GARMENT FIT MAPS

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GARMENT FIT MAPS

OVERVIEW

Use Garment Fit Maps to check a garment's fit.

3D Window > Toggle Bar > hover over the 5th icon > single-click to activate / deactivate a map

TIP! Only one map can be activated at a time
TIP! When clicking on a point of a garment, the measurement of it appears

Stress Map (Alt+6) displays the force per unit area in kPa applied to a garment by external stress.
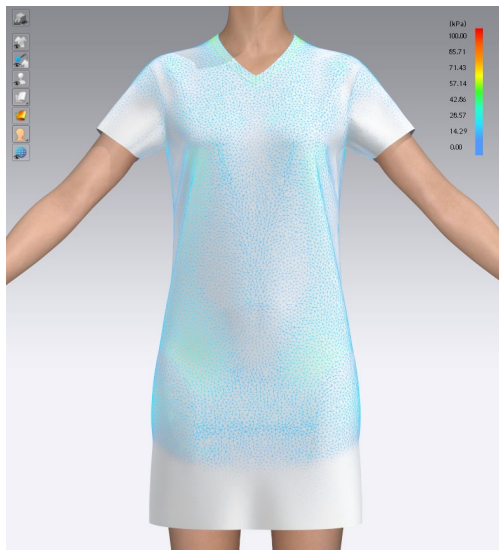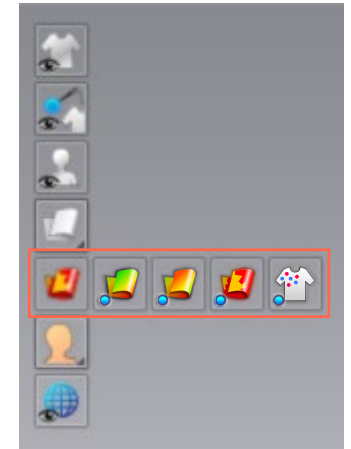
Strain Map (Alt+7) displays how much a garment is stretched, in percentage relative to a non-stretched state.
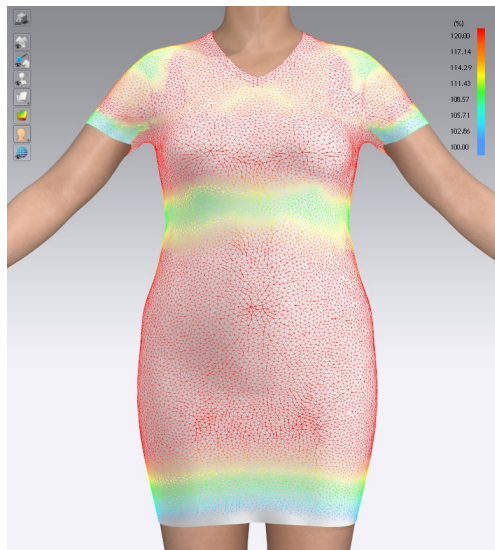
Fit Map (Alt+8) displays how many sections of the garment have reached the limit strain of the fabric on the avatar.
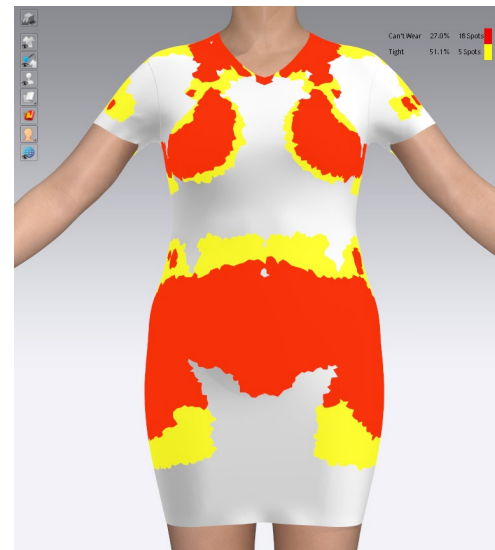
Show Pressure Points displays contact points between the avatar and the garment.

Stress Map

Strain Map

Fit Map

Show Pressure Points

The external stress causes a garment to distort. As a result, the garment itself exerts pressure (stress). The Stress Map measures it as a force per unit area in kPa.

Pascal (Pa) / Kilopascal (kPa) is a pressure unit that describes the tear resistance. The maximum stress a material can withstand is represented as a unit of pressure when it is stretched before the fabric rips; thus, the part above the allowable stress ultimately tears.
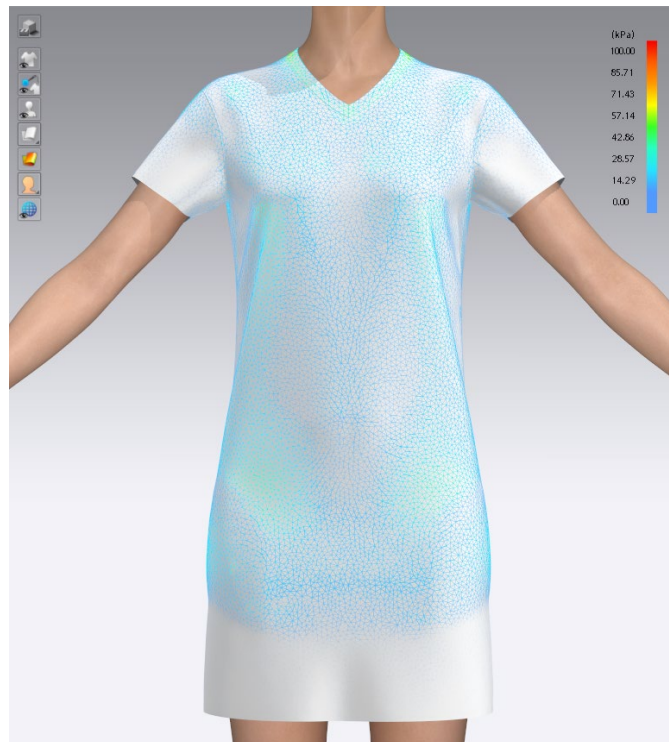
The Stress Map appears in eight colors. Blue indicates zero stress (0.00kPa) while red indicates the strongest stress (100kPa). Numbers in between are expressed as a gradation of colors.

Simply said, Stress Map shows **how much pressure is in the fabric per section resulting from a tight-fitting garment.**
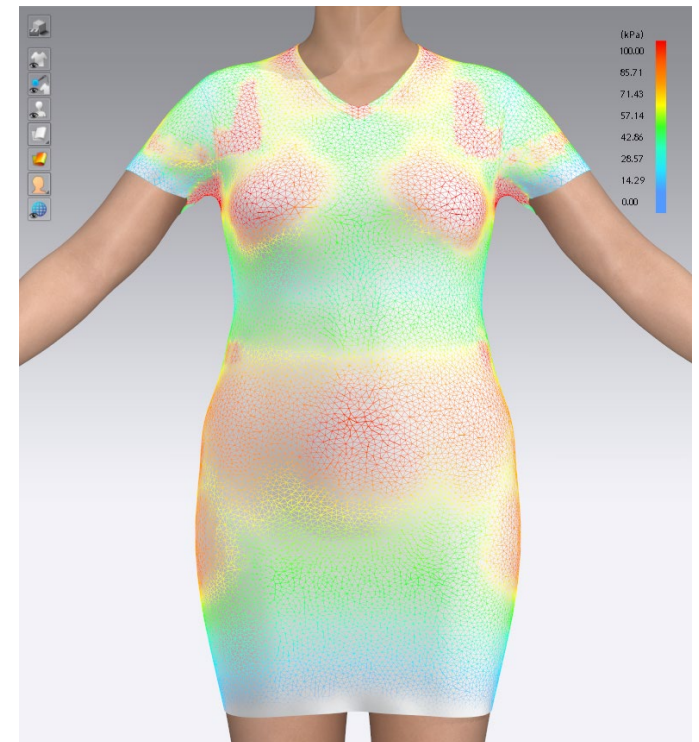
TIP! When clicking on a point of a garment, the kPa value of this exact location appears.

Fabric: Jersey / Size: Default

Fabric: Leather / Size: Default

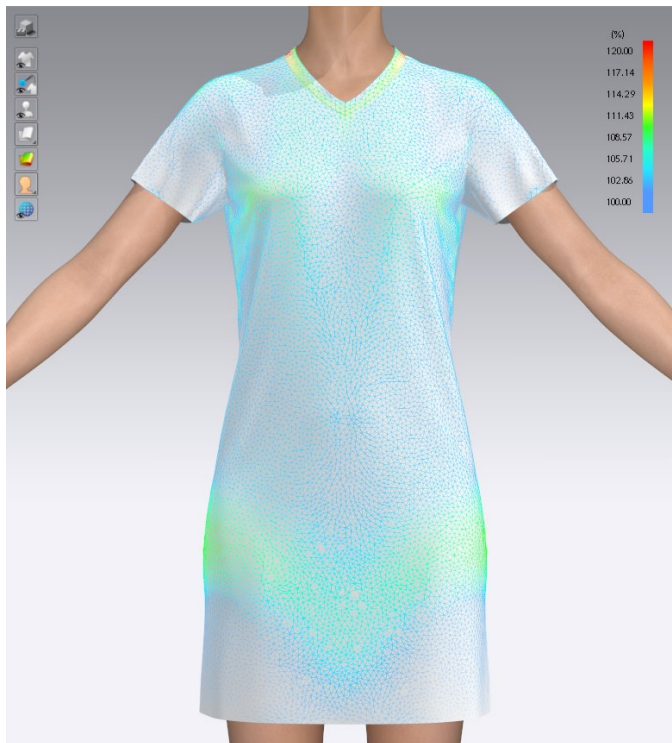Fabric: Leather / Bust Circumference: 1100 mm

STRAIN MAP

The external stress causes a garment to distort. As a result, the garment is stretched. The Strain Map measures how far it is stretched to its capacity.

The Strain Map appears in eight colors. Blue indicates 100% of the distortion rate (no distortion), while red indicates 120% of the distortion rate. Numbers in between are expressed as a gradation of colors.

Simply said, the Strain Map shows **how much the garment is stretched when being worn.**

TIP! When clicking on a point of a garment, the percentage of distortion of this exact location appears.

Fabric: Jersey / Size: Default
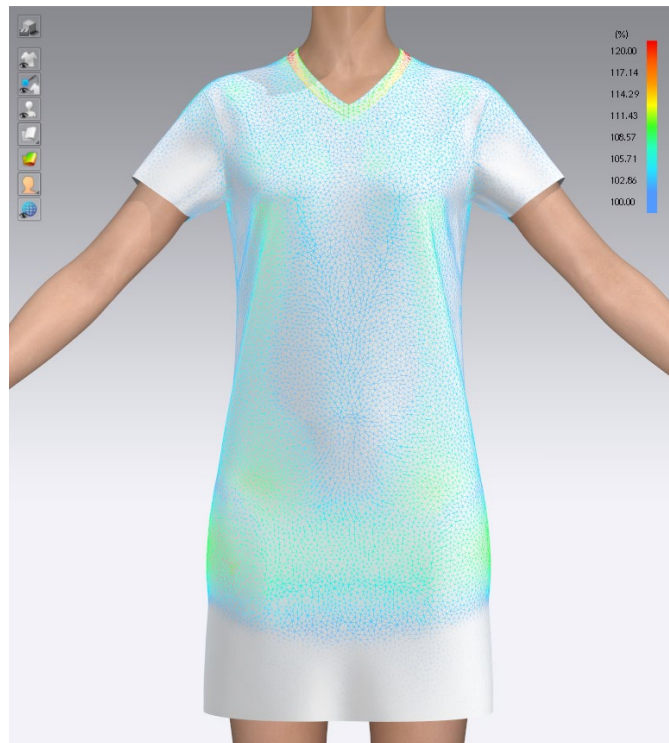
Fabric: Leather / Size: Default

Fabric: Leather / Bust Circumference: 1100 mm

FIT MAP

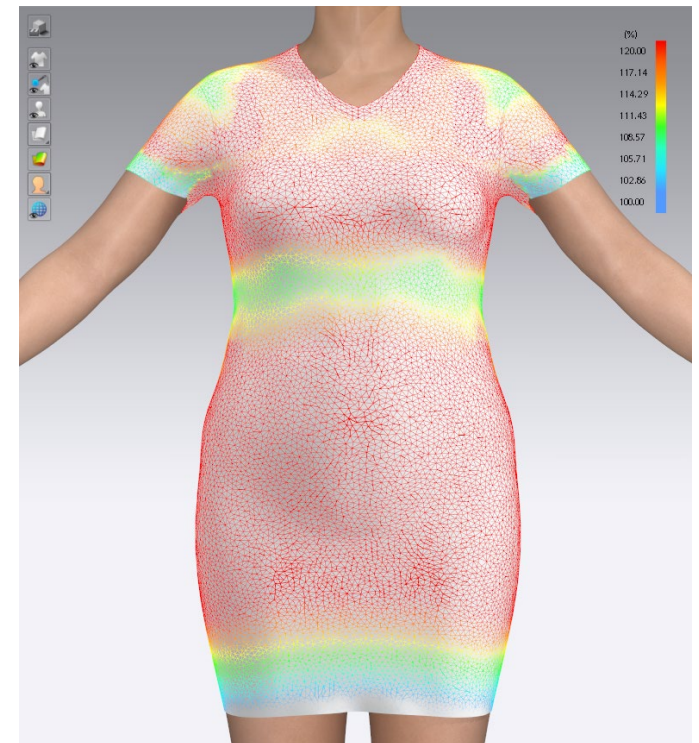Each fabric has a maximum distortion. This value is determined by stretch / shear / stiffness in the physical properties of the fabric. The value of the Fit Map is a percentage of how much the fabric has stretched relative to this maximum distortion. 100%: Fabric is stretched to the maximum distortion. 0%: Fabric is not stretched.

Red (Can't Wear) indicates more than 100%, yellow (Tight) - more than 80%, and white - less than 80% of the maximum distortion rate. The table in the top right corner shows how much (in percentage) of the total garment has Can't Wear / Tight Fit spots across the garment.

Simply said, the Fit Map shows **how many sections of the garment have reached the limit strain of the fabric.**

TIP! Fit Map is calculated for the areas in which fabric and avatar are in contact.
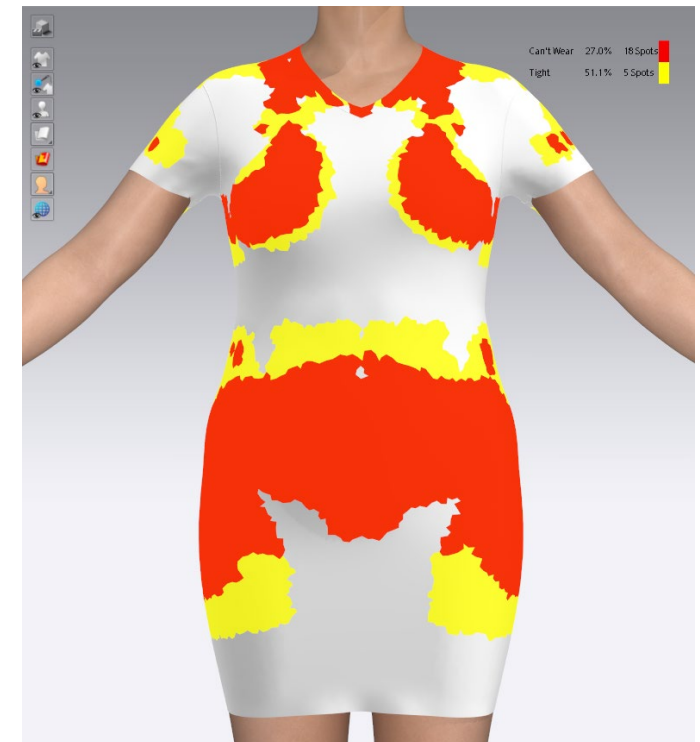
TIP! When clicking on a point of a garment, the percentage of relative distortion of this exact location appears.

Fabric: Jersey / Size: Default
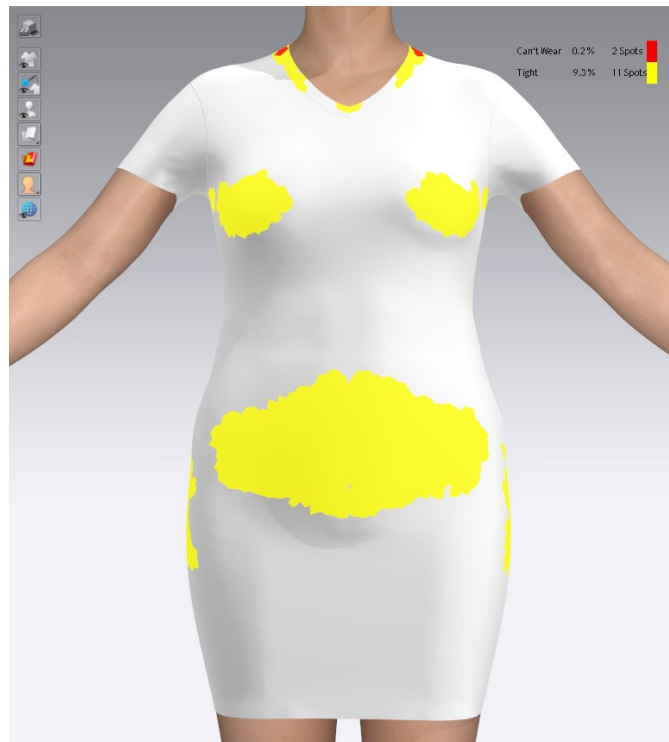
Fabric: Jersey / Bust Circumference: 1100 mm

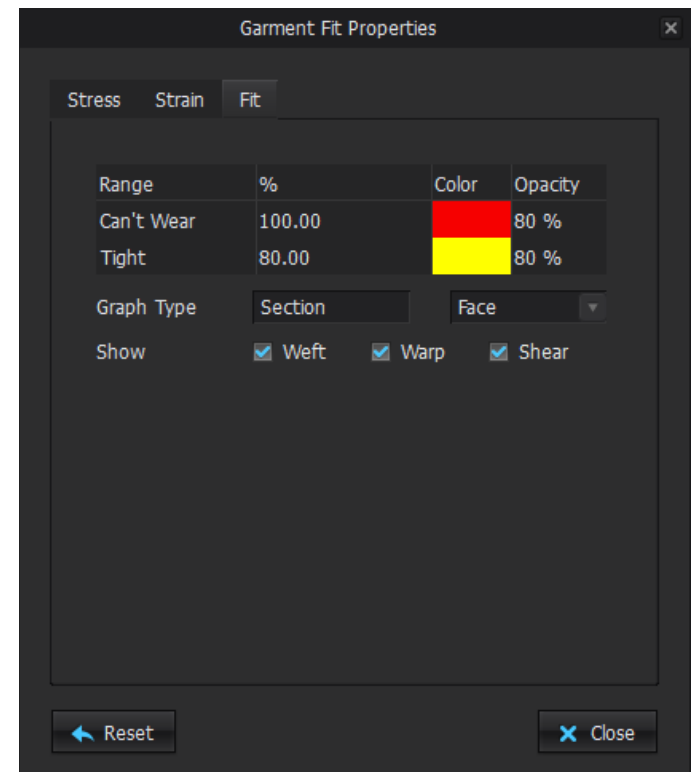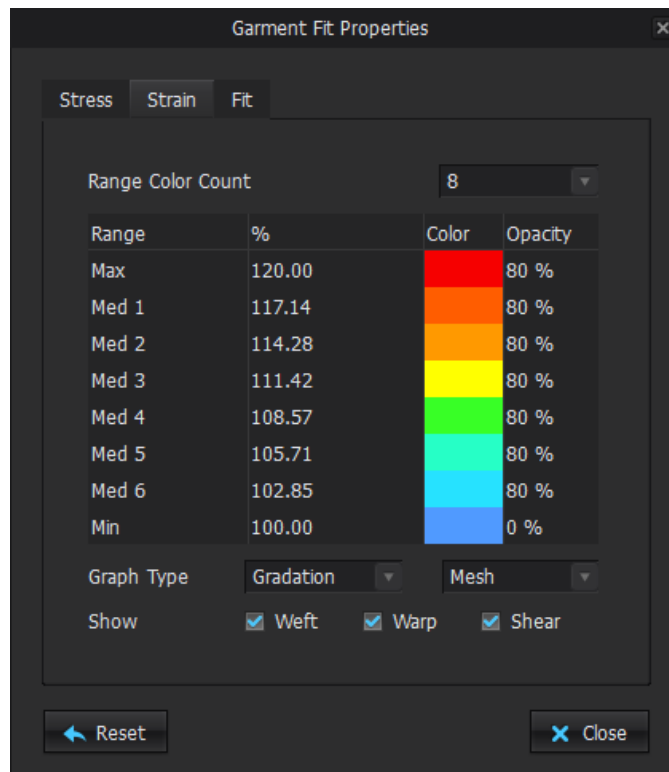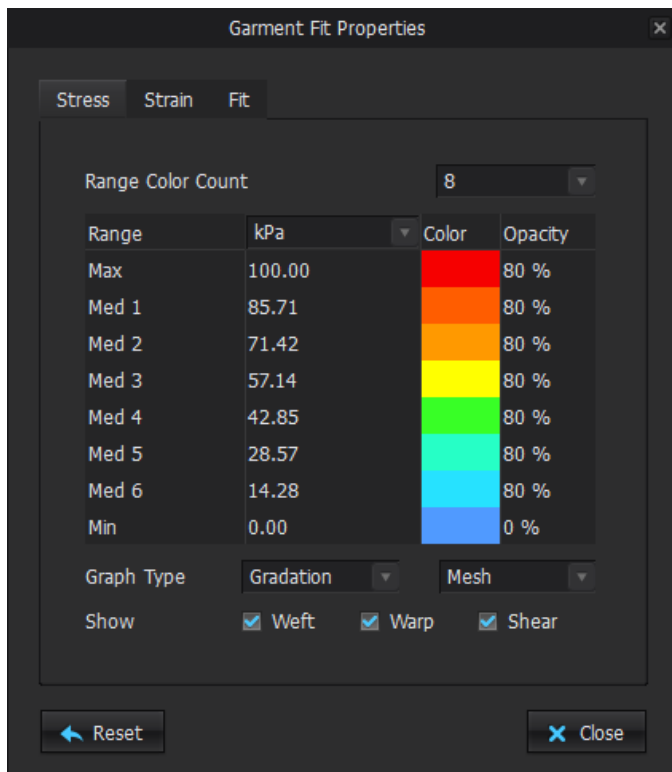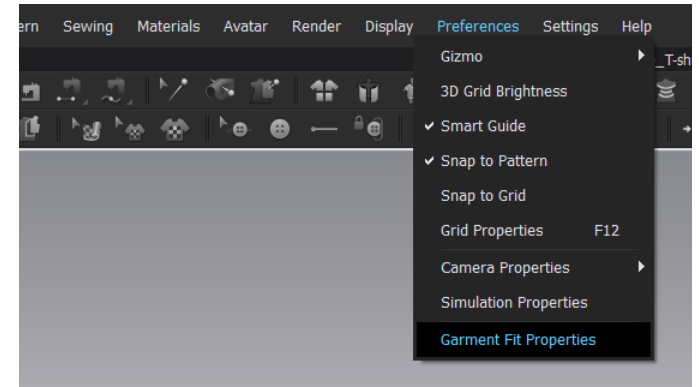Fabric: Leather / Bust Circumference: 1100 mm

GARMENT FIT PROPERTIES

Change the range, unit, and appearance of Garment Fit Maps.

        Main Menu > Preferences > Garment Fit Properties > The Garment Fit Properties window appears.

        TIP! Try to raise the percentage value for very stretchy fabrics and to lower percentage value for non-stretch / low-stretch fabrics to get more accurate results. It applies to all three Garment Fit Maps.

Learn more about Garment Fit Properties.

Stress

Range	kPa	Color	Opacity
Max	100.00		80 %
Med 1	85.71		80 %
Med 2	71.42		80 %
Med 3	57.14		80 %
Med 4	42.85		80 %
Med 5	28.57		80 %
Med 6	14.28		80 %
Min	0.00		0 %

Range Color Count: 8

Graph Type: Gradation / Mesh

Show: ☑ Weft ☑ Warp ☑ Shear

Strain

Range	%	Color	Opacity
Max	120.00		80 %
Med 1	117.14		80 %
Med 2	114.28		80 %
Med 3	111.42		80 %
Med 4	108.57		80 %
Med 5	105.71		80 %
Med 6	102.85		80 %
Min	100.00		0 %

Range Color Count: 8

Graph Type: Gradation / Mesh

Show: ☑ Weft ☑ Warp ☑ Shear

Fit

Range	%	Color	Opacity
Can't Wear	100.00		80 %
Tight	80.00		80 %

Graph Type: Section / Face

Show: ☑ Weft ☑ Warp ☑ Shear

WORKFLOW

Check the following before using Garment Fitting Maps:

- **Fabric**. Apply the fabric that will be used on the real garment. It is very important to properly measure physical properties of a fabric with a Fabric Kit to achieve an accurate virtual fitting. In case of stretchy fabrics, take a range of stretch test distance that covers the amount of stretching you predict to have in the garment.

- **Avatar**. Use an avatar in the right size. Adjust an avatar size according to your measurement chart or fitting model in the Avatar Editor. Main Menu > Avatar > Avatar Editor > Avatar Size

- **Pose**. Choose an avatar's pose according to your style. Library > Avatar > choose the correct avatar version > Pose

- **High Resolution**. Use High Resolution and simulate after. 3D Tool Bar > High-Res Garment

- **Simulation**. Change the Simulation Mode to Fitting (Accurate Fabric) in CLO 5.2 or (Complete Nonlinear) in CLO 5.1 and below. 3D Tool Bar > Simulation > hold down the left mouse button in order to access a dropdown menu > Fitting (Accurate Fabric).

- Simulate every time after you change a design / fabric.

Learn more about physical properties of fabrics.

Learn more about Simulation.

Learn more about the Avatar Editor.

EXAMPLE WORKFLOW

We offer this **possible workflow** and we would be glad to get your feedback or learn more about your way to do fitting in CLO.

STEP 1

Strain Map

Raise percentage value for very stretchy fabrics and low percentage value for non-stretch / low-stretch fabrics in the Garment Fit Properties to get more accurate results (see the pictures on the right).

Blue (100%) shows areas where fabric is not stretched, while red shows the most stretched areas. Red areas in the Strain Map are not necessarily a critical issue, but they have to be investigated further by using the Stress Map.
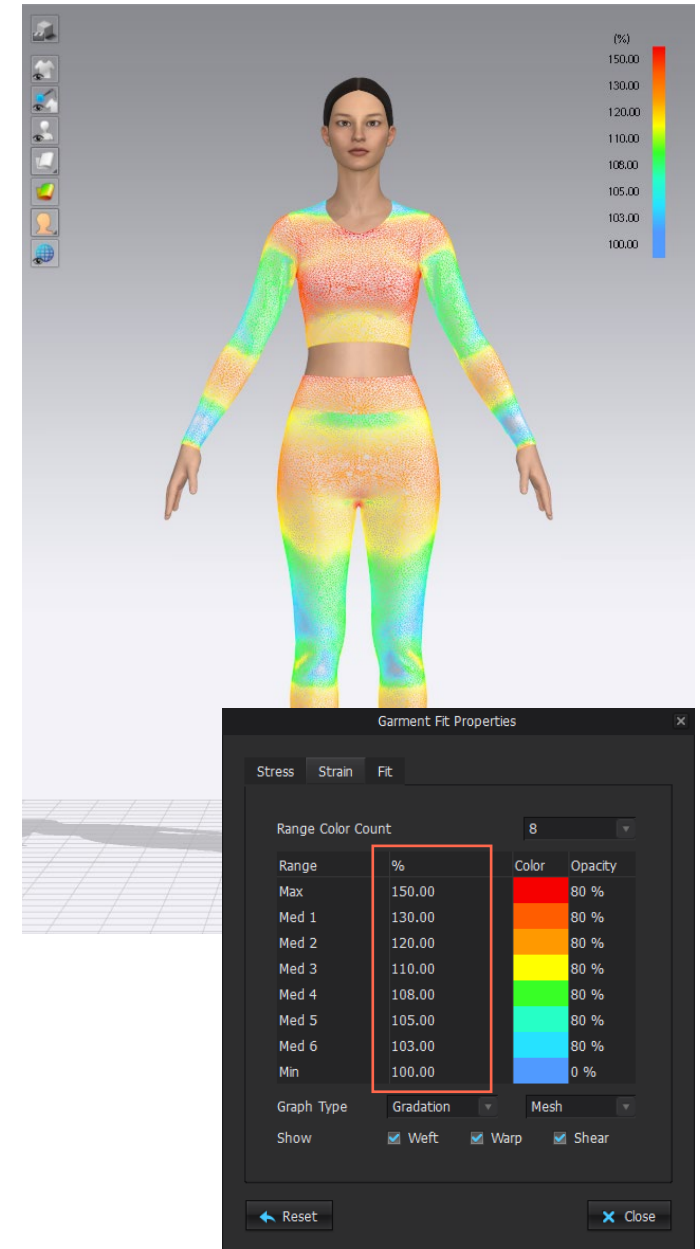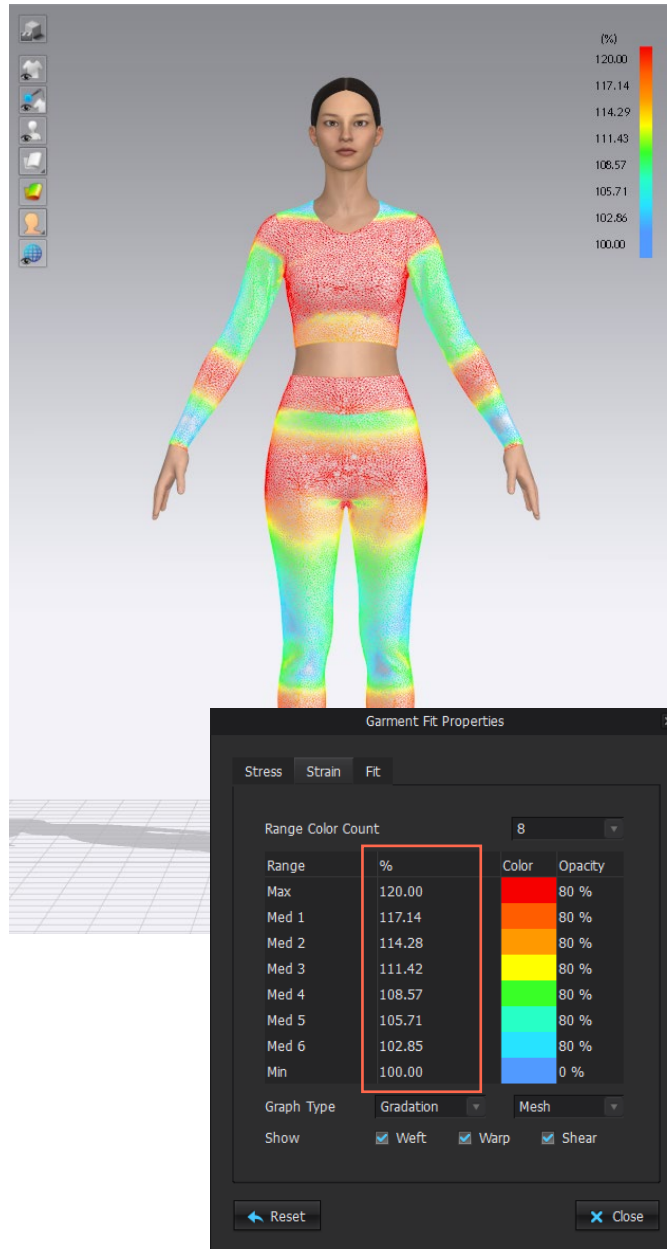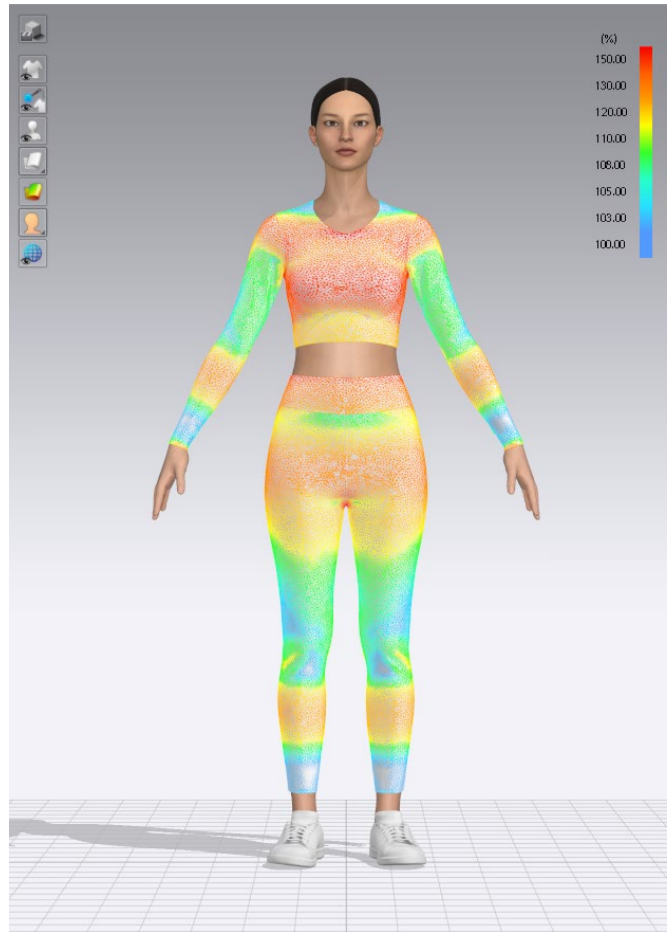
STEP 2

Stress Map

Low-stretch / non-stretch fabrics: If a garment shows a low stretch value (blue / green) in the Strain Map [%] and a high pressure value (red / orange) in the Stress Map [kPa], the wearer would be uncomfortable.

Stretchy fabrics: A garment will show a high value in the Strain Map (red / orange) and low pressure value in the Stress Map. This means that the garment is indeed tight and tight-fitting, but the fabric has enough stretch and the wearer of the garment is not subjected to uncomfortable pressure.

Compression sportswear or underwear: The fabric areas with a high pressure should be shown as red in the Stress Map. By clicking on a point of a garment, check the exact amount of pressure to understand if the compression is strong enough / too strong.

TIP! Note that it is pressure inside the fabric and not on the body, since all Garment Fit Maps are calculated for the garment and not the avatar.

STEP 1: Strain Map (adjusted) / Fabric: Jersey
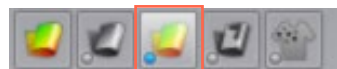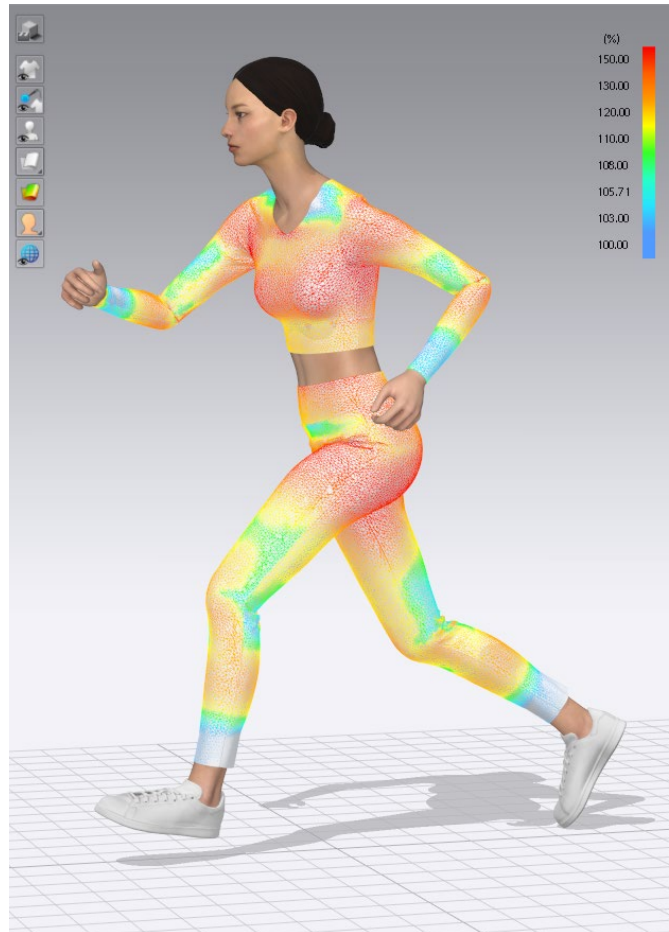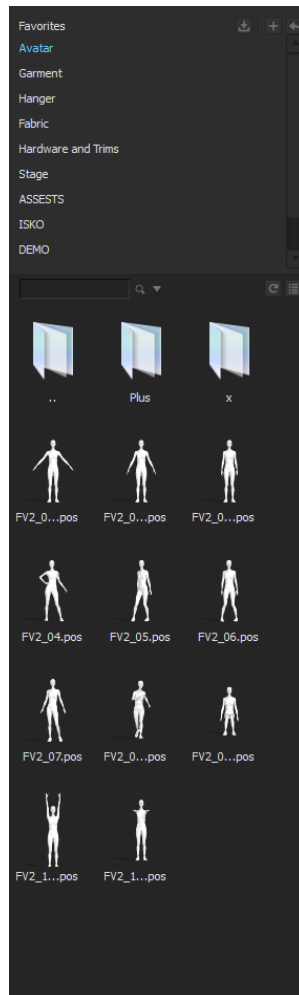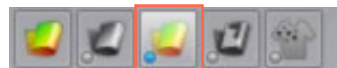
STEP 2: Stress Map / Fabric: Jersey

Try different poses such as standing, sitting, or running.

Library > Avatar > choose the avatar version > Pose

TIP! Create your own poses. Learn more about custom poses.

Favorites
Avatar
Garment
Hanger
Fabric
Hardware and Trims
Stage
ASSESTS
ISKO
DEMO

.. | Plus | x

FV2_0...pos | FV2_0...pos | FV2_0...pos
FV2_04.pos | FV2_05.pos | FV2_06.pos
FV2_07.pos | FV2_0...pos | FV2_0...pos
FV2_1...pos | FV2_1...pos

Strain Map (adjusted) / Fabric: Jersey

Stress Map / Fabric: Jersey

HOW TO EXPORT GARMENT FIT MAPS

Export the Garment Fit Maps' information as a Snapshot of the 3D Window for a cleaner look or simply make a screenshot of the 3D Window to also include the scale.

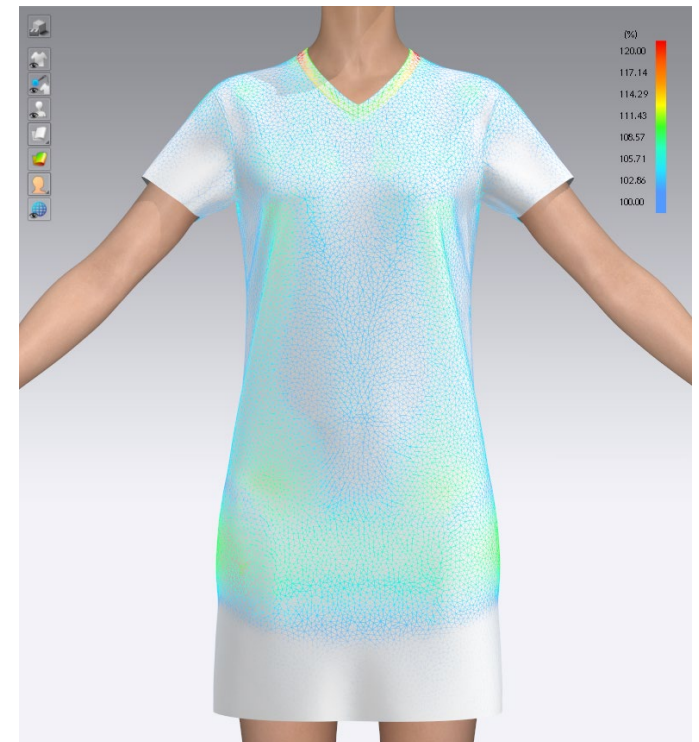Main Menu > File > Snapshot > 3D Window (F10)

TIP! Change the view angle to show different sides or details and to create multiple views.

TIP! Hide avatar.

3D Toggle Bar > Avatar Display > Show Avatar (Shift+A)
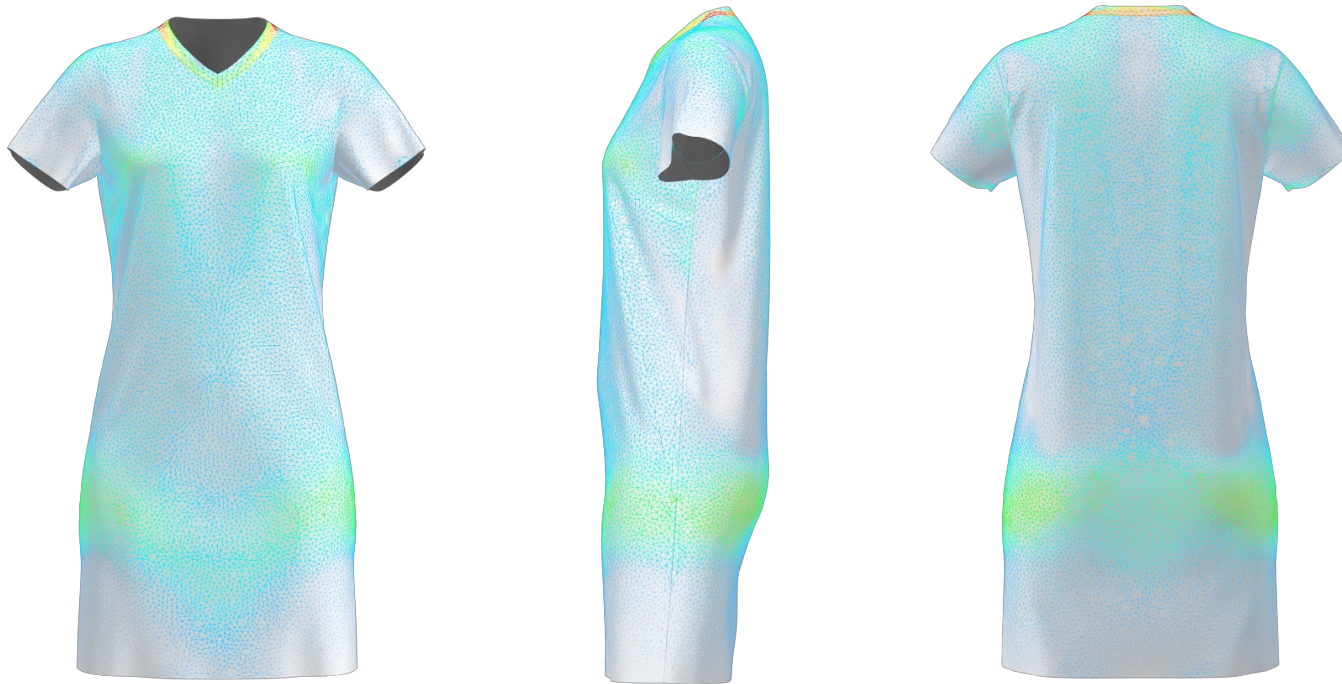
Snapshot. Multiview. Hide Avatar

Screenshot. Strain Map

THANK YOU!