KOHL'S

Material Digitization Standards

Technology Standard

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OUTPUT Material Color

Follow these guidelines color of physical swatches being scanned and tested.

The color of the material chosen to digitize should be a **SOLID mid tone color** or mid tone grey to allow for accurate changes in the 3D software. See below for examples of ideal colors.

*(IF POSSIBLE) DO **NOT** USE: prints, dark colors (i.e. black, navy), light colors (i.e. white, khaki, ivory), saturated colors (i.e. magenta, neons, yellow)*

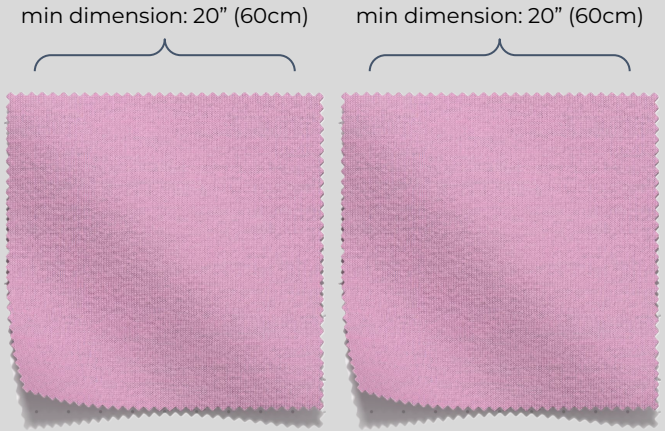
Visual examples of a few ideal colors to digitize

Examples Of Good V. Bad Swatches

OUTPUT Physical Fabric Swatch Specifications

Follow these specifications for physical swatches being scanned and tested:

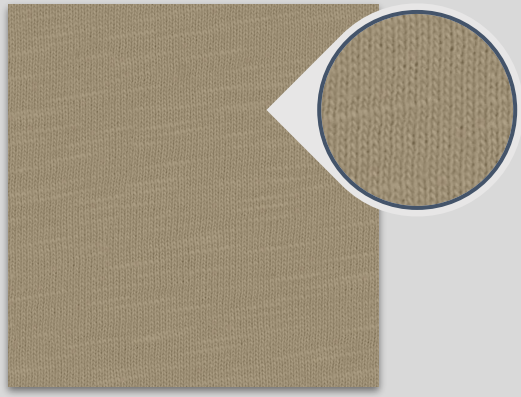
- **Minimum Fabric Dimensions:** For testing physics fabric, **two** swatches, minimum of **20” x 20” (60 cm x 60 cm)** in size are required. For fabric texture or pattern, the full repeat in all directions must be present in the scan so the print can be repeated correctly in 3D. (please avoid printed or embroidered fabric where possible). *In the event that the material is being scanned for visual purposes only, minimum size is 9” x 12” (22cm x 30cm).*
- **Fabric Handling:** Fabric must be the final treated fabric. Ensure fabric has no bows or defects. Fabric must lay flat inside of scanner.
- **Fabric must be clean and free of:** wrinkles, stains, discoloration, fading, tears, folds, lint/hair/dust



OUTPUT Scan Resolution & Quality

Follow these guidelines for scan resolution and quality of digital fabrics.

- **Minimum Scan Resolution:**
  9”x 12” (22cm x 30cm) at 600 ppi/dpi (can be larger to capture full repeat)
- Scan result must not be blurry, fabric weave/knit details should be clear and recognizable
- **Lighting** across the scan must be uniform, the sample must be lit evenly. No shadows should be apparent on the scan.
- Scan should be **color accurate**, scanner must be properly calibrated according to the scanner manufacturers recommendations.



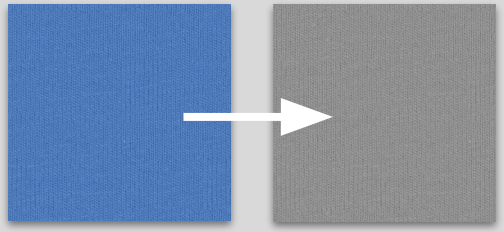
Example of Correctly Scanned Fabric Surface Texture

OUTPUT Diffuse & Texture Map

Follow these guidelines for diffuse and texture maps:

All diffuse/texture maps in digitized materials should be **neutralized** (fully desaturated) and average close to 50% grey (RGB Values: R 128, G 128, B 128 | HEX: #808080) while still retaining original texture.

*See neutralization instructions in **Appendix C** if your team is not familiar with this process.*



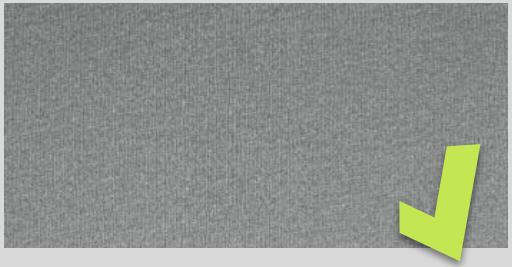
Original Scan Neutralized

OUTPUT Fabric Repeat

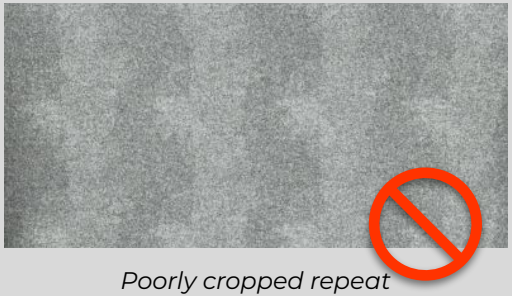
Follow these guidelines for fabric repeats:

Material must be able to cleanly tile and appear seamless when applied in 3D. See example below of correctly tiled repeats versus incorrectly tiled. Any method is acceptable for creating seamless repeats, as long as it achieves the equivalent result.

*See **Appendix B** for help creating seamless repeats in photoshop.*



Clean/Seamless fabric repeat



Poorly cropped repeat

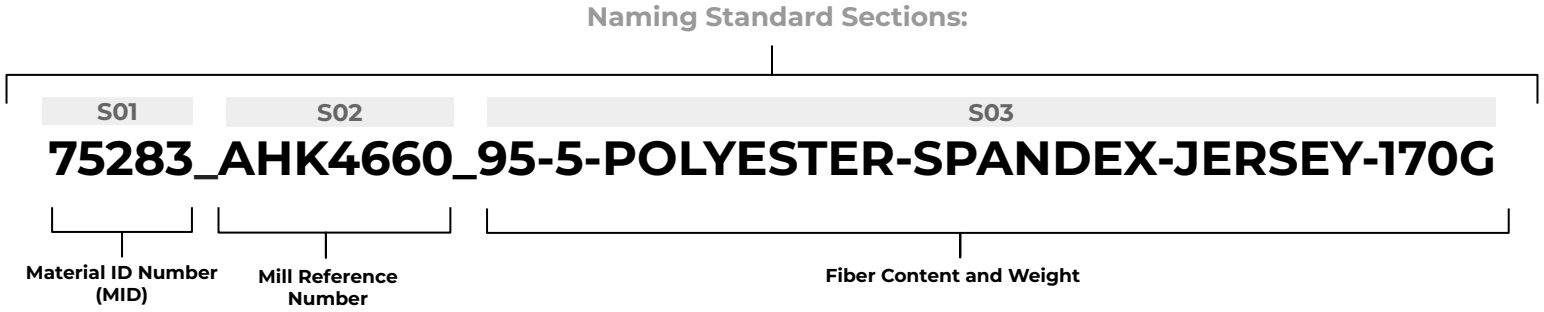
OUTPUT Compare Physical and Digital Fabric

Follow these guidelines for validating drape and transparency between digital and physical fabrics:

The digital fabric must undergo a side by side comparison of physical and digital fabric versions on **same size** cylinder or sphere. Material should have a consistent drape and number of darts.

PHYSICAL **DIGITAL**

OUTPUT Naming Convention



Content

The name is comprised of:

- 3 sections, separated by underscores
  - ***Section 01 (S01)*** Material ID Number (MID), the ID number given to each fabric by Kohl's
  - ***Section 02 (S02)*** Mill Reference Number, the ID number issued by the mill
  - ***Section 03 (S03)*** Fiber content of fabric and weight separated by dashes. NOTE! Do not use other characters such as "%" or "/"

KOHL'S

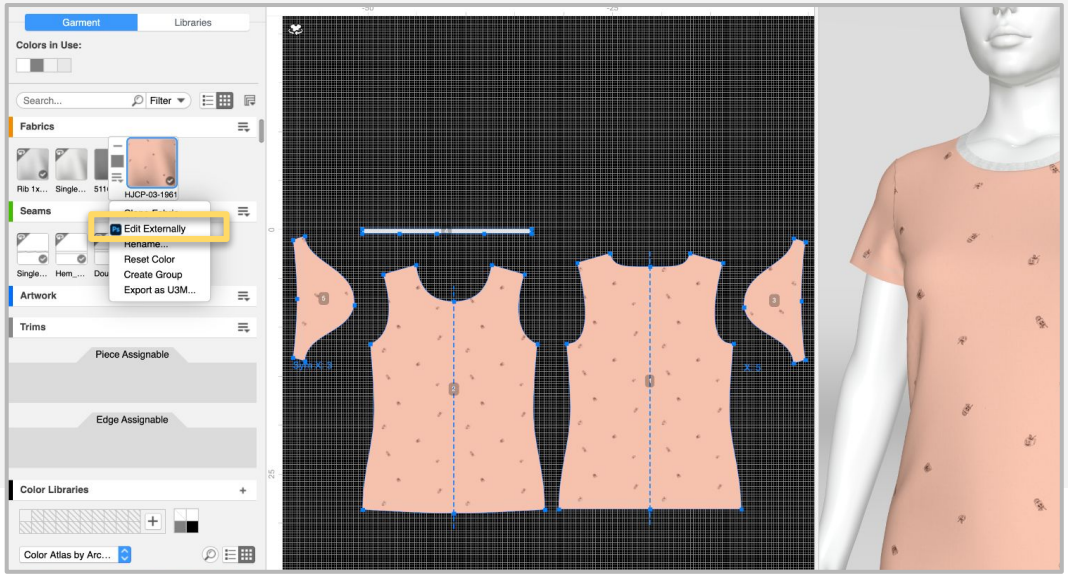
DIGITAL + PRODUCT CREATION

APPENDIX B Making Clean Repeats | Removing Patterns

NOTE! This step-by-step tutorial requires the following software:

- *Adobe Photoshop*
- *V-Stitcher by Browzwear*

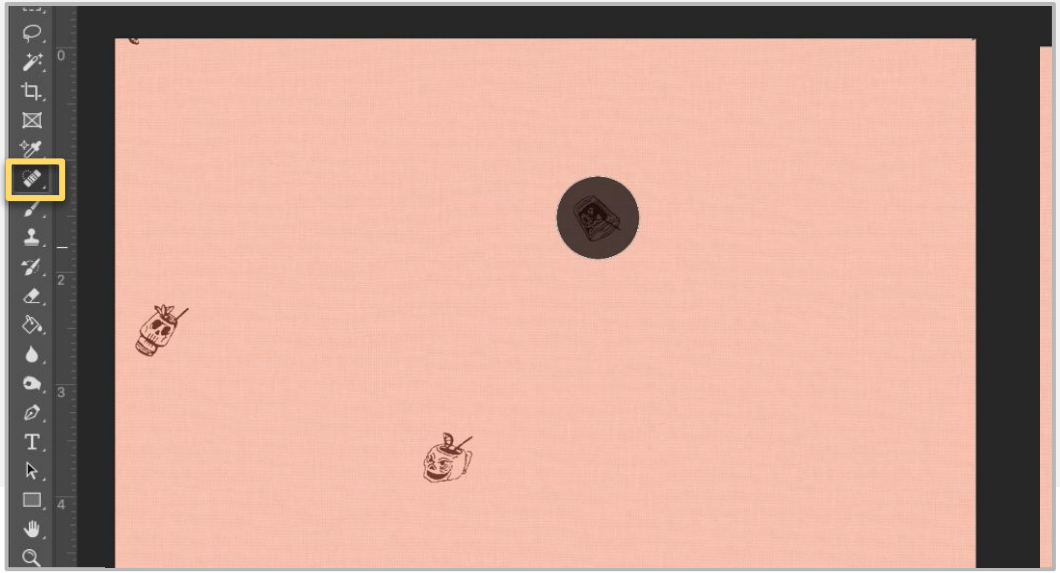
1. Add the .u3m file to edit into Vstitcher
2. Expand the fabric options and select “Edit Externally”



APPENDIX B Making Clean Repeats | Removing Patterns *(Cont'd.)*

3. In Photoshop, use the **spot healing** tool to erase prints or blemishes on the diffuse map

   note *do not edit anything touching the edges of the print in this stage*



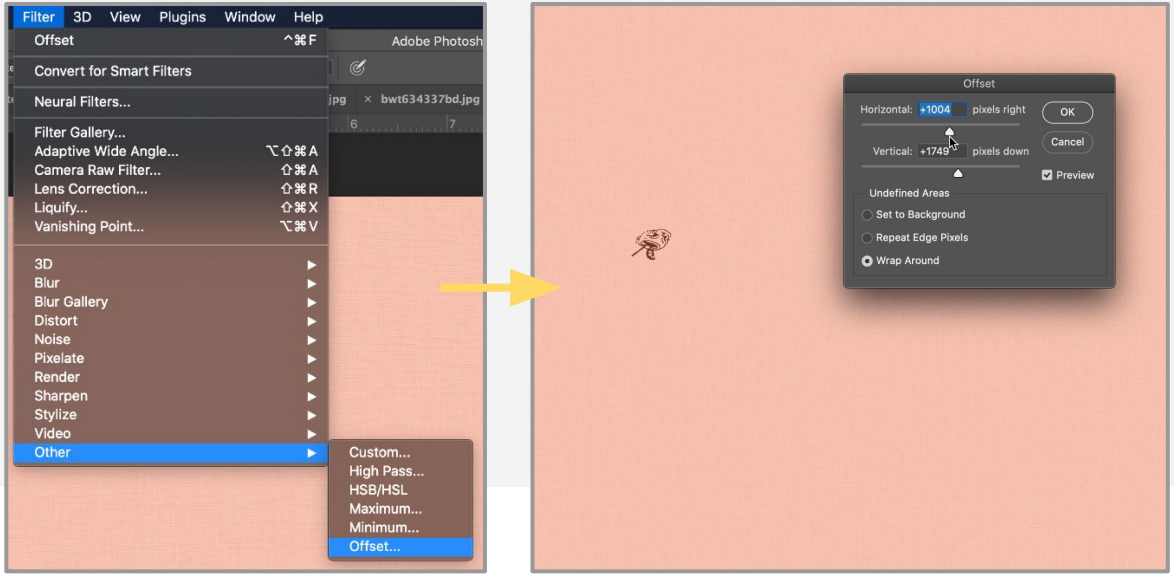
APPENDIX B Making Clean Repeats | Removing Patterns *(Cont'd.)*

4. Offset the pattern through **Filter > Other > Offset**

5. Move the sliders to center any clipping motifs, then hit OK

   note *save the values to any changes you make as you will need to do the same offset to the normal map*

6. Neutralize color and flatten before saving



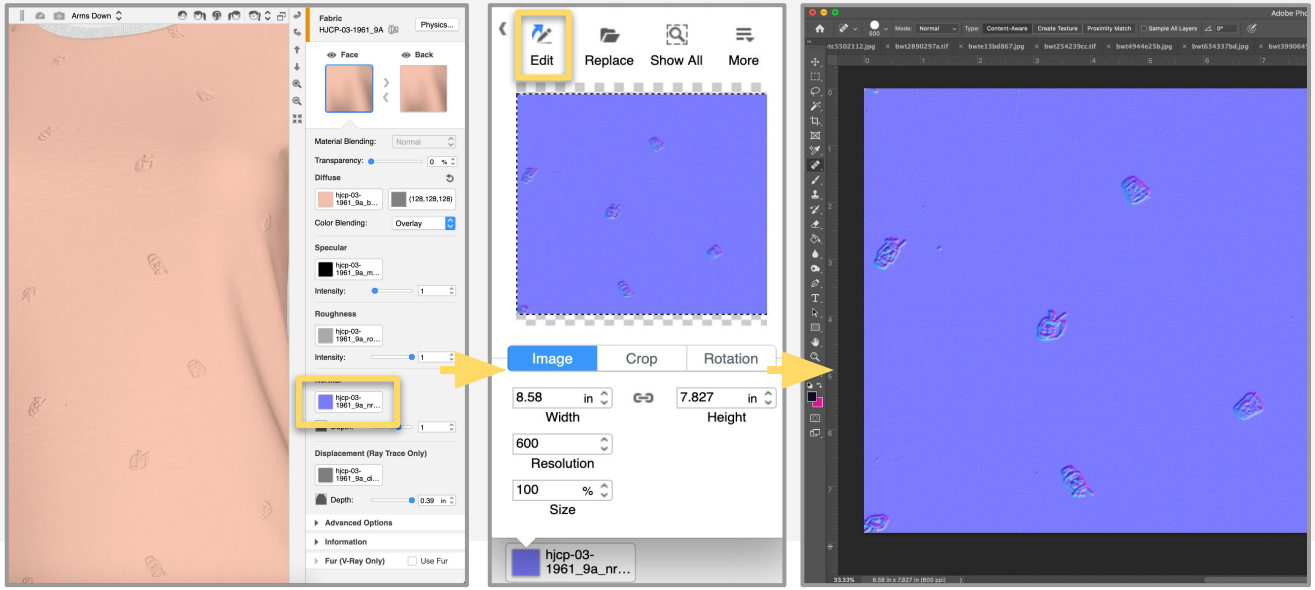
APPENDIX B Making Clean Repeats | Removing Patterns *(Cont'd.)*

7. In Vstitcher, click on the now edited fabric to reveal properties on the right contextual menu

8. Click on the **Normal map** image and click **Edit**

9. Make the same edits with the healing brush tool and offsetting with the **same values** as the **diffuse map**

   This step may be optional if the edits are more minor than this example



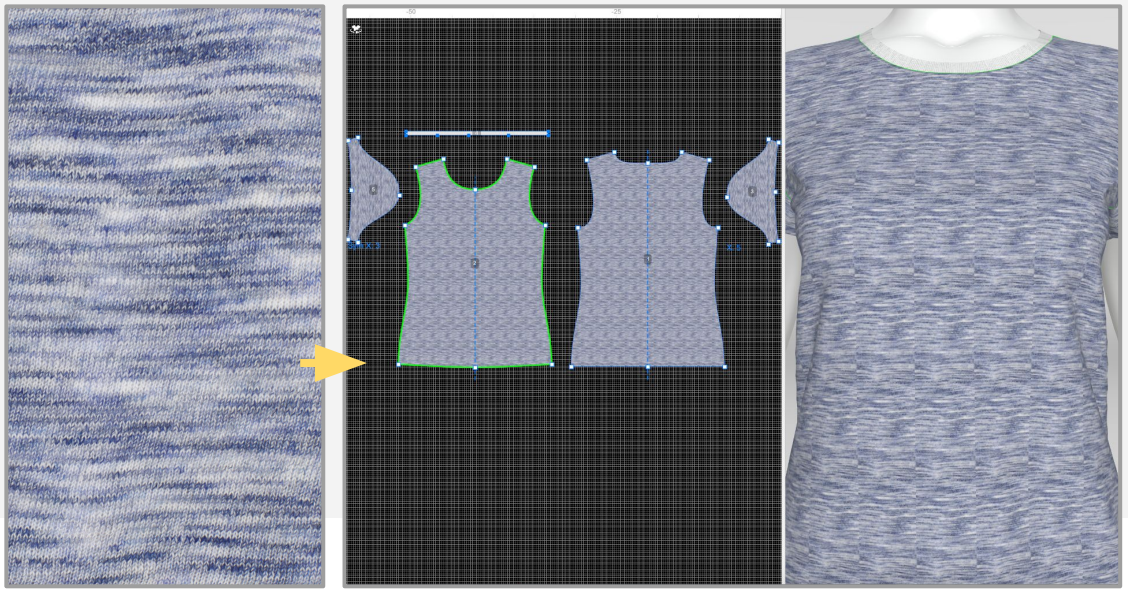
APPENDIX B Making Clean Repeats | Heathers

NOTE! This step-by-step tutorial requires the following software:

- *Adobe Photoshop*
- *V-Stitcher by Browzwear*

1. In Vstitcher, add the scanned heather as a diffuse map on a similar fabric

2. If it is not a clean repeat, you will see stark lines on the garment



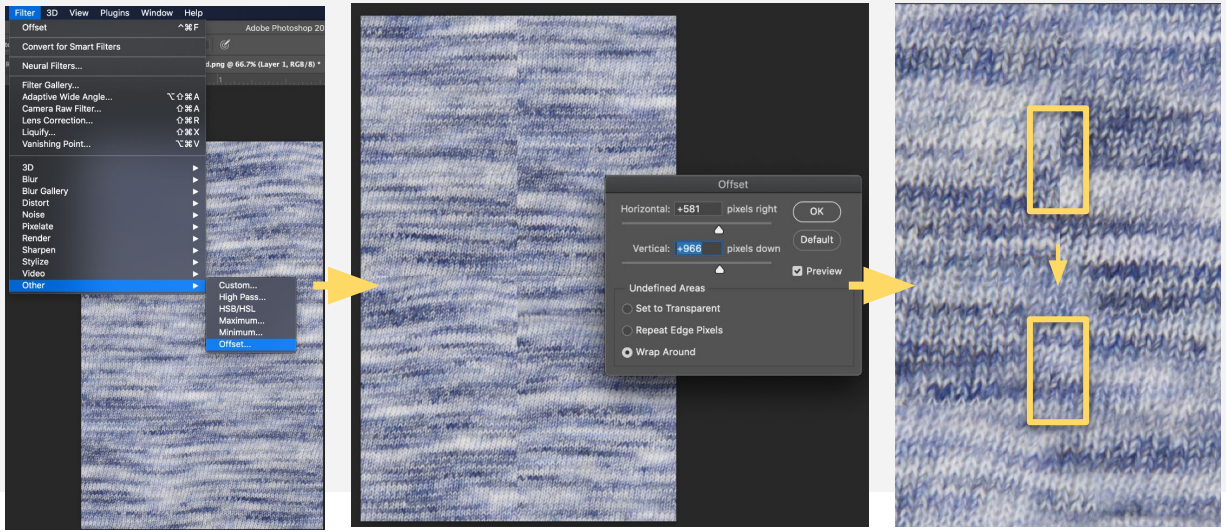
APPENDIX B Making Clean Repeats | Heathers *(Cont'd)*

3. Offset the pattern through **Filter > Other > Offset**

4. Move the sliders to center the edges, then hit OK

5. Using the clone pattern and spot healing tool, blend the edges of the scan

   You may have to offset the pattern several times to obscure all of the scanned edges

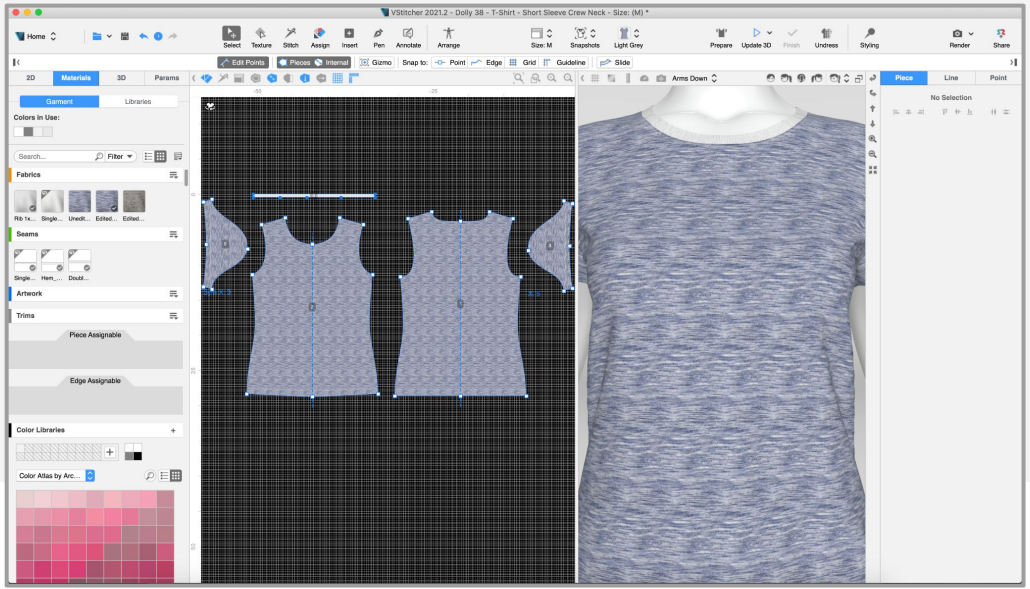


APPENDIX B Making Clean Repeats | Heathers *(Cont'd)*

6. Replace the original diffuse map with the new repeat

note *Unless you click "edit externally" on the diffuse mapr, edits made in photoshop will not be linked and will have to be uploaded as new diffuse maps*

The repeat is now seamless, but there are still noticeable tracking

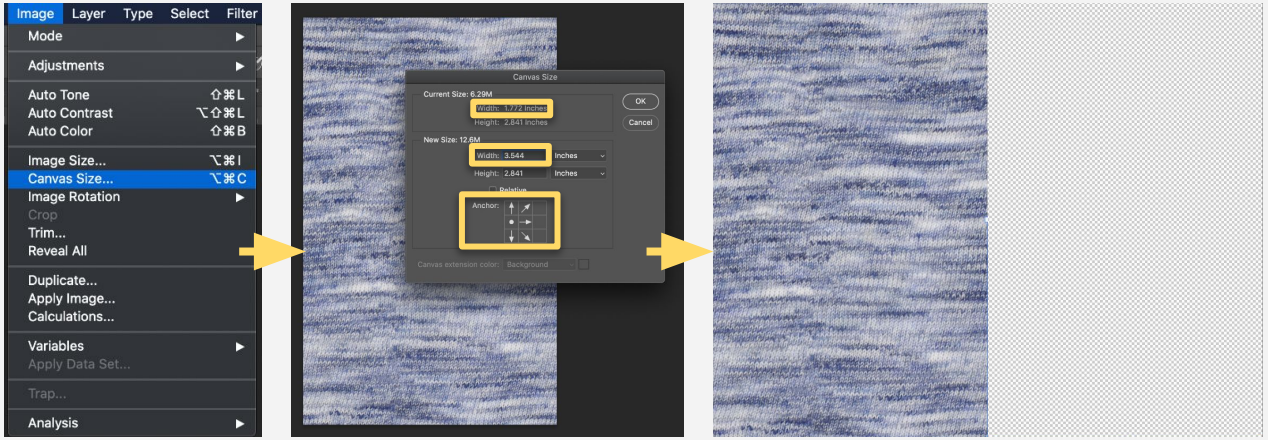


APPENDIX B Making Clean Repeats | Heather *Half Drop*

Use the following techniques to improve repeat if needed

7. Expand the canvas size through **Image** > **Canvas Size**

8. Anchor the existing artwork to the left side and double the canvas size

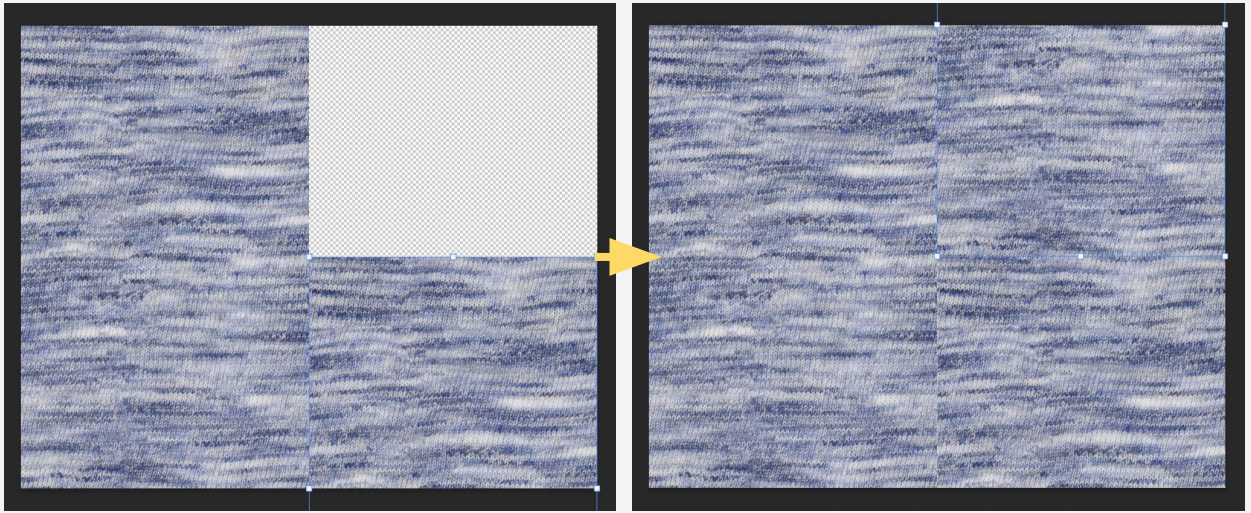


APPENDIX B Making Clean Repeats | Heather *Half Drop*

9. Copy the original artwork and paste on the right side of the canvas, moving it halfway down the canvas

10. Paste another copy of the artwork, this time to the upper right side

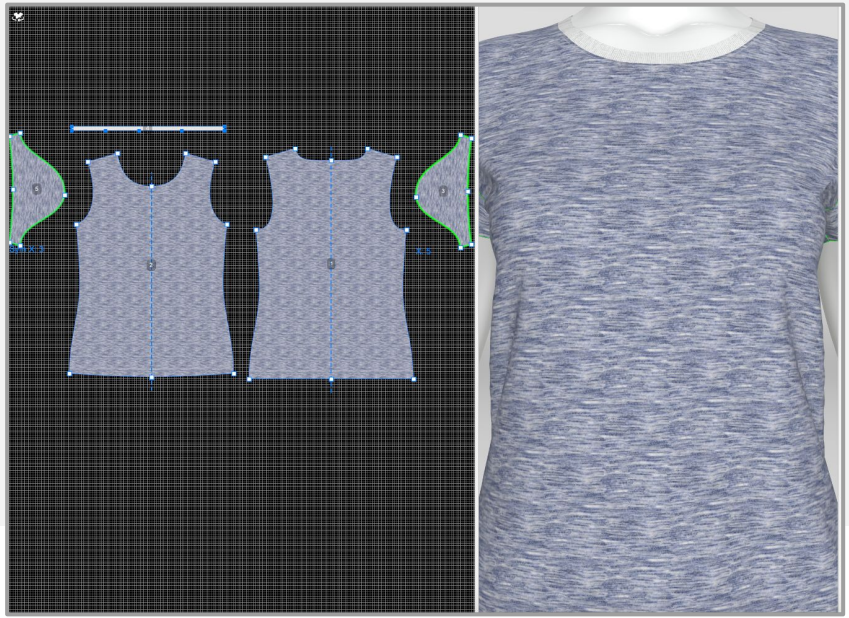
11. Merge the layers and repeat the same process as the original repeat



APPENDIX B Making Clean Repeats | Heather *Half Drop*

12. Upload the new half drop pattern as a diffuse map in Vstitcher

This technique can help with variation in the pattern for many scans, but this one needs further refinement



APPENDIX B Making Clean Repeats | Heather *Refining*

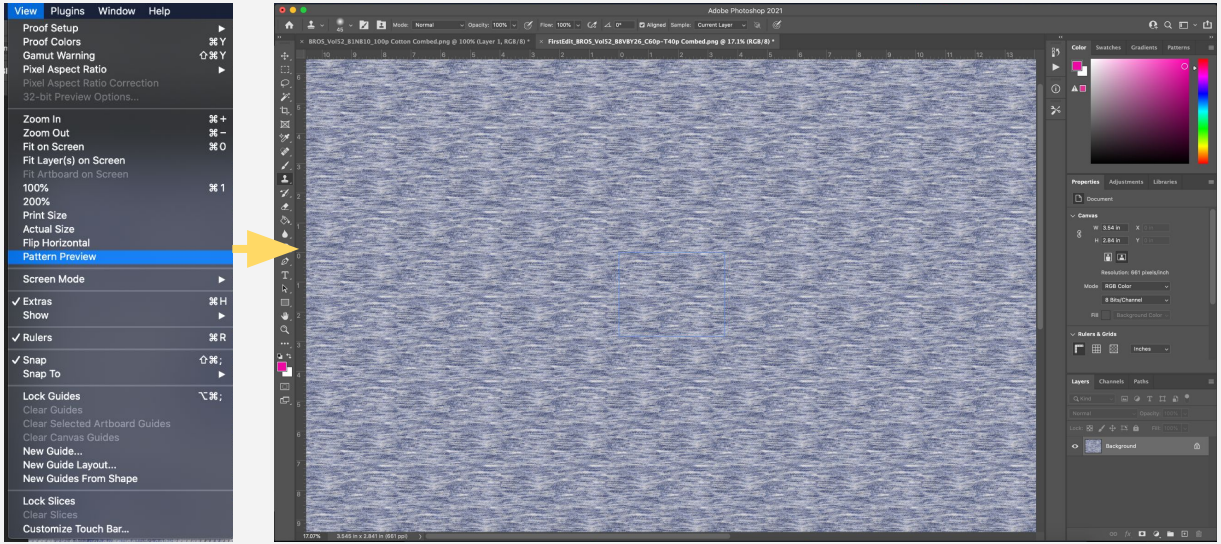
Instructions to further refine repeat:

13. In Photoshop, enter Pattern Preview through **View** > **Pattern Preview**

    In this preview you can make edits to the repeat while it's flooded

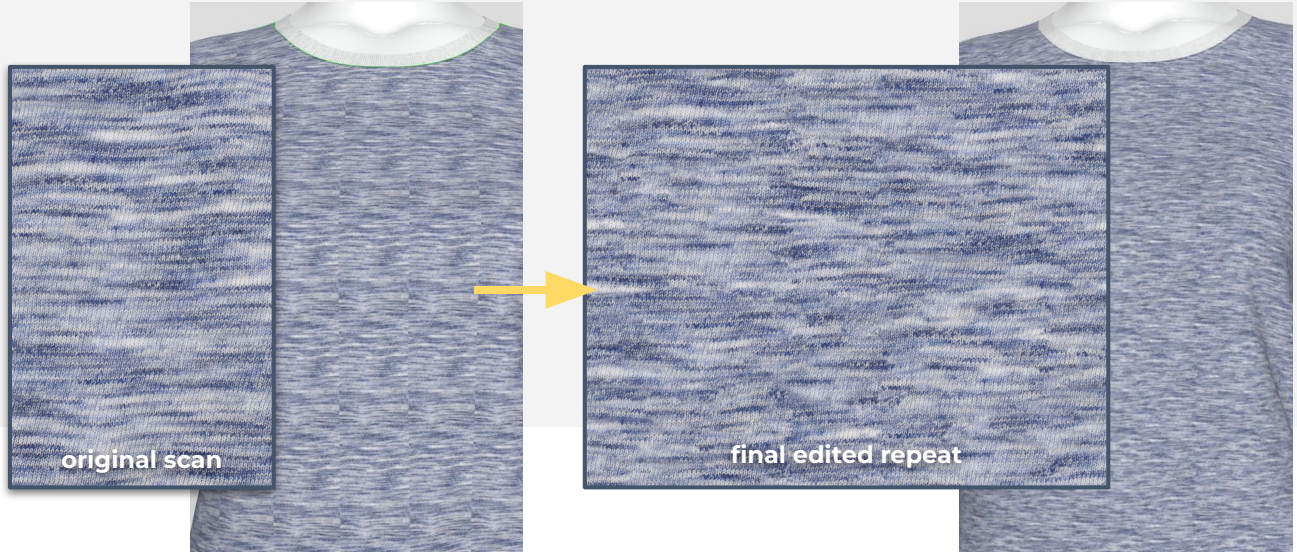
14. Continue to use the clone stamp and spot healing brushes to refine the pattern

    Zoom out frequently to check for tracking



APPENDIX B Making Clean Repeats | Heather *Refining*

15. Once happy with the edits in Photoshop, return to Vstitcher and check the repeat on a garment



APPENDIX C Neutralization of Swatches

NOTE! This step-by-step tutorial requires the following software:

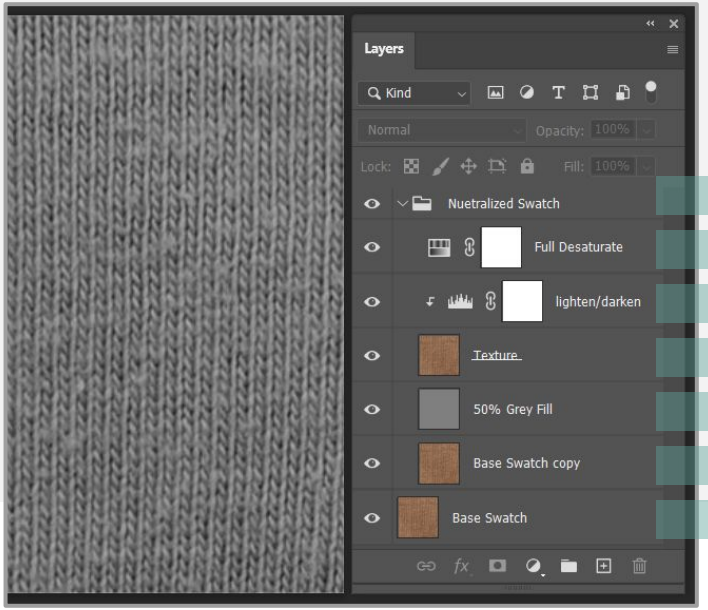
- *Adobe Photoshop*

1. This Photoshop Action (**Neutralize Swatch.atn**) is intended to be used on the base color map (diffuse/texture/col) for a digitized material.

2. Some minor edits to the adjustment layers created by the action may be needed.

   The resulting map should be fully desaturated and read near 50% grey (average values)

VIDEO OF NEUTRALIZATION PROCESS



Action Anatomy

Action can be provided by Kohl's DPC team (external user) or found on the DPC server (internal user)

Group created by action

Hue/Saturation adj. layer

Levels adj. layer clipped to texture layer

Copy of base swatch, overlay blending mode

50% grey layer, luminosity blending mode

Copy of base layer

Original swatch layer

APPENDIX C Neutralization of Swatches *(Cont'd.)*

3. Open your base map in Photoshop

4. Load action into Photoshop (skip this step if action already loaded)

5. In the Actions panel, click on and run the "Neutralize Swatch" action

6. Make necessary adjustments to the "lighten/darken" levels adjustment layer
   Aim point for the swatch overall should be 50% of grey with a preservation of textures
   *maybe flatten it?
7. Save image file and close.