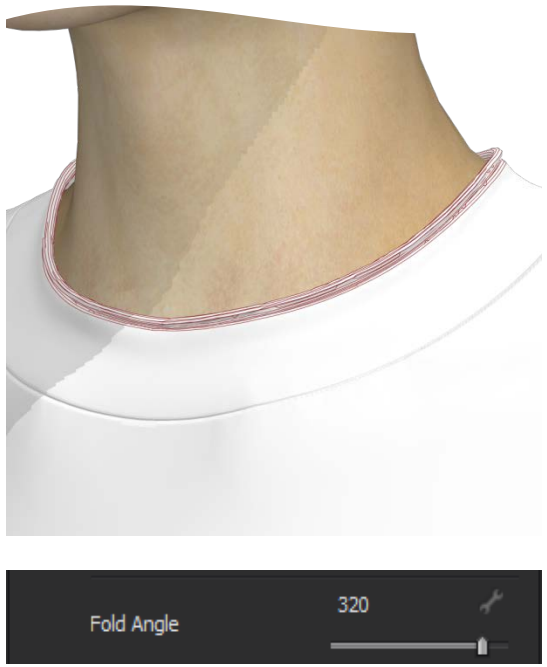


Position can be freely changed with the Collision option off.

Checklist for expressing raw edge

- Set the eyelet position with Gizmo

Create an Internal Line and apply Fold Angle to express the rolled Pattern.



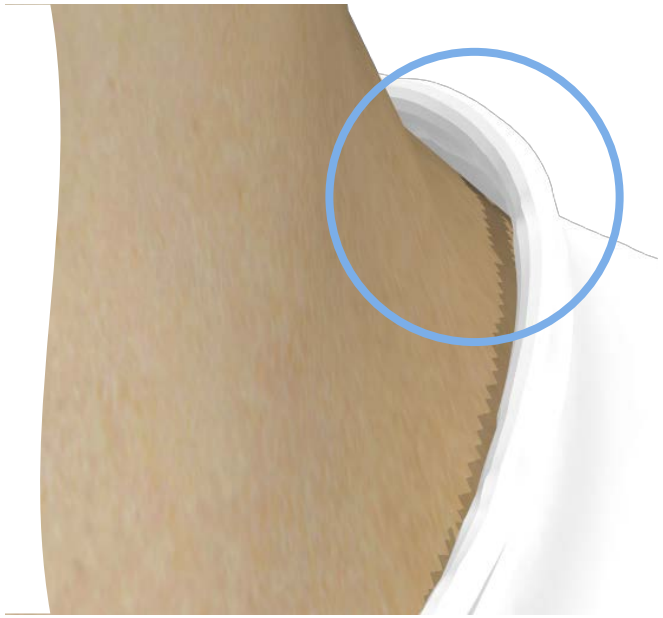
Use the Offset as Internal Line tool within the Raw edge portion to create a narrow sectioned Internal Line from the edge.

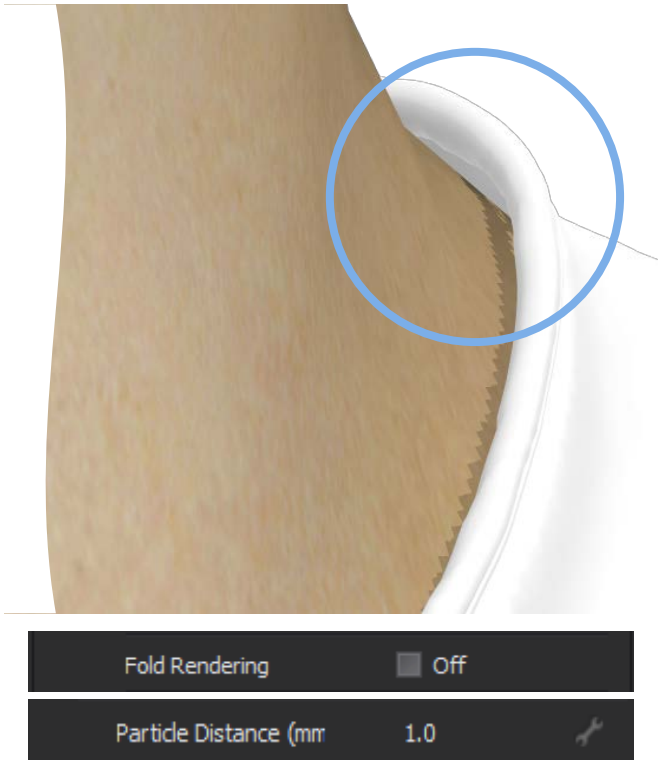
Select the Internal Line and change the Folding Angle in the Property Editor to the direction of the pattern to be rolled.

Checklist for expressing raw edge

- Making natural curve

To make it look realistic, uncheck the Fold Rendering option and change the Particle Distance to 1.



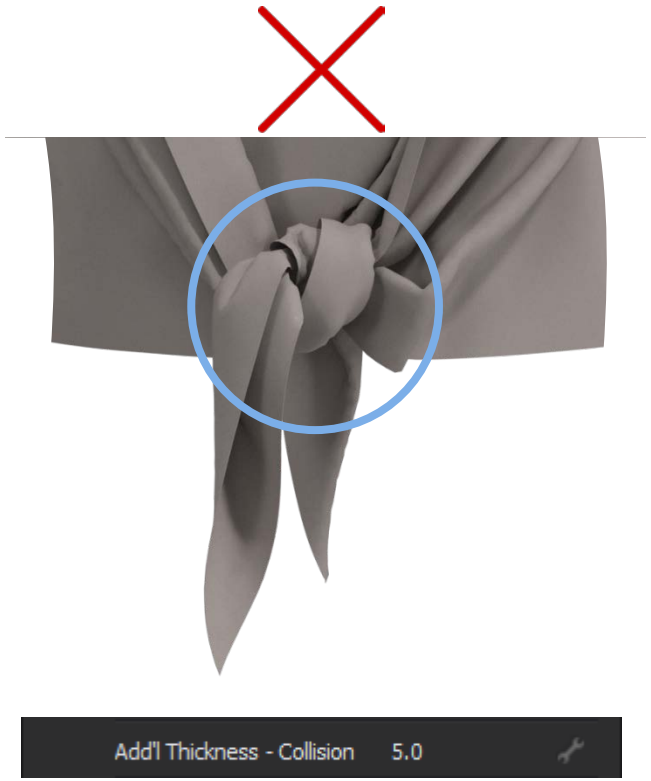


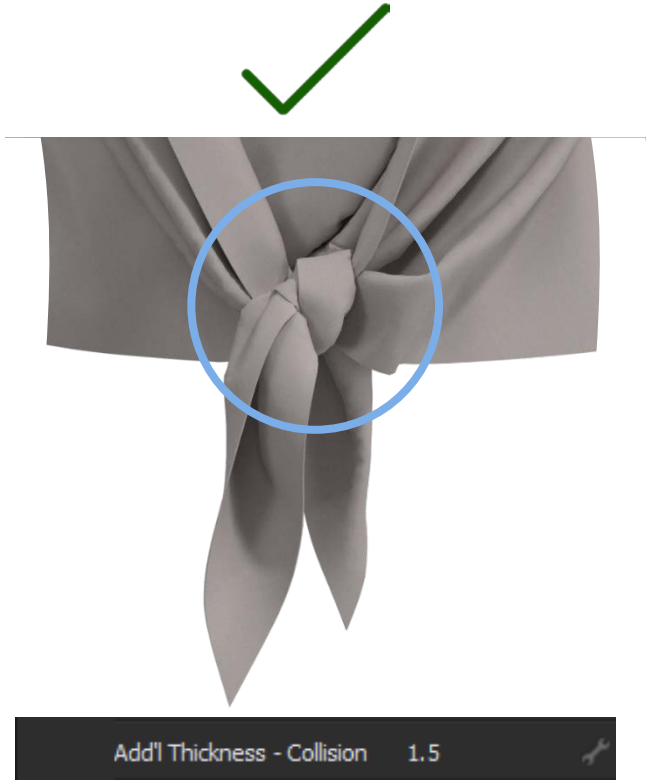
Select the Internal Line, and uncheck the Fold Rendering option in the Property Editor.

Select the Raw Edge Pattern and change the Particle Distance to 1.

To make good knots

Gradually adjust the Add'l Thickness-Collision of the tied Patterns to 1.5 - 2 mm.





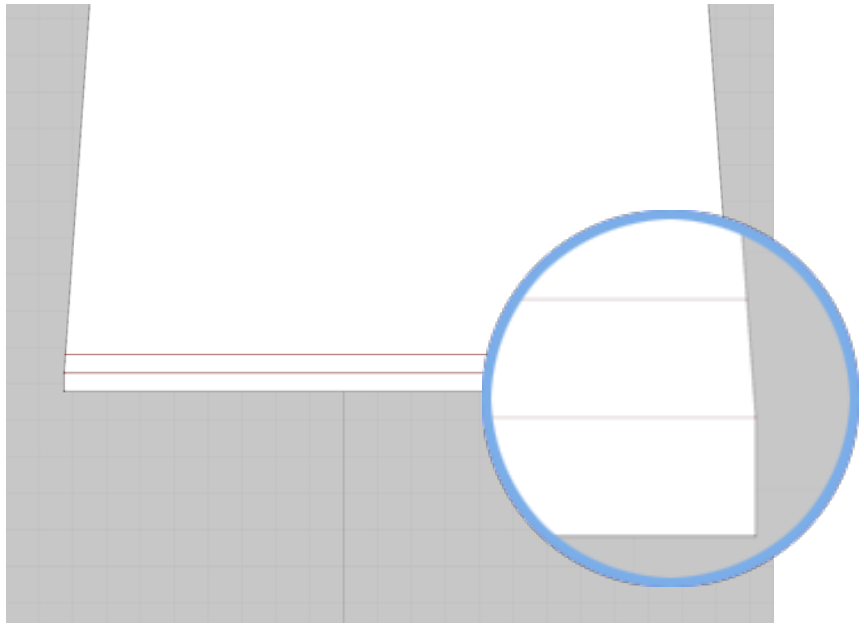
Ensure that the tied Pattern is selected and adjust the Add'l Thickness-Collision to 1.5 - 2 mm in the Property Editor to avoid the bound space as shown on the left.

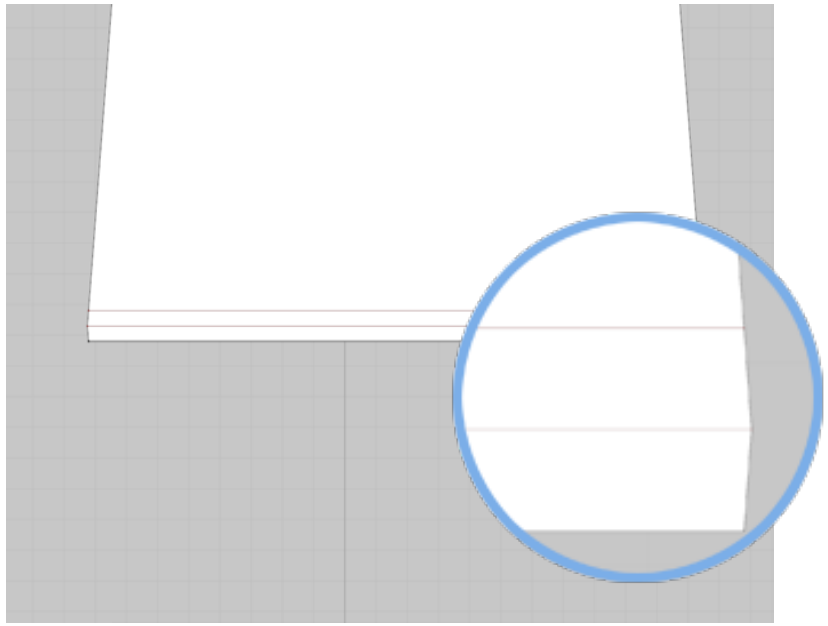
Do not adjust the value drastically, at once. Adjust the value gradually to avoid the loosening of the Knot

Folding the Pattern

- When folding the Pattern

If the slope of the side line is not vertical, make the amount of the slope opposite to that of the original slope.



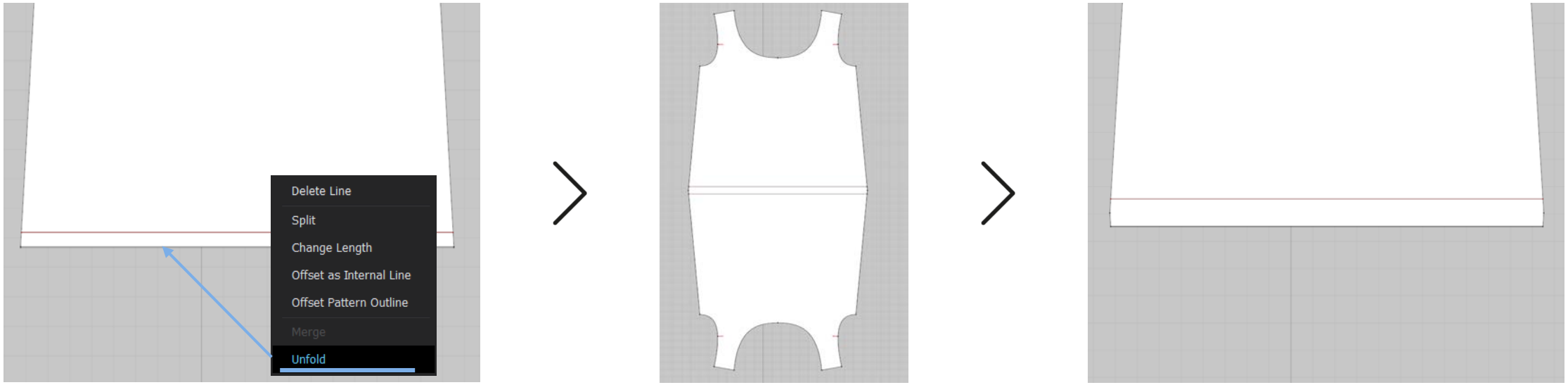


Continued on next page

Folding the Pattern

- When folding the Pattern

If the slope of the side line is not vertical, make the amount of the slope opposite to that of the original slope.



Cut

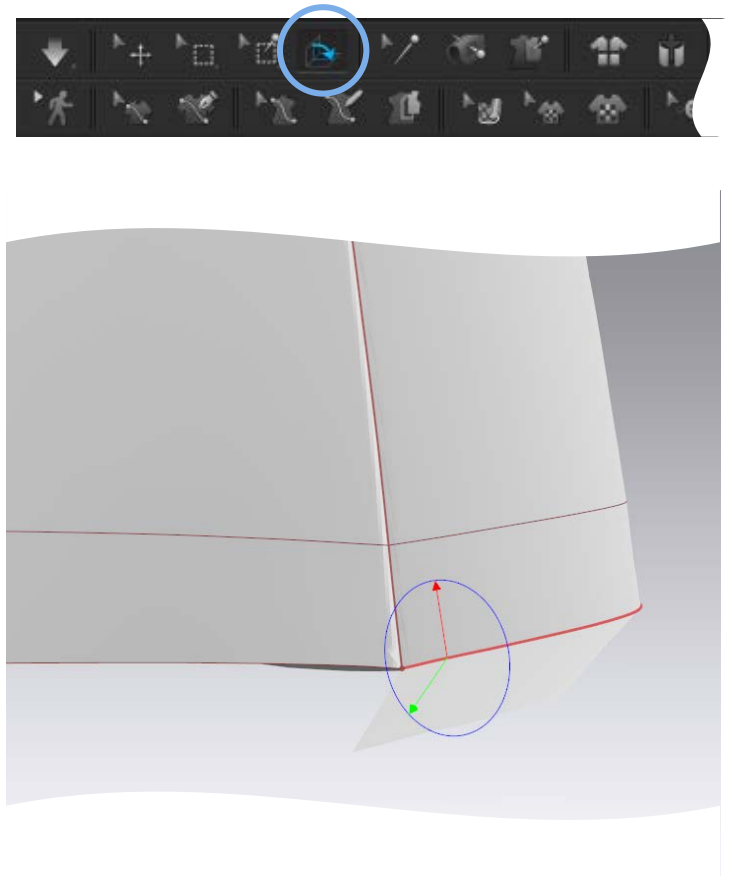
After selecting the Pattern Outline, use the Unfold function to create a Pattern of the opposite shape, and then delete the rest except the required amount.

Continued on next page

Folding the Pattern

- When folding the Pattern

If the slope of the side line is not vertical, make the amount of the slope opposite to that of the original slope.

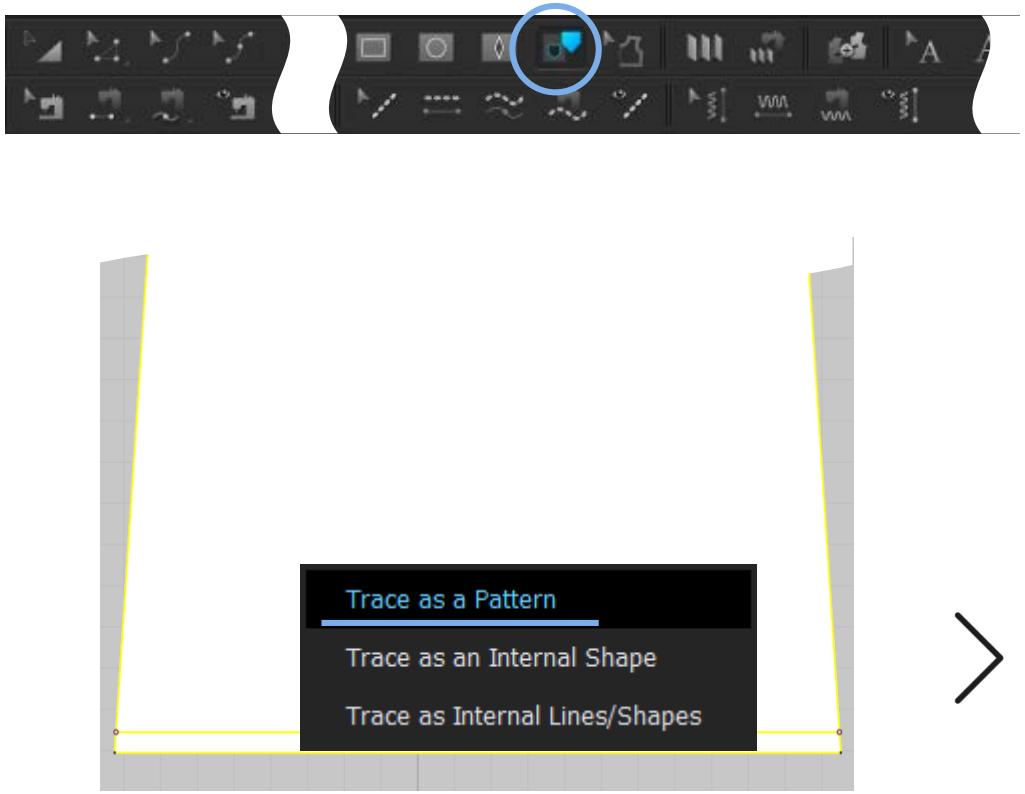


Use the Fold Arrangement tool on the 3D Toolbar to trace the Baseline and Fold, and set the Fold Angle to 0 degrees or 360 degrees.

Express as two layers

- Create a Turnback Pattern using the Trace tool

After selecting the Turnback amount with the Trace tool, copy and paste it as a Pattern.



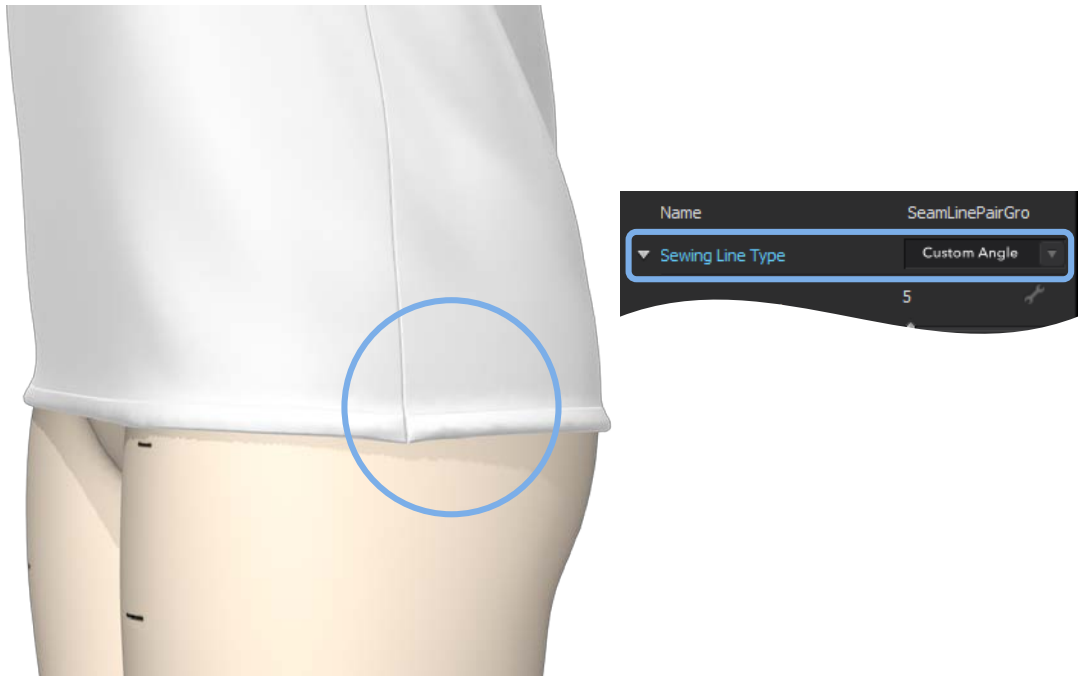
Use the Trace tool in the 2D Toolbar and select the Turnback amount, and then use the Trace as Pattern tool to paste the Pattern.

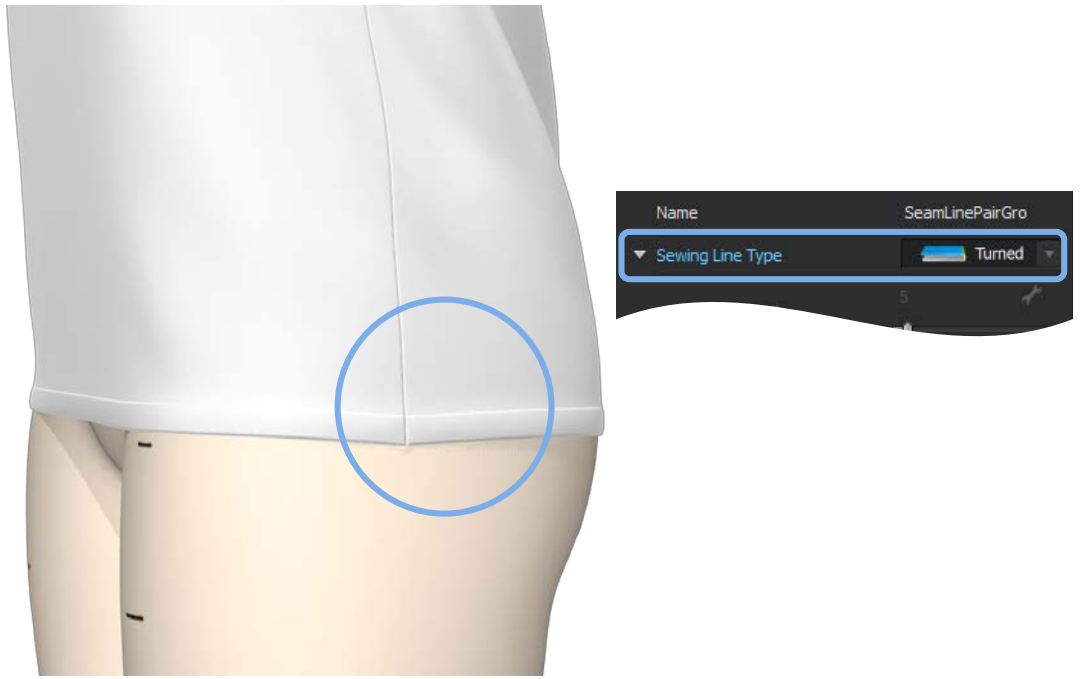
Continued on next page

Express as two layers

- Create a Turnback Pattern using the Trace tool

After selecting the Turnback amount with the Trace tool, copy and paste it as a Pattern.



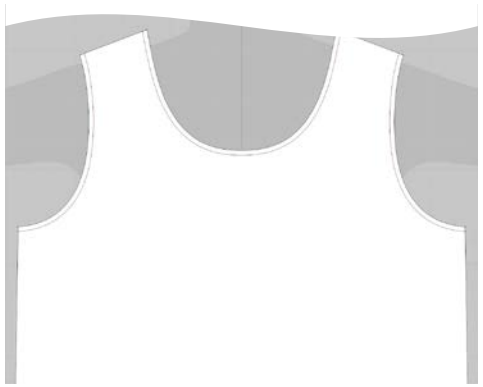


Change the Sewing Line Type to flatten the overlapping part.

Visible Binding

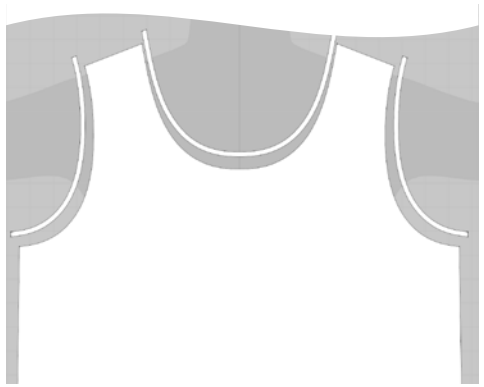
- Binding on the surface

Cut the original Pattern into a Binding and adjust the Thickness.

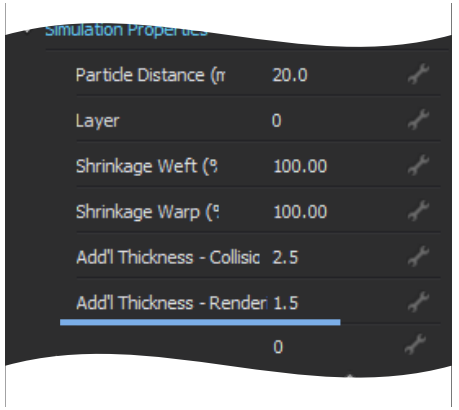


Create an Internal Line for the Binding width

(Use the Offset as Internal Line tool)



Cut & Sew

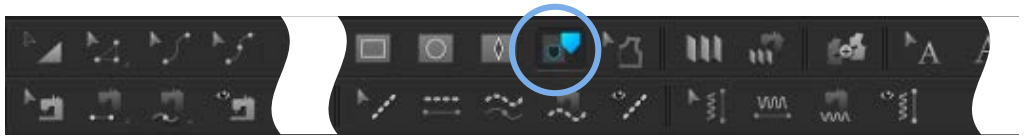


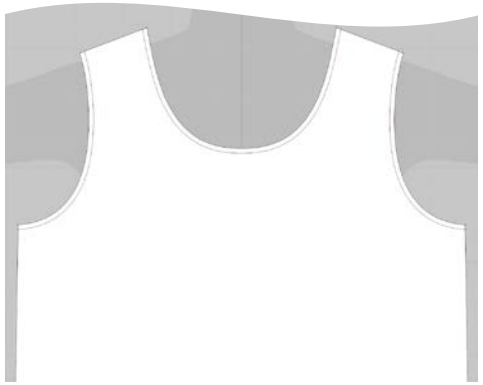
Add the Thickness (1.5~2mm) to the Binding Pattern.

Inner Binding

- Using the Trace tool to create the Binding Pattern

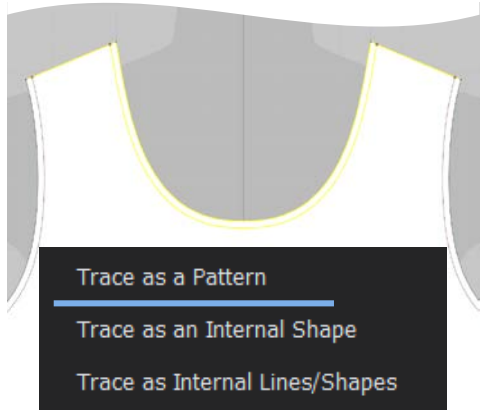
Use the Trace tool to copy and paste the section of the Pattern for Binding.



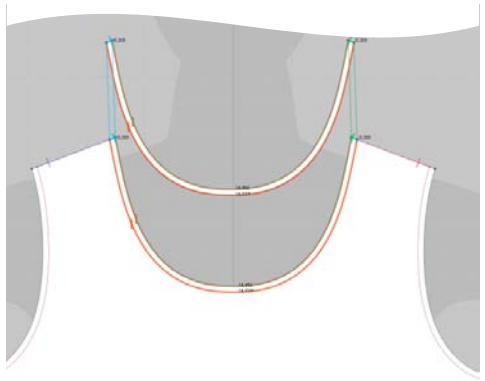


Create an Internal Line for the Binding width

(Use the Offset as Internal Line tool)



Use the Trace tool and paste as a Pattern



Sew the Binding Pattern to the Binding amount.

Sew and arrange inside the garment

Continued on next page

Inner Binding

- Using the Trace tool to create the Binding Pattern

Use the Trace tool to copy and paste the section of the Pattern for Binding.

For stable Simulation, adjust the Particle Distance to 5.

F A B R I C

Importance of Normal Map

Apply Normal Map to express uneven Textures.

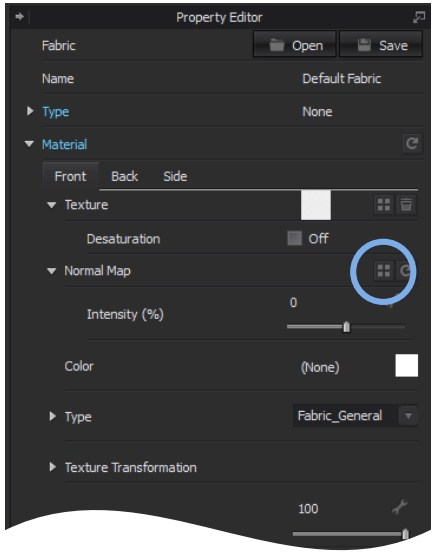
Without Normal Map images

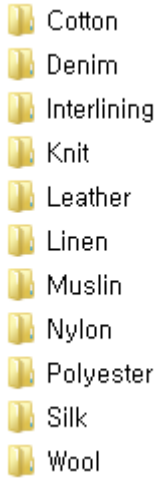
With Normal Map images

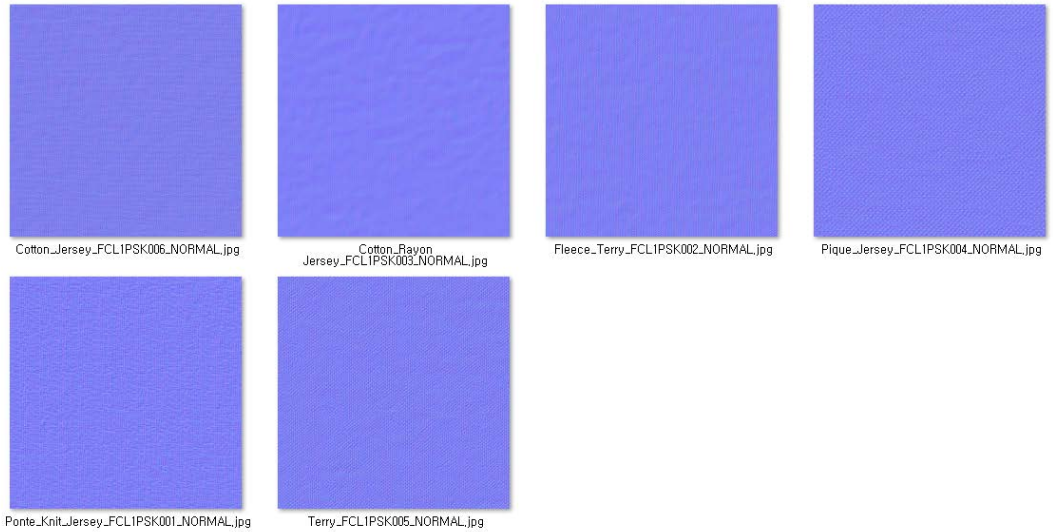
Normal Map helps express the realistic uneven Texture of the Fabric with shadows.

If there is no actual Normal Map

Use the default Normal Maps in CLO.







Select the Fabric and navigate to the Property Editor - Normal Map, locate the desired Normal Map image and click Open.

Good example of one repeat Texture

Ensure that grids are avoided on repeat and color when applying Textures

Grids appears

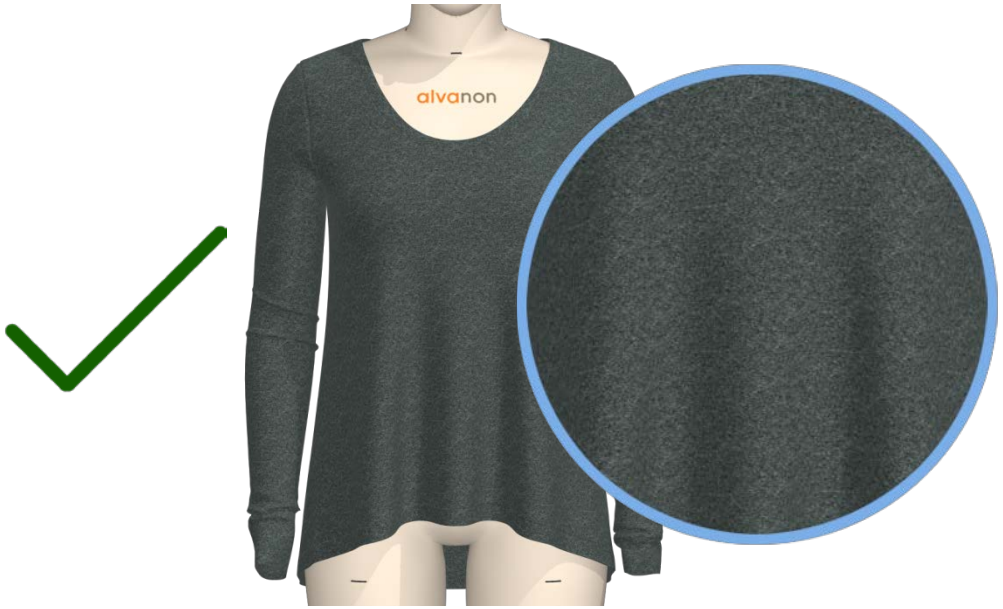
Lines appears

Setting DPI for the edited Texture

Ensure that the DPI of the image is set after editing the Texture, to the same DPI of the original scan.

Modify the DPI in a graphic editing software such as Photoshop, because it can be loaded at a different scale if the DPI of the scanned Texture was modified while editing.

Original DPI : 300 DPI
Fixed DPI : 300 DPI



Original DPI : 300 DPI
Fixed DPI : 72 DPI

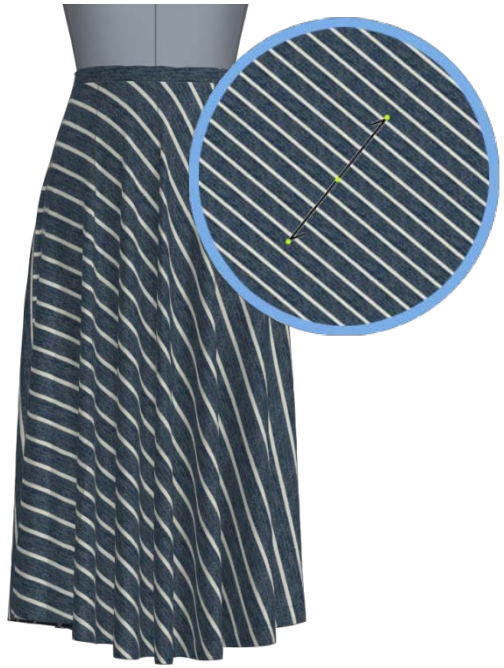
When editing (Rotation) Texture

If the Grainline is modified for the Texture rotation, the Physical Properties of the garment will be changed as well.

Note that the silhouette of the garment will change when rotating the Grainline, since it changes the direction of the Texture as well as the Fabric's Physical Properties.

Warp

Bias



Silhouette differences according to the Physical Property

If the Grainline is modified for the Texture rotation, the Physical Properties of the garment will be changed as well.

Applying Fabric files measured with the actual Fabric and CLO Fabric Kit gives the most realistic silhouette.

Adding Fabric's Physical Properties

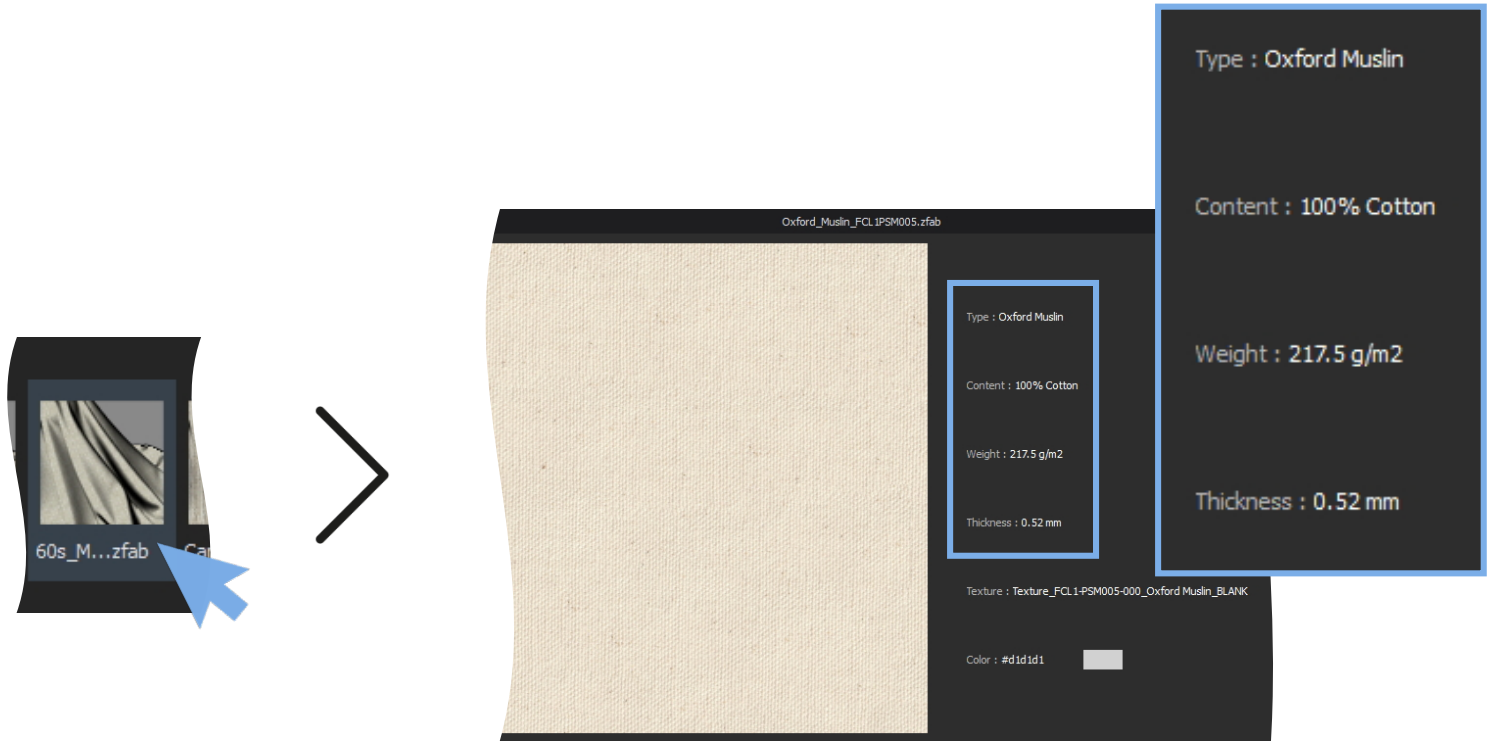
Actual garment

Default Fabric

If there is no actual Fabric — Use the most similar Fabric from the Library.

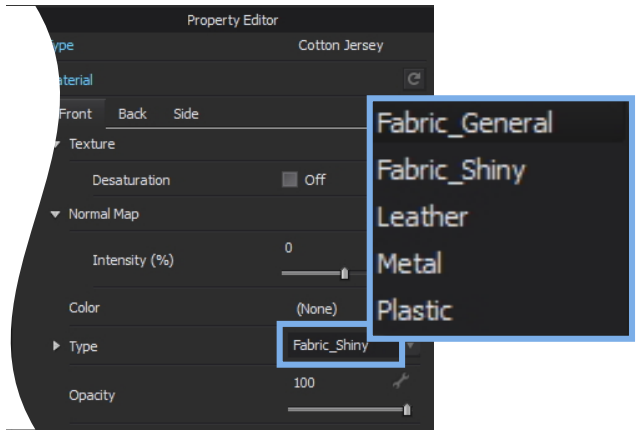
Check the contents by placing the cursor on the Fabric in the Fabric Library.

Select the most similar Fabric by checking its contents.



Changing Material Type

Set the appropriate Material Type for the Fabric.



Select the Fabric and apply the appropriate Material Type in the Property Editor.

General

Shiny

Leather

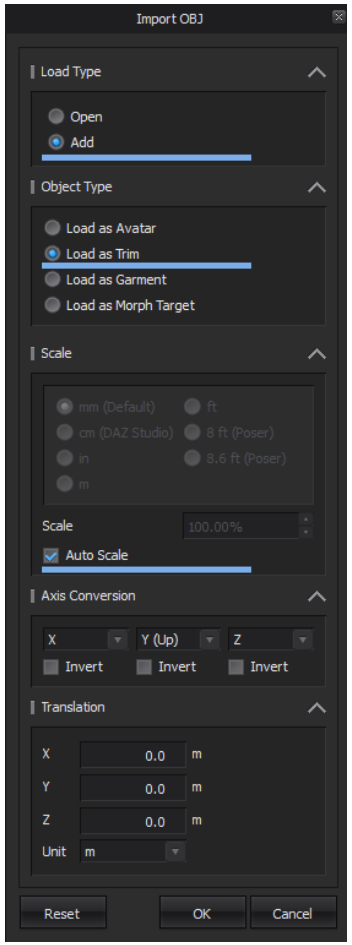
Metal

Plastic

EXPRESSING TRIMS

Load as Trim Load OBJ as Trim, and place on the garment

Load OBJ as Trim



If OBJ file is not registered to the Library

1. Select File > Import > OBJ menu
2. Select the OBJ file and OK
3. Check the options as shown in the image and select OK

If OBJ file is registered to the Library

1. In the Library, select the Folder where the OBJ file is located
2. Right-click on the file and select Add To Workspace
3. Check the options as shown in the image and select OK

** For Scale, select the original Unit of the OBJ file Default size in CLO is mm.

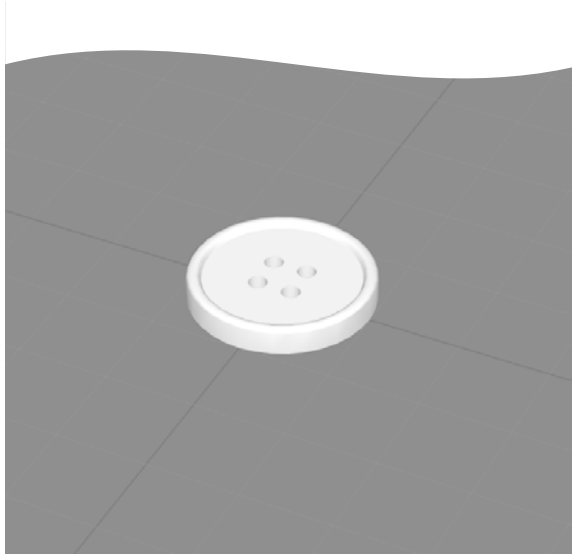
Utilizing the Button function

Easily express Trims by registering custom OBJ as a Button.

Important note on creating OBJ files to register as Buttons

Follow the rules below, when creating OBJ files in 3DS Max, Maya, etc.

- OBJ must be located in the middle of the grid.
- The Surface of the OBJ should be facing up.

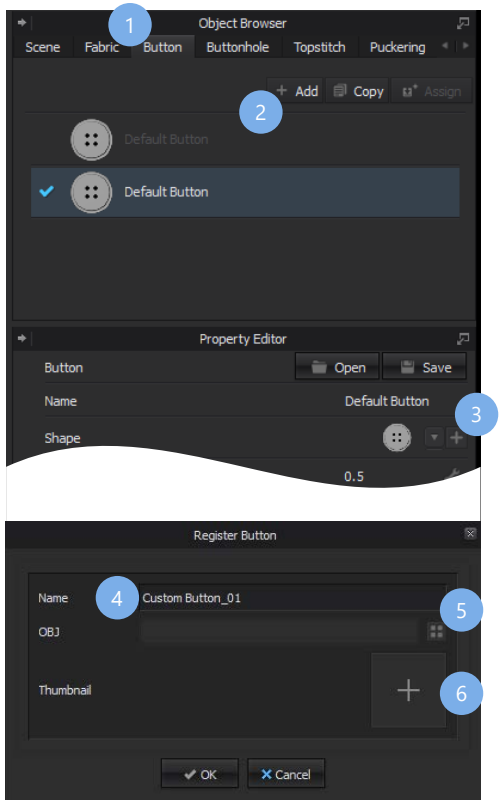


Continued on next page

Utilizing the Button function

Easily express Trims by registering custom OBJ as a Button.

Register Custom OBJ as Buttons



1. Navigate to the Button tap in the Object Browser
2. Select Add to create a new Button
3. Select + button located next to the Shape in the Property Editor
4. Specify the file name
5. Select icon to select the OBJ file
6. Add a Thumbnail image and select OK

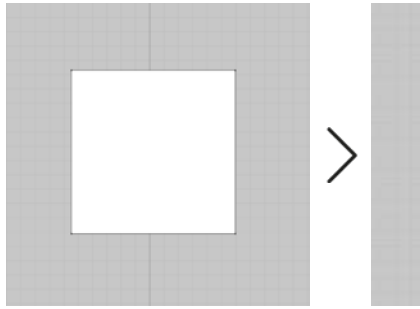
Expressing Trims using images and patterns

If the Trims are not in OBJ format, express Trims using images and patterns.

If the Trims are not in OBJ format, easily express realistic Trims using images and patterns.

1. Create a rectangle pattern
2. Apply the image of a trim to the Pattern
3. Scale the size of the image on the pattern to actual scale
4. Use Internal Polygon tool to create Internal Shape to match the Trim shape
5. Cut the Internal Shape
6. Place the Pattern on the garment

** When Simulation is needed, use Tack function to attach the trim to the garment
** To express hard trims, set the Fabric Physical Properties to Trim_Hardware

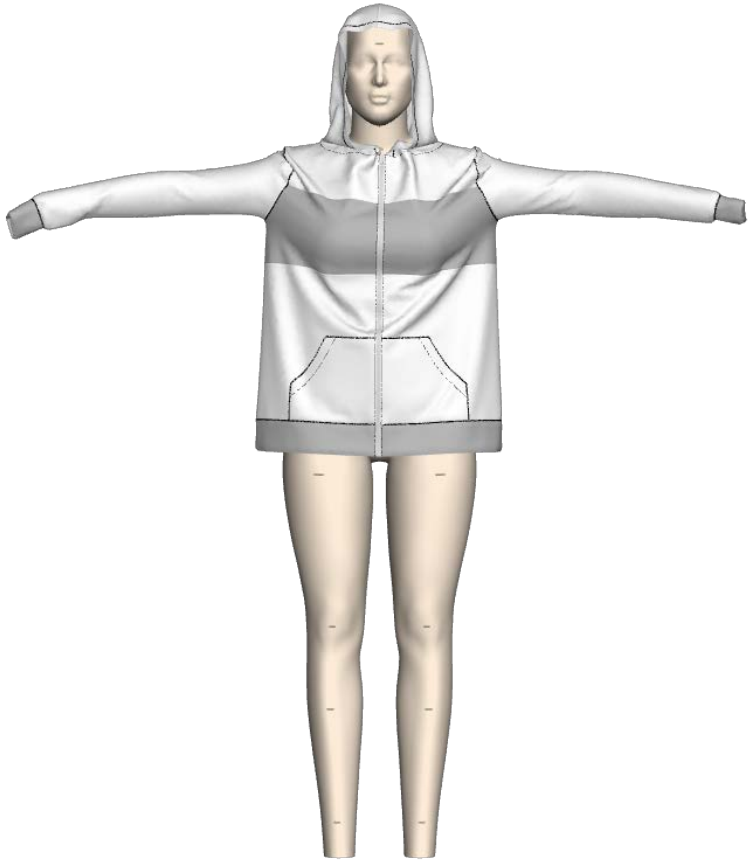




ENHANCING THE QUALITY OF GARMENT

Changing the Avatar Pose to Attention

It is difficult to check the silhouette and wrinkles of the 3D garment with the Avatar in T-pose.
After arranging Patterns, ensure that the Avatar's pose changes to attention.



T-Pose

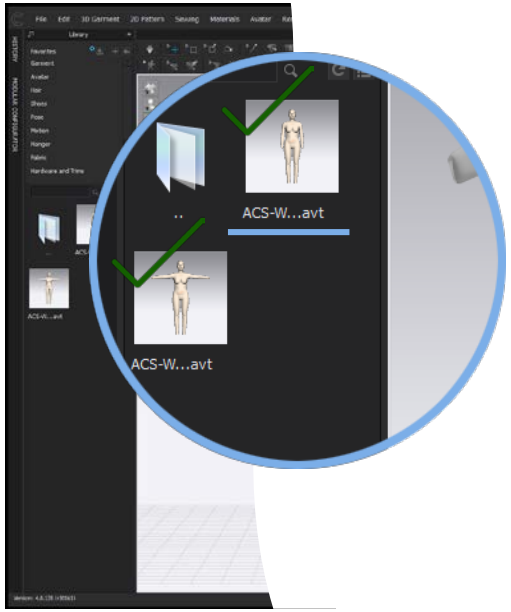
Attention

Continued on next page

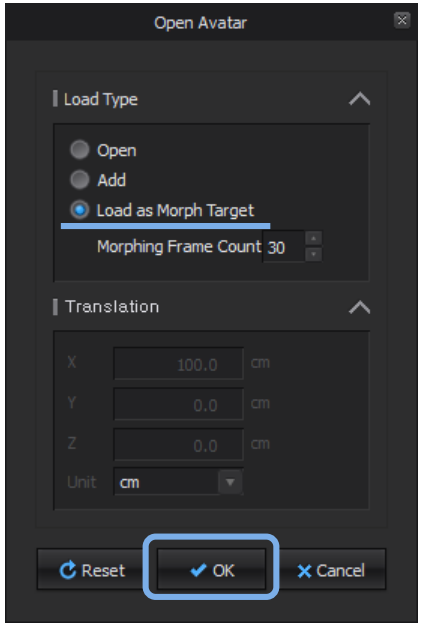
Changing the Avatar Pose to Attention

It is difficult to check the silhouette and wrinkles of the 3D garment with the Avatar in T-pose.
After arranging Patterns, ensure that the Avatar's pose changes to attention.

If you are using digital AlvaForms, you should h
ave T-pose and A-pose files in .AVT format.



After basic garment arrangemen
t, open the A-pose .AVT file.



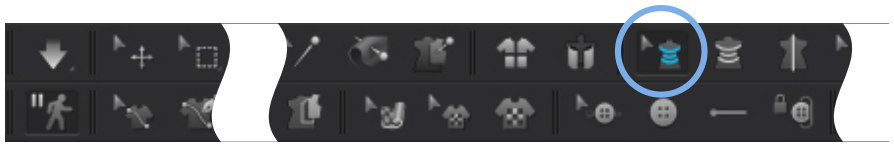
When loading the A-pose file, Load as Morph Target M
enu must be selected in the Open Avatar window.

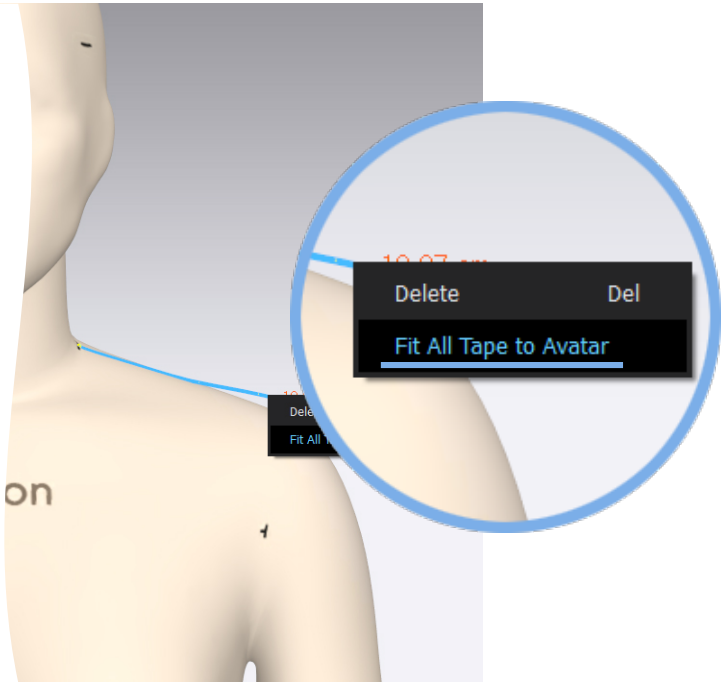
** Changing the pose should be done before lowering the Particle Distance of the garment to 5mm.

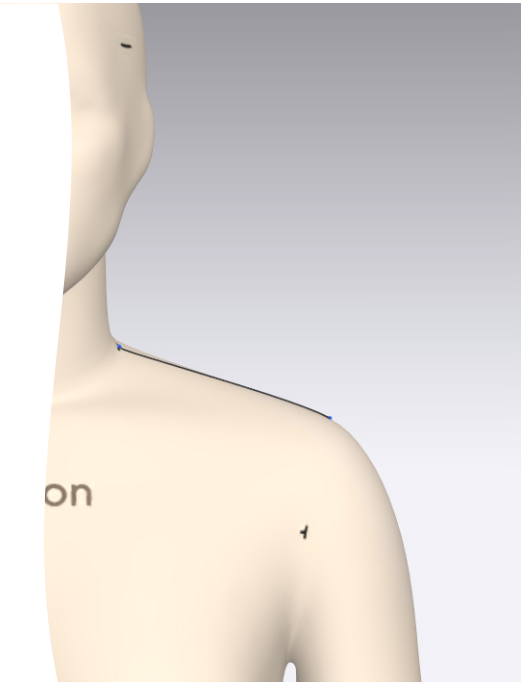
Fit Avatar Tape to Avatar

If the Avatar Tape set on the Shoulder Line is floating while changing the pose, ensure that the Tape on the Avatar fits again. Use the Fit All Tape to Avatar function.

1. Select the Edit Avatar Tape on the 3D Toolbar
2. Right click on one of the Avatar Tapes
3. Select the Fit All Tape to Avatar from the pop-up Menu.







Importance of Aligning the Shoulder Line

If there is a difference between the Shoulder Line of the Avatar and the Shoulder Seam Line of the garment, it becomes impossible to check the balance of the garment.

When the Shoulder Line is facing forward

When the Shoulder Line is aligned

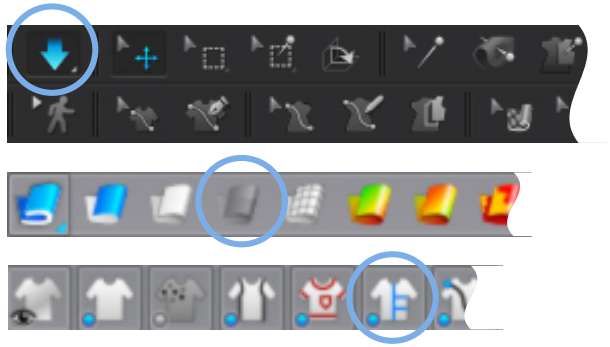
When the Shoulder Line is facing backwa rd

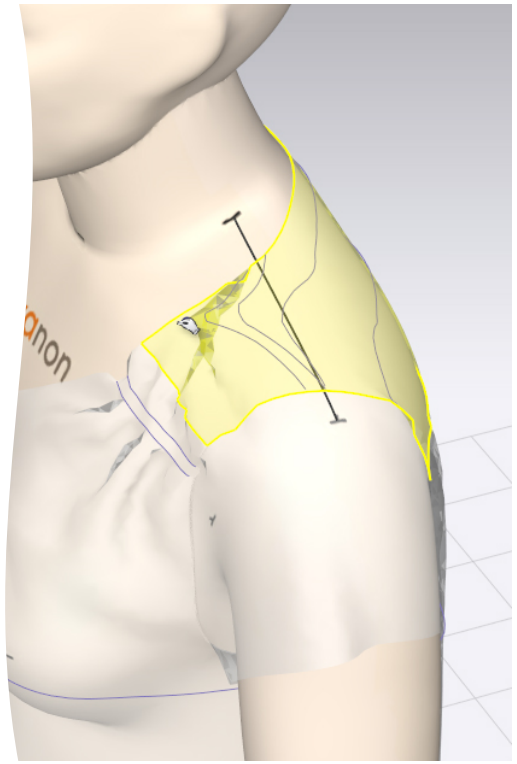
How to Align the Shoulder Line

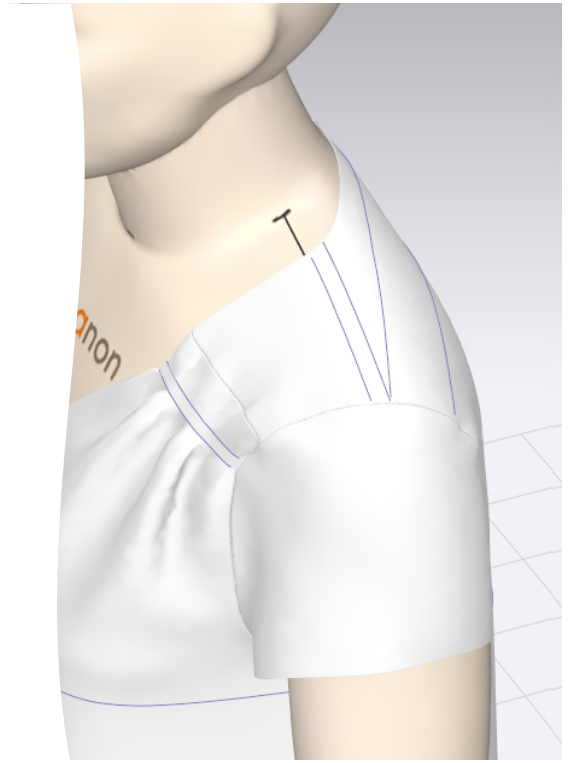
- Aligning the Shoulder Line with the Pinching Tool

Turn on Simulation and drag the garment to Align the Shoulder Line of the Pattern to the Shoulder Line of the Avatar.

1. Turn on Show 3D Baselines in the 3D Garment Display to make t he Baselines of Patterns visible.
2. To check the Shoulder Line of the body, change the Rendering S tyle of the garment to Transparent Surface.
3. Drag the 3D garment to align the Shoulder Line while Simulation is on.







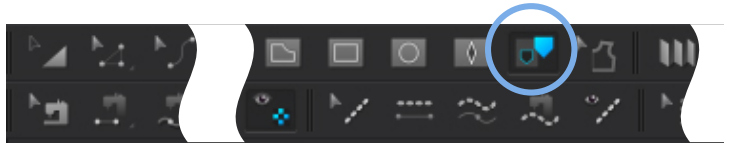
** The Shoulder Line of the Pattern and the body are easily shifted, so it is highly recommended to check them regularly.

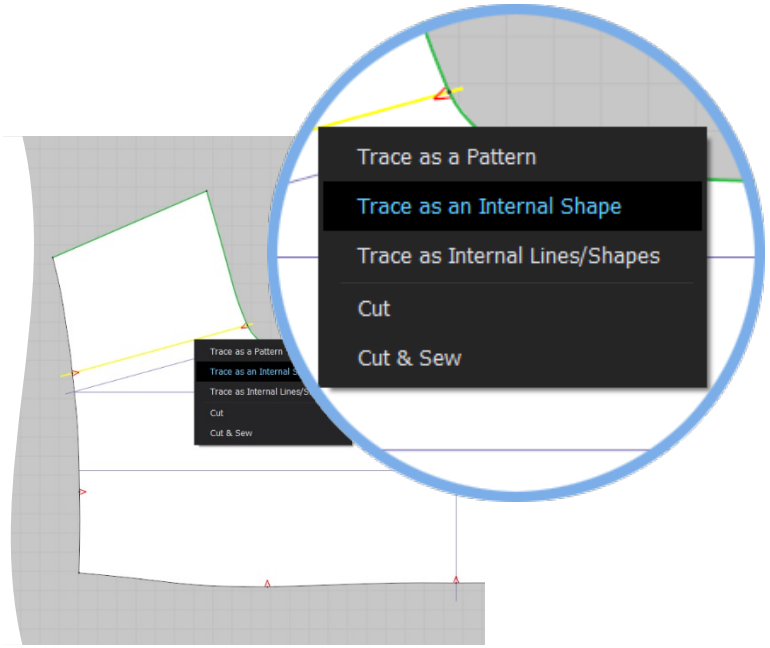
How to Align the Shoulder Line

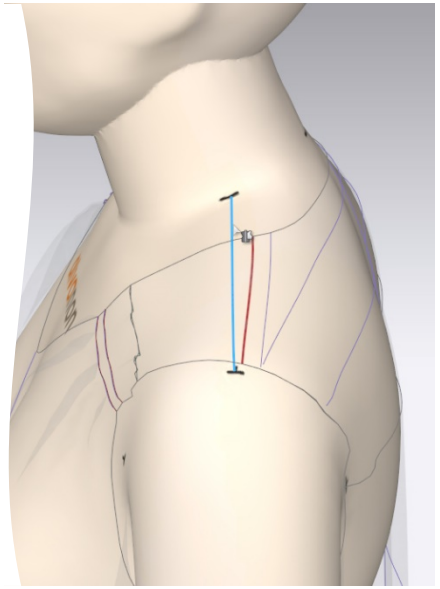
- Aligning the Shoulder Line with Avatar Tape

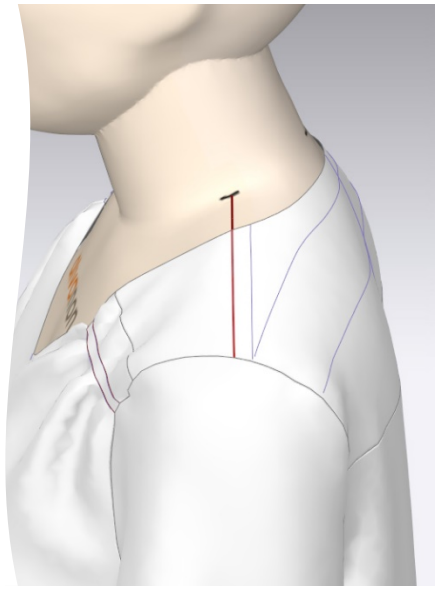
Attach the Pattern to Avatar Tape to Align the Shoulder Line.

Outlines and Internal Lines of Patterns can be attached to Avatar Tape.









If the Shoulder Line of the garment is marked as a Baseline, Trace the Baseline as an Internal Line

Select the Attach to Avatar Tape tool on the 3D Toolbar and click once on the Shoulder Line of the garment and the Shoulder Line of the body (Avatar)

** Separate the garment from the Avatar after Aligning the Shoulder Line with the Avatar Tape.

Importance of Applying Appropriate Fabrics

Garment silhouette will change based on the fabric.

When A fabric is applied

When B fabric is applied

HI-RES GARMENT TOOL

The final step for the 3D garment after construction has been completed

- Results

Ensure you use the Hi-Res Garment tool after completion of the garment to improve general quality (e.g. wrinkles and details) of the 3D garment.

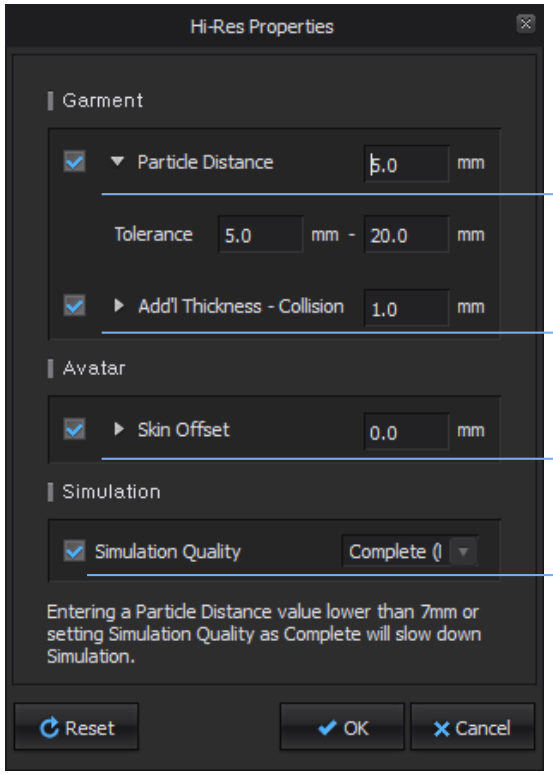
Before selecting Hi-Res Garment tool

After selecting Hi-Res Garment tool

The final step for the 3D garment after construction has been completed

- A description of each element.

Particle Distance, Add'l Thickness - Collision, Avatar's Skin Offset, and Simulation presets will be changed.



- **Particle Distance**
  - Particle Distance of all Patterns will be changed to the set value.
  - Default value is 5mm.
  - Patterns with the value in tolerance range will not be changed.
  - Lower values will express more realistic wrinkles of the garment.

- **Add'l Thickness - Collision**
  - Change all Patterns Add'l Thickness to the set value.
  - Default value is 1.0mm.
  - Patterns with the value in tolerance range will not be changed.

- **Skin Offset**
  - Change all Avatar's Skin Offset to the set value.
  - Default value is 0.0mm.

- **Simulation Quality**
  - The Complete (Nonlinear) Simulation preset shows more realistical ly accurate length and wrinkles of the 3D Garment.

** Since the Simulation speed decreases when the Simulation preset is changed to Complete (Nonli near), it is advised to change to the respective preset only when improving the 3D Garment quality.

HIGH QUALITY RENDER

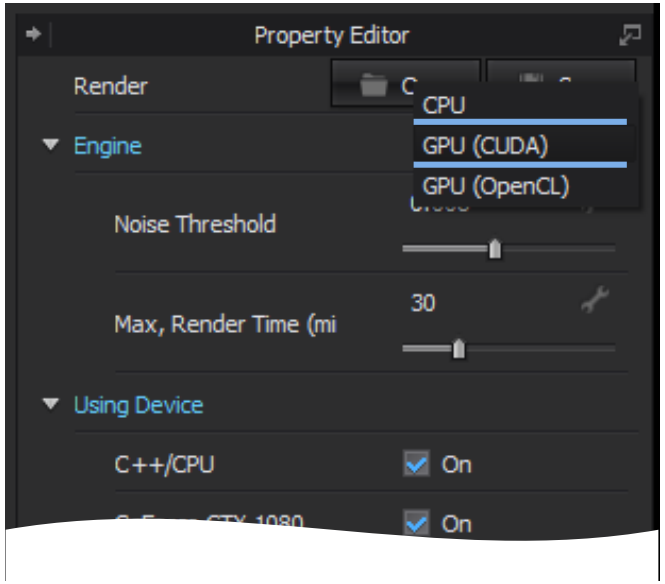
SELECT THE RENDER ENGINE : CPU VS GPU

Windows Ensure to choose the proper computer engine (CPU or GPU) for better Rendering performance.

Ensure to check the following conditions for accurate performance comparison of Render engines.

- Same garment
- Same camera view
- Same resolution

If all of the conditions above are satisfied, test the render on both the CPU and **GPU(CUDA)** settings.
Use the faster render engine.
(Render time is indicated by the numbers next to the Rendering image progress bar)



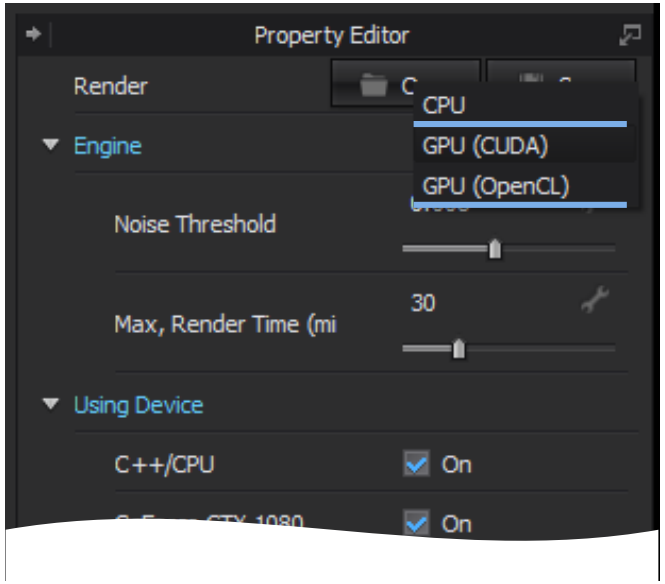
SELECT THE RENDER ENGINE : CPU VS GPU

Mac Ensure to choose the proper computer engine (CPU or GPU) for better Rendering performance.

Ensure to check the following conditions for accurate performance comparison of Render engines.

- Same garment
- Same camera view
- Same resolution

If all of the conditions above are satisfied, test the render on both the CPU and **GPU(Open GL)** settings.
Use the faster render engine.
(Render time is indicated by the numbers next to the Rendering image progress bar)



Light Intensity settings according to the Fabric's brightness

Adjust the Light Intensity according to the Fabric's brightness.

Depending on the brightness of the fabric, details of the rendered garment may not be visible. In this case, adjust the Light Intensity slightly.

For bright fabrics

Light Intensity 1

Light Intensity 0.8

For dark fabrics

Light Intensity 1

Light Intensity 2.5

Adjusting the direction of the lighting

If you want the front and back of your garments to have the same brightness, adjust the Light Angle.

Default Light Angle

Default Light Angle

Set Light Angle to 180

** Turntable images / videos do not require the change of the Light Angle, as the camera view and lights rotate automatically.

Rendering speed according to Render's resolution

Comparison of the speed and quality differences according to the Render resolution settings

SPEED

NVIDIA GeForce GTX1080

900x1080

40S

A4(2480x3508)

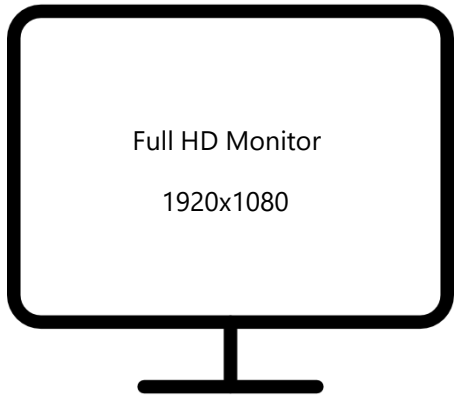
4M 50S

Continued on next page

Rendering speed according to Render's resolution

Comparison of the speed and quality differences according to the Render resolution settings
Guidelines for recommended resolution

SIZE



900x1080

A4(2480X3508)

Continued on next page

Rendering speed according to Render's resolution

Guidelines for recommended resolution

Recommended Render resolution

The following resolution is highly recommended for speed and quality efficiency.

Width (Pixels): 900
(adjustable according to the width of the garment)

Height (Pixels): 1080
(Since the vertical resolution of a monitor is 1080, do not adjust this value)

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