Kohl's Denim Testing Standard Operating Procedure (SOP)

Overview:

Kohl's requires ***all*** denim be subject to Denim Testing. The purpose of this testing is to show how the fabric performs in a wide range of washes, and identify any performance concerns prior to bulk production. This tool serves as guidance to our cross-functional teams, helping them to select denim that is right for a particular style in regards to fit intent, washes, strength, and so on. This process will allow Kohl's to take an informed and proactive approach to improve the quality of our denim selection, and ensure overall customer satisfaction.

Kohl's Product Integrity (PI) team is available to consult on any denim results that fall outside of the testing parameters that are set (as shown in the below chart).

Denim Testing- Sample Submission:

Contact the test lab for an appropriate amount of samples to be submitted. Raw denim, Code A & Code B washes must be submitted & tested in the Denim Testing stage.
Select "Denim Fabric- Development" on the Test Request Form (TRF) & follow the codes as marked in the adopted denim chart below.

*****If denim is intended to be used for tight fitting, under spec, highly destructed, or have an aggressive wash, it is advised that the Vendor/MR reach out to Kohl's PI team for further guidance.***

Denim Testing:

To ensure that Kohl's is receiving" great" quality products, testing will be required for all denim programs effective immediately. The process is required for Raw, Rinse and Light Washes to understand the impact wash will have on denim performance in finished products. The following wash methods and codes have been identified by the Global Denim Team to establish standard wash methods as part of the Kohl's denim testing process.
Specific requirements are listed for some of the tests (as indicated below). All others are to follow the requirements as stated under protocol 102 woven fabrics and protocol 203 for Code A & Code B denim.

Labs should complete the tests listed below for Denim /Development Testing:

Testing Required		Code A Rinse Wash	Code B Light Wash
Wash Process	**Raw Denim**	**Only desize 10 min.**	**Desize + Enzyme Stone 45 mins + Bleach (stone added at recipe to have max stress to fabric)**
Tensile Strength	x Fail: <90 lbs	X Fail: < 50 lbs	X Fail: < 50 lbs
Tear Strength	x	X	X
Tension & Elongation	x Total Elongation: <25%	x Total Elongation: 25%- 50%	x Total Elongation: > 50%
Stretch & Recovery	**ALL: Fail: Recovery < 85%; Growth: > 7%** **** For any styles with performance stretch claims, see Performance Claim Chart****		
Dimensional Stability (warp & weft only) **	x **Fail:** Weft Results: ≥11% Warp Results : >3%	X	X
Kohl's Appearance Retention (Torque & Skew only)	X Fail: Results > 3%		
Seam Slippage	x	X	X
Seam Strength	x	X	X
Colorfastness to Crocking	x	X	
Weight	x	X	X
Fiber Content	X		

** Make sure to list the fabric denim spec weight for reference (not the finished weight)
** List spec'd yarn count & size
**List cuttable width
** Reference K-Link for most current test methods & requirements to be used.
**Tensile Strength- For any denim intended to be tight-fitting, under spec, highly destructed or have an aggressive wash, please reach out to Kohl's PI team for further guidance on this requirement.

Wash panels should be arranged by the garment vendor. Testing can be conducted at an accredited in house lab or 3rd party testing facility as outlined in the aforementioned chart. It is the Vendor's responsibility to measure and report shrinkage of Code A & B washes before submitting to the third party laboratory for denim development testing. Code A & B wash

shrinkage must be reported on the TRF under “Other” so that this information is included in the material test report.
Additional shrinkage testing for the development style/wash may be requested if shrinkage failures occur at this stage of testing.
****Any Dimensional Stability results outside 11 x 3 shrinkage MUST require pre-production discussion with Production, Global Denim Team, and QA/PI team. No overrides will be granted for raw denim results exceeding 11% weft &/or 3% warp.**

*** Vendors/MRs should reach out to mills to get raw and washed weight, yarn count and yarn size and fill in the Fabric TRF and Garment TRF accordingly. ie Raw weight & construction on adopted fabric TRF submission and washed on Garment TRF submission.*
Labs must include this information as data in the test report.
Kohl’s PI team has set specific parameters for Dimensional Stability, Stretch & Recovery/Tension & Elongation, and Tensile Strength, which differ from standard pass/fail requirements (as referenced in the chart above). ***Any results that cannot meet these specific parameters will receive a failed rating on the test report.*
**Labs must provide modulus readings (length & width) in all stages of testing.
**Wash panels should be arranged by the garment vendor. Testing can be conducted at an accredited in house lab or 3rd party testing facility as outlined in the aforementioned chart.
**Testing is the vendor’s responsibility. Test reports are uploaded in OnePLM by a third party approved lab, and will be reviewed by Product Integrity and the agent/vendors.
**Kohl's Product Integrity will partner with the Global Denim Team to review test results if performance concerns surface leading up to pre-production garment testing.

When Should Denim Testing Take Place?

TESTING REQUIRED FOR DENIM/WASHED APPAREL			
Development Testing		**Core Production Testing**	
Fabric/ Development	Pre-Production Garment *Testing MUST be completed before the fit process begins*	Production Fabric	Production Garment
X	X	X	X

*** If a style carries over from one season to another, (eg. FA23 to SP24) re-testing will be required in the fabric/development stage.*

Pre-Production Garment Testing (PPG):

Testing a full garment in the pre-production stage is mandatory and applies to all denim styles. The garment factory will be the owner of this testing, and must follow Kohl’s 203 (Denim/Washed Garment) Protocol for PPG testing in Dark Rinse & Light Wash. Results for PPG testing MUST be completed following first fit and wash destruction comments. *The garment sent for PPG testing and the garment sent for fit must be cut from the same roll of denim.*

Note: After wash garments should be sent to Kohl's Corporate at the same time as the fit and PP samples upon request, at Productions' Discretion.This process should not affect the timeline to meet calendar deadlines.

Garment Bulk Production Testing:

Once PPG testing is complete & vendor either has a Passing Test Report, or a PI Accepted/ Waived Report, then Garment Bulk Production Testing can take place. Testing must follow protocol 203 and include relevant washes for the style(s). Any questions, please reach out to the Kohl's PI team.

Existing/Running Denim Fabric Testing:

Existing or Running fabrics should follow our standard bulk production fabric test requirements. This includes testing **dark rinse and light washes**, following the 102 fabric protocol.
Any questions regarding the process, please reach out to Kohl's PI/QA team for assistance.

Additional reminders:

**Testing is required to be uploaded into OnePLM, as per Kohl's policy.
**Kohl's PI team reviews failing reports, and will consult with Vendor/MR & Global Denim Team (GDT) on an as-needed basis.
** If no stretch claim is made, fabric must meet Kohl's minimum requirements for Comfort Stretch (see Performance Claim chart below).

Performance Claims for Stretch Denim:

The Performance Claim chart shown below is intended to be used as a tool for directional development to help the GDT predict performance across multiple silhouettes and washes. Visibility to these results in the fabric development stage allows our teams to identify expectations for stretch and performance.
*Parameters are listed below & also listed in Kohl's 401 Performance Claim protocol on KLINK**.**

Performance Claim	Requirements
Comfort Stretch	Total Elongation @ 10 lbs: <25% Recovery @ 30 min: 85% min. Growth @ 30 min: 7% max
Performance Stretch	Total Elongation @ 10 lbs: < 25%-50% Recovery @ 30 min: 85% min. Growth @ 30 min: 4% max
Super Stretch	Total Elongation @ 10 lbs: > 50% Recovery @ 30 min: 85% min. Growth @ 30 min: 4% max

Kohl's Denim DevelopmentFabric Roles & Responsibilities:

FABRIC TESTING:ROLES /RESPONSIBILITIES & PROCESS		
	TASK	**OWNER**
1	Seasonal new fabric selection	GDT
2	Trigger sample request in fabric	GDT
3	Upon receipt of development chart in new fabrics, automatically trigger fabric testing: -Before wash -After wash code A -After wash code B	L&F/DI
4	Once fabric testing is complete, add into master chart and upload report into OnePLM	L&F/ DI
5	Review any reports falling outside of the agreed upon parameters. PI & LF/DI to alert GDT	PI & LF/DI
6	Identify performance claim based on testing that can be marketed	PI
7	PM to reach out to PI on any marketing claims they want to call out in regards to stretch. Below are current claims & parameters (available on KLINK): Comfort Stretch Performance Stretch Super Stretch	PI & PM

Note: PI is available to consult on test report results on an as-needed basis. It is important that cross-functional team members understand the testing parameters, and not rely on PI to comment on each individual test report.

VERSION HISTORY:

Version 1: *Created by Jackie Deppisch*
Version 2: *June 2022- updated requirements for adopted denim dimensional stability and Torque/SKEW -Changes made by Jackie Deppisch*
Version 3: *August 2022**-** updated to add in Existing/Running Denim Fabric production testing parameters; Guidelines for how to report weight, fabric count for fabric and garment submissions-Changes made by Jackie Deppisch*
Version 4: *Updated to add in Factory Wash & KAR requirements for destructed/fraying denim. Updates to adopted denim process (see top of page 4), after partnering with L&F and c/f partners. Updated Performance Claim Requirements for Recovery from 60 sec to 30 minutes.*

Version 5: *Removed "Adopted" from the SOP, updated charts for "Testing Requirements for Denim/Washed Apparel" & "Denim Development Fabric Testing", updates to Performance Stretch section of document, etc.*