

## 2024 Fabric Damage Proficiency Test FTS-24-FD Summary Report

**The Submission Deadline for this test was November 22, 2024**

*The test was manufactured by FTS at the FTS Laboratory Facility (127 W. Grand River Avenue, Williamston, MI 48895) and all activities were coordinated by Rebecca Smith (rsmith@forsci.com), Proficiency Test Program Manager. Ms. Smith is also authorizing the release of this report. This is the summary report issued on 12/9/24. FTS considers all reports confidential and does not release information regarding participant's results without authorization from that participant.*

### **Summary**

Test results were received in 32 of 38 tests distributed (84% response rate). Of the 32 respondents:

#### Area 1 (Tear)

27 of 32 (84%) classified the area of damage as a "tear".  
5 of 32 (16%) classified the area of damage as "other".

#### Area 2 (Seam Separation)

31 of 32 (97%) classified the area of damage as a "seam separation". 1 of these respondents also classified the area of damage as "other".  
1 of 32 (3%) classified the area of damage as "inconclusive".

#### Area 3 (Unlaundered Cut and Tear)

31 of 32 (97%) classified the area of damage as a "cut" and a "tear".  
1 of 32 (3%) classified the area of damage as a "cut".

18 of 32 (56%) reported that the area has not been laundered since damage took place.  
7 of 32 (22%) reported "My laboratory does not make this type of determination" as to whether the area has been laundered since damage took place.  
7 of 32 (22%) reported "Inconclusive" as to whether the area has been laundered since damage took place.

#### Area 4 (Unlaundered Cut)

32 of 32 (100%) classified the area of damage as a "cut".

21 of 32 (66%) reported that the area has not been laundered since damage took place.  
7 of 32 (22%) reported "My laboratory does not make this type of determination" as to whether the area has been laundered since damage took place.  
4 of 32 (12%) reported "Inconclusive" as to whether the area has been laundered since damage took place.

## Assigned Value

Proficiency tests under ISO 17043:2023 are assessed via comparison of the participant result to the assigned value of a proficiency test item or items. For quantitative tests, FTS determines the assigned value based on statistical methods described in ISO 13528:2022. For qualitative tests, the FTS study coordinator determines the assigned value based on a number of factors, including product source information, internal and/or external pre-distribution laboratory analysis, and consensus of responses (consensus value).

Quality systems and laboratory reporting guidelines vary greatly from laboratory to laboratory, therefore participating laboratories and their accrediting bodies are responsible for the assessment of whether a reported result is an outlying result. For the convenience of subscribers FTS has highlighted, in yellow, any result that in the opinion of the FTS study coordinator may be inconsistent with the assigned value in the summary report.

For this proficiency test, the following assigned values are based on source information which was then confirmed by laboratory analysis:

- Area 1: Tear
- Area 2: Seam separation
- Area 3: Cut and tear, unlaundered
- Area 4: Cut, unlaundered

## Manufacturer's Information

A pair of Fruit of the Loom® underwear (50% Cotton/50% Polyester, Size 14, UPC 9442202150) was utilized to prepare all items. Underwear came in solid or striped pattern. The underwear were laundered three times completely (washed and dried with other laundry items) prior to implementing damage.

Area 1 was produced by using the blunt end of a Sharpie marker and poking it through the front left side of the underwear. After, the hole was manually torn to produce a tear that measured ~3/4". The resulting damage displayed frayed yet organized edges, consistent with tearing.

Area 2 was produced by manually breaking the seam thread on the right hip of the underwear. The seam was manually pulled apart producing a ~1/2" seam separation.

Area 3 was produced by making a ~1/2" incision to the front left opening of the underwear, through the bottom seam, using a scalpel. To extend the damage from the cut, the area was torn, so the total damage (cut and tear) measured ~1". The resulting damage displayed both frayed and sharply cut edges, consistent with both a tear and a cut.

Area 4 was produced by first making a ~1/4" incision to the front of the underwear, using a scalpel. A sharply cut edge with no associated tearing was present.

Each damaged area was circled with a permanent marker and numbered. All damaged edges were photographed after preparation. The underwear was labeled and packaged into a 6" x 9" manila envelope, sealed and labeled per FTS guidelines.

Please examine the submitted garment to determine any damage present.

**Items Submitted**

**Item 1:** Underwear with areas of damage "1-4", circled and labeled.

3) Indicate all methods used for analysis (check all that apply):

- A)  Macro/Microscopical Examinations
- B)  SEM/EDS
- C)  PLM
- D)  Alternate Light Source

UTIC	Webcode	Indicate all methods used for analysis (check all that apply)
p20241001	W182	Macro/Microscopical Examinations
p20241002	W051	Macro/Microscopical Examinations
p20241003	W061	Macro/Microscopical Examinations
p20241004	W061	Macro/Microscopical Examinations
p20241005	W061	Macro/Microscopical Examinations
p20241006	W179	Macro/Microscopical Examinations; Alternate Light Source
p20241007	W040	Macro/Microscopical Examinations
p20241008	W181	Macro/Microscopical Examinations; Alternate Light Source
p20241009	W163	Macro/Microscopical Examinations
p20241010	W163	Macro/Microscopical Examinations
p20241011	W163	Macro/Microscopical Examinations
p20241012	W128	Macro/Microscopical Examinations
p20241013	W132	Macro/Microscopical Examinations
p20241014	W160	Macro/Microscopical Examinations; Alternate Light Source
p20241015	W088	Macro/Microscopical Examinations
p20241016	W052	Macro/Microscopical Examinations
p20241018	W052	Macro/Microscopical Examinations
p20241019	W052	Macro/Microscopical Examinations
p20241020	W089	Macro/Microscopical Examinations; PLM
p20241022	W093	Macro/Microscopical Examinations
p20241023	W204	Macro/Microscopical Examinations
p20241024	W027	Macro/Microscopical Examinations

UTIC	Webcode	Indicate all methods used for analysis (check all that apply)
p20241026	W053	Macro/Microscopical Examinations
p20241027	W136	Macro/Microscopical Examinations
p20241028	W051	Macro/Microscopical Examinations
p20241031	W126	Macro/Microscopical Examinations
p20241032	W126	Macro/Microscopical Examinations
p20241033	W126	Macro/Microscopical Examinations
p20241034	W126	Macro/Microscopical Examinations
p20241035	W162	Macro/Microscopical Examinations
p20241036	W055	Macro/Microscopical Examinations
p20241037	W055	Macro/Microscopical Examinations

4) Other methods used (if none, please enter "N/A"):

UTIC	Webcode	Other methods used
p20241008	W181	Comparison microscope

5) Area 1: Indicate all types of damage present to the fabric:

- A)  Cut
- B)  Tear
- C)  Seam Separation
- D)  Burn/Thermal
- E)  Other
- F)  Inconclusive
- G)  N/A

UTIC	Webcode	Area 1: Indicate all types of damage present to the fabric
p20241001	W182	Tear
p20241002	W051	Tear
p20241003	W061	Tear
p20241004	W061	Tear
p20241005	W061	Tear
p20241006	W179	Tear

UTIC	Webcode	Area 1: Indicate all types of damage present to the fabric
p20241007	W040	Tear
p20241008	W181	Tear
p20241009	W163	Tear
p20241010	W163	Tear
p20241011	W163	Other
p20241012	W128	Tear
p20241013	W132	Tear
p20241014	W160	Tear
p20241015	W088	Tear
p20241016	W052	Tear
p20241018	W052	Tear
p20241019	W052	Tear
p20241020	W089	Tear
p20241022	W093	Tear
p20241023	W204	Other
p20241024	W027	Tear
p20241026	W053	Tear
p20241027	W136	Tear
p20241028	W051	Tear
p20241031	W126	Other
p20241032	W126	Other
p20241033	W126	Tear
p20241034	W126	Other
p20241035	W162	Tear
p20241036	W055	Tear
p20241037	W055	Tear

6) Area 2: Indicate all types of damage present to the fabric:

- A)  Cut
- B)  Tear
- C)  Seam Separation
- D)  Burn/Thermal
- E)  Other
- F)  Inconclusive
- G)  N/A

UTIC	Webcode	Area 2: Indicate all types of damage present to the fabric
p20241001	W182	Seam Separation
p20241002	W051	Seam Separation
p20241003	W061	Seam Separation
p20241004	W061	Seam Separation
p20241005	W061	Seam Separation
p20241006	W179	Seam Separation
p20241007	W040	Seam Separation
p20241008	W181	Seam Separation
p20241009	W163	Seam Separation
p20241010	W163	Seam Separation
p20241011	W163	Seam Separation
p20241012	W128	Seam Separation
p20241013	W132	Seam Separation
p20241014	W160	Seam Separation
p20241015	W088	Inconclusive
p20241016	W052	Seam Separation
p20241018	W052	Seam Separation
p20241019	W052	Seam Separation
p20241020	W089	Seam Separation
p20241022	W093	Seam Separation
p20241023	W204	Seam Separation
p20241024	W027	Seam Separation; Other
p20241026	W053	Seam Separation
p20241027	W136	Seam Separation
p20241028	W051	Seam Separation
p20241031	W126	Seam Separation
p20241032	W126	Seam Separation
p20241033	W126	Seam Separation
p20241034	W126	Seam Separation
p20241035	W162	Seam Separation
p20241036	W055	Seam Separation
p20241037	W055	Seam Separation

7) Area 3: Has the garment been laundered since damage took place?

- A)  Yes
- B)  No

C)  Inconclusive

D)  My laboratory does not make this type of determination.

8) Area 3: Indicate all types of damage present to the fabric:

A)  Cut

B)  Tear

C)  Seam Separation

D)  Burn/Thermal

E)  Other

F)  Inconclusive

G)  N/A

UTIC	Webcode	Area 3: Has the garment been laundered since damage took place?	Area 3: Indicate all types of damage present to the fabric
p20241001	W182	No	Cut; Tear
p20241002	W051	No	Cut; Tear
p20241003	W061	No	Cut; Tear
p20241004	W061	My laboratory does not make this type of determination.	Cut; Tear
p20241005	W061	Inconclusive	Cut; Tear
p20241006	W179	No	Cut; Tear
p20241007	W040	My laboratory does not make this type of determination.	Cut; Tear
p20241008	W181	My laboratory does not make this type of determination.	Cut
p20241009	W163	No	Cut; Tear
p20241010	W163	No	Cut; Tear
p20241011	W163	No	Cut; Tear
p20241012	W128	No	Cut; Tear
p20241013	W132	Inconclusive	Cut; Tear
p20241014	W160	Inconclusive	Cut; Tear
p20241015	W088	My laboratory does not make this type of determination.	Cut; Tear
p20241016	W052	No	Cut; Tear
p20241018	W052	No	Cut; Tear
p20241019	W052	No	Cut; Tear
p20241020	W089	No	Cut; Tear

UTIC	Webcode	Area 3: Has the garment been laundered since damage took place?	Area 3: Indicate all types of damage present to the fabric
p20241022	W093	No	Cut; Tear
p20241023	W204	Inconclusive	Cut; Tear
p20241024	W027	My laboratory does not make this type of determination.	Cut; Tear
p20241026	W053	No	Cut; Tear
p20241027	W136	No	Cut; Tear
p20241028	W051	No	Cut; Tear
p20241031	W126	Inconclusive	Cut; Tear
p20241032	W126	No	Cut; Tear
p20241033	W126	No	Cut; Tear
p20241034	W126	Inconclusive	Cut; Tear
p20241035	W162	Inconclusive	Cut; Tear
p20241036	W055	My laboratory does not make this type of determination.	Cut; Tear
p20241037	W055	My laboratory does not make this type of determination.	Cut; Tear

9) Area 4: Has the garment been laundered since damage took place?

- A)  Yes
- B)  No
- C)  Inconclusive
- D)  My laboratory does not make this type of determination.

10) Area 4: Indicate all types of damage present to the fabric:

- A)  Cut
- B)  Tear
- C)  Seam Separation
- D)  Burn/Thermal
- E)  Other
- F)  Inconclusive
- G)  N/A

UTIC	Webcode	Area 4: Has the garment been laundered since damage took place?	Area 4: Indicate all types of damage present to the fabric
p20241001	W182	No	Cut
p20241002	W051	No	Cut
p20241003	W061	No	Cut
p20241004	W061	My laboratory does not make this type of determination.	Cut
p20241005	W061	No	Cut
p20241006	W179	No	Cut
p20241007	W040	My laboratory does not make this type of determination.	Cut
p20241008	W181	My laboratory does not make this type of determination.	Cut
p20241009	W163	No	Cut
p20241010	W163	No	Cut
p20241011	W163	Inconclusive	Cut
p20241012	W128	No	Cut
p20241013	W132	Inconclusive	Cut
p20241014	W160	No	Cut
p20241015	W088	My laboratory does not make this type of determination.	Cut
p20241016	W052	No	Cut
p20241018	W052	No	Cut
p20241019	W052	No	Cut
p20241020	W089	No	Cut
p20241022	W093	No	Cut
p20241023	W204	Inconclusive	Cut
p20241024	W027	My laboratory does not make this type of determination.	Cut
p20241026	W053	No	Cut
p20241027	W136	No	Cut
p20241028	W051	No	Cut
p20241031	W126	No	Cut
p20241032	W126	No	Cut
p20241033	W126	No	Cut
p20241034	W126	Inconclusive	Cut
p20241035	W162	No	Cut
p20241036	W055	My laboratory does not make this type of determination.	Cut
p20241037	W055	My laboratory does not make this type of determination.	Cut

11) How would you state your findings in a report? (Use the same wording as you would to submit a report to the lead investigator and/or court). In order to maintain confidentiality, please refrain from including identifying information specific to your laboratory.

UTIC	Webcode	How would you state your findings in a report? (Use the same wording as you would to submit a report to the lead investigator and/or court).
p20241001	W182	<p>Four damaged areas on the submitted underwear were examined to determine the type of damage to the item.</p> <p>The following types of damage were found:</p> <p>Area 1- Tear    Area 2- Seam Separation    Area 3- Cut &amp; Tear    Area 4- Cut</p>
p20241002	W051	<p>Areas of damage were found on the blue-coloured undergarment marked "Item 1".</p> <ol style="list-style-type: none"> <li>1. Area 1: A recent tear damage measuring 20 mm long x 5 mm wide was found on the front right upper region.</li> <li>2. Area 2: A recent seam separation damage measuring 20 mm long was found on the right upper seam region.</li> <li>3. Area 3: A recent damage measuring 30 mm long was found on the front lower central region. It consists of a section of cut damage measuring 24 mm long and a tear damage measuring 6 mm long.</li> <li>4. Area 4: A recent cut damage measuring 7 mm long was found on the front central region.</li> </ol> <p><b>Note:</b></p> <ol style="list-style-type: none"> <li>1. Recent damage indicates damage to a textile that has not been laundered, worn, or used significantly prior to examination.</li> <li>2. "mm" : Millimeter</li> <li>3. All measurements are approximate</li> </ol>

UTIC	Webcode	How would you state your findings in a report? (Use the same wording as you would to submit a report to the lead investigator and/or court).
p20241003	W061	<p>The exhibit, a pair of blue and white striped, shortie-style underwear were submitted to the Textile Damage team on 19th September 2024. The underwear was visually and microscopically examined for Textile Damage Areas of Interest (TD AOI). Any TD AOI identified, were recorded, classified, and a potential mechanism suggested (if possible)</p> <p>4 x TD AOI were identified on the underwear.</p> <p>TD AOI 1: Damage was located on the front upper right and had features indicative of fresh puncture-tear type damage.</p> <p>TD AOI 2: Damage was located on the left side seam and had features indicative of fresh seam separation due to seam thread failure/loosening.</p> <p>TD AOI 3: Damage was located on the front right leg seam and had features indicative of fresh cut damage, possibly created with scissors, with subsequent tearing.</p> <p>TD AOI 4: Damage was located on the front centre area and had features indicative of a fresh stab-type cut, caused by an single edged, smooth bladed implement with a width of at least 16mm.</p>
p20241004	W061	<p>The item comprised a pair of pink 'Fruit of the Loom' underwear, size 14, labelled as 50% cotton and 50% polyester, in a knit fabric. Four areas of textile damage were noted, each marked '1' to '4'.</p> <p>Area 1 located on the upper front right comprised a hole approximately 5 mm in diameter, with the fabric curling outwards along the damaged edges. The damage is consistent with tearing, the tearing damage likely caused by a puncture.</p> <p>Area 2 located on the left side comprised a severance approximately 20 mm in length along the seam. The damage is consistent with a seam separation.</p> <p>Area 3 located on the lower front right comprised a severance approximately 23 mm in length. The lower damage through the hem was approximately 18 mm in length, continuous and unidirectional, consistent with severance by a sharp bladed implement. The damage after the hem displays unravelled yarns with frayed ends, curling edges of fabric and fabric distortion. The damage is consistent with being cut then torn.</p> <p>Area 4 located on the middle front right comprised a severance approximately 18 mm in length. The damage was continuous and unidirectional, consistent with severance by a sharp bladed implement. The damage appeared linear, with yarns appearing cleanly severed and no distortion of the yarn ends. The damage is consistent with being cut.</p>

UTIC	Webcode	How would you state your findings in a report? (Use the same wording as you would to submit a report to the lead investigator and/or court).
p20241005	W061	<p>There were four areas of damage observed to the underpants that were considered to be over and above normal wear and tear:</p> <ol style="list-style-type: none"> <li>1. There was a hole to the front right (wearer's perspective) of the underpants. The hole was approximately 1 centimeter (cm) in diameter and displayed features of tearing. Puncturing is the most likely mechanism to have produced this hole. No matting or foreign fibres were observed indicating the damage is possibly recent.</li> <li>2. There was a seam separation to the left side seam of the underpants. This damage was approximately 2 cm in length. No matting or foreign fibres were observed indicating the damage is possibly recent.</li> <li>3. There was a combination cut / tear to the front of the right leg hole of the underpants. The cut extended diagonally approximately 1 cm through the hem and extended with tearing a further 1.5 cm. The recency of this damage could not be determined.</li> <li>4. There was a diagonal cut to the front right of the underpants. The cut was approximately 1.3 cm in length. No matting or foreign fibres were observed indicating the damage is possibly recent.</li> </ol>
p20241006	W179	<p>Four areas of damage were found on this pair of underwear, three to the front right and one to the left seam. In my opinion, all of the damage on this item appeared recent. I.e. it had been created since the item had been worn for a prolonged period of time or had been laundered.</p> <p>Feature one was a hole with irregular edges. In my opinion, tearing most likely created by a puncturing action with a blunt implement.</p> <p>Feature two was at the left seam where there was a small area where the stitching had come undone causing the seam to separate.</p> <p>Feature three was at the bottom hem and appeared to have two separate components. In my opinion, there appeared to have been an initial cut with a sharp bladed implement and the area of damage was then further expanded by a tearing action.</p> <p>Feature four comprised a single cut, in my opinion most likely caused by a single stabbing action with a sharp bladed implement such as a knife.</p>

UTIC	Webcode	How would you state your findings in a report? (Use the same wording as you would to submit a report to the lead investigator and/or court).
p20241007	W040	<p>Examined visually and with stereomicroscopy.</p> <p>Damage Area 1 (3/8 inch diameter) located 2 1/2 inches below the right side of the waistband and 4 1/4 inches right of the anterior mid-body line. Damage Area 1 has the appearance of a tear.</p> <p>Damage Area 2 (3/4 inch length x 1/16 inch width) located 2 inches below the left side of the waistband and on the left lateral seam. Damage Area 2 has the appearance of a seam separation.</p> <p>Damage Area 3 (1 inch length x 1/2 inch width) located 6 1/2 inches below the right side of the waistband and 3 inches right of the anterior mid-body line. Damage Area 3 has the appearance of a cut and a tear.</p> <p>Damage Area 4 (1/2 inch length x 1/16 inch width) located 3 3/4 inches below the right side of the waistband and 1 3/4 inches right of the anterior mid-body line. Damage Area 4 has the appearance of a cut.</p>
p20241008	W181	<p>Area 1 presents morphology typical of breaks produced by tearing, in which the appearance of loose and unstructured fibers and threads predominates, poorly defined ends as a consequence of the denaturation of the fabric. The damage follows the direction of yarn/fiber construction.</p> <p>Area 2 presents characteristics typical of damage caused by separation of seams, as seen in the image, the breakage follows the direction in which the thread/thread fabric is made, in which, after certain tensile forces are produced, it causes the unstitching of the fabric. , following the trajectory of the seam itself.</p> <p>Area 3 is tissue damage whose morphology corresponds to breaks typical of cuts, in which the presence of fibers arranged in a line along its trajectory is observed. The direction of the breakage is completely linear and does not follow the direction in which the strand/thread fabric was made. In addition, a "V"-shaped finished end can be observed. All of them characteristics of cuts produced by a knife or reasonably sharp object. Although in some areas the presence of loose and frayed fibers is observed.</p> <p>Area 4 is tissue damage whose morphology corresponds to breaks typical of well-defined cuts, in which the presence of fibers arranged in a line along its trajectory is observed. The direction of the breakage is completely linear and does not follow the direction in which the strand/thread fabric was made. In addition, a "V"-shaped finished end can be observed. All of them characteristics of cuts produced by a knife or reasonably sharp object.</p>

UTIC	Webcode	How would you state your findings in a report? (Use the same wording as you would to submit a report to the lead investigator and/or court).
p20241009	W163	<p>A hole (Damage 1) was present in the fabric to the right front of this pair of blue briefs. The hole was approximately 0.8 centimetres (cms) by 1.1 cms. A number of threads had been severed and their ends were fluffy. In my opinion one possible explanation for this damage is that it has been caused by the fabric being penetrated by a non-sharp ended implement or perhaps snagged on a penetrating item, causing the fabric to tear.</p> <p>A section of the left side seam (Damage 2), which was approximately 1.6 cms long, had become unstitched. There was no evidence of cut threads or fabric. In my opinion, this damage was a seam separation and, whilst fresh in appearance, could have been caused by general wear and tear.</p> <p>An area of damage (Damage 3) was present to the front of right leg opening. A vertical cut approximately 1.5 cms long was present to the hemmed edge of the leg hole which appeared to have been extended a further approximately 1.3 cms with a tear. In my opinion, this damage is fresh. (The term 'fresh' does not designate a time period, but rather, it indicates that the damaged item has not been washed or worn extensively since the damage occurred.)</p> <p>There was a diagonal area of damage to the right front (Damage 4). In my opinion, this was a fresh cut which had been caused by a sharp bladed implement such as a knife.</p>
p20241010	W163	<p>This item consisted of a pair of underwear in fair condition. Four areas of damage were noted on the item and in my opinion, consist of the following:</p> <ul style="list-style-type: none"> <li>• An area of puncture/tearing damage to the right hip area measuring approximately 1.2cm in length</li> <li>• an area of seam separation to the left hip side seam measuring approximately 2.5cm in length</li> <li>• an area of cutting damage which has been extended by subsequent tearing to the hem of the right leg measuring approximately 2.2cm in length</li> <li>• an area of cutting damage to the centre front measuring approximately 1cm in length</li> </ul> <p>In my opinion, all of these areas of damage appear to have been caused recently where the term recent does not designate a time period rather it indicates that the damaged item has not been laundered or worn extensively since the damage occurred.</p>

UTIC	Webcode	How would you state your findings in a report? (Use the same wording as you would to submit a report to the lead investigator and/or court).
p20241011	W163	<p>The pair of shorts-style knickers (FTS-24-FD) has been examined in an attempt to determine the nature of four areas of damage present on them.</p> <p>Other than the areas of damage, the knickers are in a very good condition, are structurally sound and appear almost as-new.</p> <p>The four areas of damage have been circled in black and labelled as areas 1-4.</p> <p><u>Area 1</u> This damage is located in the front left hip region. In my opinion, it is in the form of a hole, with some associated laddering to the fabric. Where the thread has broken, the thread is slightly frayed but the exposed edges are not associated with any extraneous fibres. In my opinion, it is feasible that this damage is general wear and tear, for example where the fabric could have become caught on something (although not with any great degree of force, as there is no distortion to the fabric), causing the hole to form.</p> <p><u>Area 2</u> This damage is located on the left hip region, where the seam at the side has started to separate. Some of the thread that has become loose has separated out - this could be from wear (rubbing) during / after the seam separation but in general it does not appear that the knickers had been worn for any extended length of the time after the seam had separated.</p> <p><u>Area 3</u> This damage is located at the front of the right leg opening. In my opinion, this damage has been caused by the fabric initially being cut through the stitching at the hem and then the damage has extended as a result of the fabric being torn. The exposed edges of the broken threads are not frayed, nor are they associated with any extraneous fibres. Therefore, in my opinion, I do not favour that the knickers had been washed since the damage was caused.</p> <p><u>Area 4</u> This area of damage is slightly off to the right of the centre front of the knickers. In my opinion, this damage comprises a cut through the fabric. The knitted loops of the fabric are still intact despite being cut through - I would perhaps have expected them to come apart at least slightly if the knickers had been washed after this cut had been caused. Therefore, while it remains a possibility that the knickers had been laundered the cut was caused, there is nothing to readily indicate that this occurred.</p>

UTIC	Webcode	How would you state your findings in a report? (Use the same wording as you would to submit a report to the lead investigator and/or court).
p20241012	W128	<p>Textile Damage Area #1: The textile damage is about 1,5 cm long. There can be threads of different lengths observed. The damage has been overstretched in the area of the textile damage. Those observations are consistent with a tear provoked by a blunt object.</p> <p>Textile Damage Area #2: The textile damage is about 1,5 cm long. In this area the seam is seperated. The frayed ends of the seam yarn are consistent with a torn yarn.</p> <p>Textile Damage Area #3: The textile damage is about 2,5 cm long. There can be pointed and angular edges observed in the area of the hemline of the textile damage. These observations are consistent with a cut. The cut is continued in a damaged area with frayed endings which is consistent with a tear.</p> <p>Textile Damage Area #4: The textile damage is about 1 cm long. There can be a pointed and a angular edge observed in the textile damage. The textile has not been overstretched in the area of the damage. These observations are consistent with a cut.</p>
p20241013	W132	<p>Four areas of damage were observed on the underwear.</p> <p>Area 1 had a tear on the front right of approximately 1 cm in diameter with a ladder extending upwards for approximately 1cm. I cannot eliminate normal wear and tear as the cause of this damage.</p> <p>Area 2 had a rip on the left hand side seam of approximately 1cm. I cannot eliminate normal wear and tear as the cause of this damage.</p> <p>Area 3 had a cut and tear on the lower front right of approximately 3cm. In my opinion this damage was not due to normal wear and tear.</p> <p>Area 4 had a cut on the front centre of approximately 1cm. In my opinion this damage was not due to normal wear and tear.</p> <p>The underwear can be worn in this condition.</p> <p>In order to form my opinions on the observed damage reconstruction experiments were carried out on the garment.</p>

UTIC	Webcode	How would you state your findings in a report? (Use the same wording as you would to submit a report to the lead investigator and/or court).
p20241014	W160	<p>Four areas of damage were present on the item, three on the front and one at the left side seam. The areas were labelled 1-4. Area 1 appeared to be a tear in the fabric, measuring approximately 10 mm x 5 mm in size. Area 2 appeared to be seam separation (this may have been caused by normal wear and tear), measuring approximately 17 mm in length. Area 3 appeared cut through the seam and then torn, with an overall length of approximately 30 mm. Area 4 appeared to be a cut measuring approximately 13 mm in length.</p>
p20241015	W088	<p>A pair of underwear (item 1) was examined to determine what type of damage is present.</p> <p>Examination of the underwear (item 1) reveals the presence of four circled areas of damage.</p> <p>The area marked "1" is on the front, right side of the underwear (item 1). Examination of this damage reveals it is characteristic of having been torn.</p> <p>The area marked "2" is on the left side along the seam of the underwear (item 1). Examination of this damage reveals it has neither cut nor torn characteristics. Therefore, it is deemed inconclusive.</p> <p>The area marked "3" is on the lower right side of the front of the underwear (item 1). Examination of this damage reveals it is characteristic of having been both cut and torn.</p> <p>The area marked "4" is on the middle portion of the front of the underwear (item 1). Examination of this damage reveals it is characteristic of having been cut.</p> <p><b>METHODS OF ANALYSIS:</b></p> <p>Examinations were performed visually and by stereo microscopy.</p>

UTIC	Webcode	How would you state your findings in a report? (Use the same wording as you would to submit a report to the lead investigator and/or court).
p20241016	W052	<p>All measurements in this report are approximate.</p> <p>The four areas of damage identified on the underpants were examined.</p> <p>It may be possible, when examining damage in fabric, to offer an opinion as to its age and the type of action or actions which may have caused it. When I do so, this is my expert opinion based on my knowledge, experience and training. I have used recent to describe the age of the damage and it is intended to indicate that the damage was created since the item was last washed or that any subsequent wear has not altered the features used to interpret its age.</p> <p>Area 1 was on the front of the right hip area. It was approximately circular in its appearance and was 7 millimetre in diameter. The features present within the damage indicated that tearing had occurred. This type of damage may be seen when fabric is punctured.</p> <p>Area 2 was on the left side seam towards the waistband. The sewing threads used to form the seam were intact but had unravelled causing the seam to come apart. The condition of the thread ends suggested that the separation had recently occurred.</p> <p>Area 3 was on the front right leg hem near the crotch seam. The recently created damage was complex in its appearance and it measured 35 millimetres diagonally across. It contained both cutting and tearing. To create the damage, the hem was cut through to presumably form an initiation cut which was then extended by tearing. Although unlikely, I cannot exclude the possibility the actions were in the reverse order with tearing followed by cutting. It was not possible to determine the type of bladed implement used to form the cutting damage.</p> <p>Area 4 was on the centre front above the crotch seam. The fabric had been recently cut to create a 14 millimetre linear separation in the fabric. It was not possible to determine the shaping of the bladed implement used to form the cutting damage.</p>

UTIC	Webcode	How would you state your findings in a report? (Use the same wording as you would to submit a report to the lead investigator and/or court).
p20241018	W052	<p>There were four areas of damage present on the underpants, labelled as areas one to four.</p> <p>Area one was an oval hole measuring approximately 6 x 7 millimetres. In my opinion this damage was caused by recent tearing of the fabric. By recent I mean that the item had not had significant wear or been washed since the damage occurred.</p> <p>Area two was a linear area of damage to the left side-seam. The sewing thread had come undone causing the seam to separate. In my opinion this damage was recent.</p> <p>Area three was a linear area of damage in the right side of the lower front. It measured approximately 30 millimetres long and included the hem and some of the fabric above the hem. In my opinion the damage was most likely caused by recent cutting of the fabric through the hem then extension above this by tearing.</p> <p>Area four was a linear area of damage, approximately 13 millimetres long, in the centre front of the underpants. In my opinion this damage was caused by cutting and was recent.</p>
p20241019	W052	<p>Exhibit Receipt</p> <p>Laboratory records show that on 05 September 2024 a pair of underpants was received for examination in relation to this case.</p> <p>I have been requested to examine this pair of underpants for any areas of damage that may be present.</p> <p>Examinations, Results and Opinions</p> <p>The results and conclusions provided in this statement form my expert opinion, which is based on my scientific knowledge, experience and training.</p> <p>The results apply to the items as received and relate only to the items tested.</p> <p>The submitted item consisted of a pair of blue coloured 'Fruit of the Loom' underpants. Four areas of damage were observed on the underpants, marked 1 to 4 respectively. The examination of these areas of damage is as detailed below:</p> <p>Background</p> <p>Conclusions as to the cause of the damage are my opinions based on characteristics present in the damage that allow me to offer an opinion of the type of event or events that have created the damage and the relative age of the damage. The term recent is used to indicate the damaged has occurred since the item was last washed. All of the measurements given in relation to damage are approximate.</p>

UTIC	Webcode	How would you state your findings in a report? (Use the same wording as you would to submit a report to the lead investigator and/or court).
p20241019 (Cont.)	W052	<p>Damage Area 1</p> <p>Damage Area 1, which was on the front right side of the underpants, measured 10 by 5 millimetres. In my opinion, this area of damage has been caused by a tearing action and is recent in origin.</p> <p>Damage Area 2</p> <p>Damage Area 2, which was along the seam on the left side of the underpants, measured 15 millimetres in length. In my opinion, this area of damage consisted of a length of seam separation and was recent in origin.</p> <p>Damage Area 3</p> <p>Damage Area 3 was on the front right central leg seam area of the underpants. In my opinion, this area of damage consisted of an area of cutting damage measuring 15 millimetres in length through the double fabric layer of the leg seam to a further 15 millimetres of tearing damage across the single layered main fabric portion of the underpants. The cutting damage has been caused by a sharp edged instrument and all of the damage is, in my opinion, recent in origin.</p> <p>Damage Area 4</p> <p>Damage Area 4, which was on the front central area of the underpants, measured 13 millimetres in length. In my opinion, this length of damage has been caused by a cutting action with a sharp edged instrument and is recent in origin.</p> <p>I confirm the truth and accuracy of this statement. I make this statement with the knowledge that it is to be used in court proceedings. I am aware that it is an offence to make a statement that is known by me to be false or intended by me to mislead.</p>

UTIC	Webcode	How would you state your findings in a report? (Use the same wording as you would to submit a report to the lead investigator and/or court).
p20241020	W089	<p>Area1: Pushing an awl, a needle or another point shape tool through the stitch followed by tearing.</p> <p>Area2: Seam separation - the seam threads have come loose, although neither of these two threads has been severed.</p> <p>Area3: The hem was cut and the defect was then extended by tearing. The garment was not washed after the defect was made. This can be seen at the thread ends of the cut part - the fibers of the individual thread ends are still in one plane.</p> <p>Area4: The defect was cut with a sharp knife (e.g. scalpel) along a ruler. This garment was not washed, otherwise the edges of the defect would be wavy and the fibers of the individual cut thread ends would no longer be in one plane.</p>
p20241022	W093	<p>The damage in area 1 measures about 1 cm. The examination revealed that this fabric damage is a tear.</p> <p>The damage in area 2 measures about 2 cm. The examination revealed that this fabric damage is a seam separation.</p> <p>The damage in area 3 measures about 2,5 cm total. The examination revealed that this fabric damage is a combination of a cut and a tear.</p> <p>The damage in area 4 measures about 1,4 cm. The examination revealed that this fabric damage is a cut.</p>

UTIC	Webcode	How would you state your findings in a report? (Use the same wording as you would to submit a report to the lead investigator and/or court).
p20241023	W204	<p>Note: on the submission form ([redacted]) the item number was FTS-24-PD, whereas on the exhibit packaging it was FTS-24-FD. I have used the latter in this report.</p> <p>This item was a pair of bright pink size 14 'Fruit of the Loom' underwear in very good condition.</p> <p>Four areas of damage were present which had been designated 1-4 prior to submission. The aim of the examination was to examine areas 1-4 to determine the action that caused the damage to be created. Furthermore, to determine if it was possible to say if the underwear had been laundered since the damage in areas 3 and 4 was created. As requested, no examinations for any other evidence types were carried out.</p> <p>Areas 1-4 were examined with a white light source and a low magnification microscope on both sides of the fabric. All measurements provided are given in millimetres (mm) and are approximate.</p> <p>Area 1 was on the front right side of the underwear. It was a circular hole 6-7 mm in diameter which penetrated the fabric. The edges of the hole were stretched and distorted. The thread ends were a mix of being intact (i.e. with the threads of the loops still intact) and frayed.</p> <p>In my opinion, this could be a puncture from a blunt object or a tear such as if the fabric had caught on something and was 'pulled'.</p> <p>There was some linear formation to two sides of the hole which may or may not have been related to the damage. This could be assessed further if an implement thought to have created the damage was recovered.</p> <p>'Area 2 was on the left hip just below the waistband in the fabric on the seam. It was 15-20 mm long. Threads from the stitching joining the fabric together on both sides of the seam had unravelled but were still present and intact.</p> <p>In my opinion this is a rip. I have not evaluated the level of force required to create this damage.</p> <p>This can be considered further if this becomes relevant to the case.</p> <p>Area 3 was on the front lower edge and hem of the right leg. It was 25mm long and penetrated the fabric. The lower section of the damage went diagonally across the double-layered fabric of the hem. It had neat straight edges that lined up and there were some neat cut edges to the threads. The upper section was more distorted with a wider gap and more ragged threads and appeared to take a more vertical direction. 1</p> <p>In my opinion; this is a cut (lower section) with a tear (upper section). In my opinion, I was not able to form a conclusive opinion as to whether or not the underwear had been laundered since this damage was created.</p>

UTIC	Webcode	How would you state your findings in a report? (Use the same wording as you would to submit a report to the lead investigator and/or court).
p20241023 (Cont.)	W204	<p>Area 4 was on the front centre. It was 12-13 mm long, diagonal and penetrated the fabric. It showed a similar angle of orientation to area 3, however I have not considered this observation any further. This can be considered further if this becomes relevant to the case. It had neat straight edges that lined up and there were some neat cut edges to the threads. In my opinion, this is a cut by a bladed instrument such as a knife. I could not reliably determine if the implement was single or double edged. In my opinion, I was not able to form a conclusive opinion as to whether or not the underwear had been laundered since this damage was created.</p>
p20241024	W027	<p>The underwear (Item 1) was submitted to be examined for any damage present. If damage was present, the type of damage would be determined.</p> <p>Four areas of damage were observed and labeled as follows:</p> <p>Area 1: Defect located about 5.5 cm from the waistband on the left side.</p> <p>Area 2: Defect located along the seam of the right leg about 2 cm from the waistband (where the front and back panels are stitched together).</p> <p>Area 3: Defect at the left leg opening, extended 3.2 cm up towards the waistband near the crotch panel.</p> <p>Area 4: Defect towards the front center of the underwear, the furthest point of the defect is about 7 cm from the waistband.</p> <p>The defect observed in area 1 was approximately 1 cm in length, with an irregular shape. Pulled, loose threads with frayed ends were observed around the edges of the defect, and the material puckered/did not lay flat. Stereoscopic examination showed distortion to the knit construction. The individual fiber ends were both straight/neat and broken. In the opinion of the examiner, the defect in area 1 was tearing, possibly caused by a puncture action with a blunt tool.</p> <p>The defect in area 2 was approximately 1.5 cm in length. This defect was not easily detected on the outside as it was along the stitching that sewed the front and back panels together. Examination of the inside of the underwear showed an area of loosened seam stitching, causing the front and back panels to separate and create a hole. Distortion to the knit construction or frayed threads were not observed. Stereoscopic examination of the individual fiber ends showed both neat and broken fiber ends; however, this observation was also noted on the fiber ends where the material was still sewn together. In the opinion of the examiner, the defect in area 2 was created by normal wear and tear that resulted in seam separation.</p>



FTS

forensic testing services  
[www.forensic-testing.net](http://www.forensic-testing.net)

UTIC	Webcode	How would you state your findings in a report? (Use the same wording as you would to submit a report to the lead investigator and/or court).
p20241024 (Cont.)	W027	<p>The defect in area 3 was approximately 3.2 cm in length. The portion of the defect closest to the seam of the leg opening exhibited planar array with neat thread ends. Towards the end of the defect furthest from the leg opening, loose threads with frayed ends and non-planar array were observed. Along the length of the defect, a small nick was observed on the right side of the defect. Stereoscopic examination of the individual fiber ends near the leg opening to the stitching of the seam showed neat fiber ends. The individual fiber ends towards the other end of the defect furthest from the leg opening were a combination of neat, frayed, and/or broken. In the opinion of the examiner, the defect in area 3 was the result of both a cut and tear action. Two possible mechanisms include a puncture/tear with a dull or blunt tool and then a cut towards the leg opening, or cut with scissors at the stitching/leg opening end and then torn towards the waistband.</p> <p>The defect in area 4 was approximately 1.7 cm in length and was diagonal to the knit construction. The edges of the defect were neat along the entire length with no pulled threads, and exhibited planar array. Stereoscopic examination of the individual fiber ends showed neat fiber ends. In the opinion of the examiner, the defect in area 4 was caused by a stab-cut action. Due to the rather featureless defect, it cannot be determined if the tool was double-bladed or very sharp (such as a razor blade).</p>

UTIC	Webcode	How would you state your findings in a report? (Use the same wording as you would to submit a report to the lead investigator and/or court).
p20241026	W053	<p>We received underwear, made of pink knitwear. According to the label, the fabric consists of 50% cotton and 50% polyester. The underwear has an elastic waistband with the text 'fruit of the loom' on it. The underwear is in good general condition, but contains four areas of damage, numbered 1-4.</p> <ul style="list-style-type: none"> <li>• Damage 1 is located on the front right-side (as seen from the wearer). The damage contains frayed thread ends and the fabric around it is distorted. The appearance of the damage indicates tearing or penetration by a blunt object.</li> <li>• Damage 2 is located on the left side. The seam is separated due to fracture of a sewing thread. The sowing thread has a frayed appearance, and no indication for a sharp starter were found. The appearance of the damage indicates tearing of the stitching, leading to seam separation.</li> <li>• Damage 3 is located on the front right bottom. The damage consists of two parts: - One part, through the hem of the underwear, is oriented diagonally to the knit textile structure and contains straight thread ends. These are indications that this part is caused by cutting or penetration by a sharp-edged object – The other part contains frayed thread ends and the fabric it is slightly distorted. These are indications that this part is caused by tearing or penetration with a blunt object.</li> </ul> <p>The order in which the two parts were created is not clear.</p> <ul style="list-style-type: none"> <li>• Damage 4 is located on the front right side. The damage is oriented diagonally to the textile structure, it contains straight thread ends and loop snippets. The appearance of the damage is indicative of a cut (made by a sharp-edged object).</li> </ul> <p>We did not observe indications that any of the observed damages were laundered. However, such indications may be subtle or absent.</p>
p20241027	W136	<p>Two recent damages were observed that correspond to a cut (damage 4) and a cut associated to a tear (damage 3).</p> <p>Two other damages concern a tear (damage 1) and a seam separation (damage 2). Both cannot be formally assessed as a recent damage and may be older.</p>

UTIC	Webcode	How would you state your findings in a report? (Use the same wording as you would to submit a report to the lead investigator and/or court).
p20241028	W051	<p>Four areas of damage were found on the pair of underwear.</p> <ol style="list-style-type: none"> <li>1. Area "1" was a recent tear damage, measuring an area of 10mm by 10mm, found on the front right region.</li> <li>2. Area "2" was a recent seam separation, measuring 20mm long, found on the left side seam.</li> <li>3. Area "3" was a recent damage with a section of cut measuring 16mm joined to a section tear measuring 13mm, found on the front right bottom hem region.</li> <li>4. Area "4" was a recent cut damage, measuring 15mm long, found on the front right region.</li> </ol> <p><b>Note:</b></p> <ol style="list-style-type: none"> <li>1. All measurements are approximate.</li> <li>2. In the description of clothing, the orientation (left and right) are with respect to the wearer.</li> <li>3. "Recent" refers to damage on a garment that has not been laundered, worn or used significantly prior to examination.</li> </ol>
p20241031	W126	<p><b>DAMAGE FEATURE 1 –</b> In our opinion, this damage has features typical / characteristic of recent puncture-type damage created by forcing a blunted implement, possibly a finger or implement such as a screwdriver, through the fabric.</p> <p><b>DAMAGE FEATURE 2 –</b> In our opinion, this is a recent seam separation, resulting from 'force' being applied across the seam in some manner, causing the seam stitching to break and the seam to come apart.</p> <p><b>DAMAGE FEATURE 3 –</b> In our opinion, this damage has features typical / characteristic of both cutting and tearing, and has been caused by cutting through the hem of the right leg of the underwear, and then extending the damage by pulling across the cut, causing the fabric to tear. In our opinion, the appearance of the damage is such that it is not possible to determine if the damage is recent in terms of wear, or if the underwear had been laundered after the damage was caused (i.e. inconclusive).</p> <p><b>DAMAGE FEATURE 4 –</b> In our opinion, this damage has features typical / characteristic of a recent cut, caused by a sharp bladed implement.</p>

UTIC	Webcode	How would you state your findings in a report? (Use the same wording as you would to submit a report to the lead investigator and/or court).
p20241032	W126	<p>This item comprised a pair of pink 'Fruit of the Loom' shorts-style pants. The pants were examined and the following areas of damage observed:</p> <p>7 mm by 9 mm puncture in the upper right front.</p> <p>17 mm split seam in the upper left outer aspect.</p> <p>17 mm recent cut with an associated 11 mm tear in the lower front right leg opening.</p> <p>11 mm recent cut in the mid centre front.</p> <p>An area of damage described as being recently formed indicates the damage has not been subjected to significant washing or wear since the damage occurred.</p> <p>Split seams occur when seam stitching is broken by an external physical force, such as a pull or stretching, or by wear.</p> <p>Tears are the result of a severance produced by pulling a fabric apart. This pulling action may be accidental or deliberate.</p> <p>Cuts are a fabric severance produced by a sharp-edged instrument.</p> <p>As we have not been provided with any information in relation to this incident we are unable to evaluate our findings further.</p>
p20241033	W126	<p>[redacted]</p> <p>Damage PT FST-24-FD (UTIC p20241033)</p> <p>The underwear was examined and four areas of damage were found as follows:</p> <p>A tear approximately 12mm on the upper right front. In our opinion, this damage could have been caused by the fabric having been pulled with sufficient force to cause the fabric to tear. In our opinion, this damage was of indeterminate age.</p> <p>A split in the seam approximately 18mm along the outer aspect of the upper left. In our opinion, this damage could have been caused by the seam having been pulled apart with sufficient force to cause the stitching to break and the seam to separate. In our opinion, this damage was of indeterminate age.</p> <p>A cut measuring approximately 18mm in length through the hem on the lower front of the right leg with a tear extending from the cut for approximately 13mm. In our opinion, this damage could have been caused as a result of a sharp edged implement, such as a knife, penetrating and severing the fabric, including through the hem, then the fabric having been pulled with sufficient force to cause the fabric to tear. In our opinion, this damage appeared recent in that it does not appear to have been washed or worn to a significant extent since the damage occurred.</p> <p>A stab cut measuring approximately 12mm in length near the mid front. In our opinion, this damage could have been caused as a result of a sharp edged implement, such as a knife, penetrating the fabric point first and severing it. In our opinion, this damage appeared recent in that it does not appear to have been washed or worn to a significant extent since the damage occurred.</p>

UTIC	Webcode	How would you state your findings in a report? (Use the same wording as you would to submit a report to the lead investigator and/or court).
p20241034	W126	<p>The pants were examined and four areas of damage were noted.</p> <p>A hole was noted in the upper right front which measured approximately 8mm by 10mm in size. In our opinion, this was a puncture hole which was recent in appearance such that it had not been subjected to repeated washing/wear.</p> <p>An area of damage was noted in the upper left side seam which measured approximately 25mm in length. In our opinion, this damage was as a result the seam thread being unravelled at this area causing seam separation and was recent in appearance such that it had not been subjected to repeated washing/wear.</p> <p>A further area of damage was noted in the front of the right leg hem. This damage was noted to consist of a cut, which measured approximately 15mm in length, that extended to a tear, which measured approximately 10mm in length. The fabric was noted to have been cut through the hem and then torn upwards. In our opinion, this damage was recent in appearance such that it had not been subjected to repeated washing/wear.</p> <p>The fourth area of damage was a linear severance of the fabric in the mid front, which measured approximately 15mm in length. In our opinion, this was a stab cut caused by a bladed implement and was recent in appearance such that it had not been subjected to repeated washing/wear.</p>
p20241035	W162	<p>The results extremely strongly support that area 1 was made by tearing.</p> <p>The results extremely strongly support that area 2 was made by seam separation.</p> <p>The results extremely strongly support that one part of the damage in area 3 was made by a sharp-edged tool and that another part of the damage was made by tearing. The results are inconclusive regarding whether the underwear has been laundered or not after the damage in area 3 was made.</p> <p>The results extremely strongly support that the damage in area 4 was made by a sharp-edged tool. The results extremely strongly support that the underwear has not been laundered after the damage in area 4 was made.</p>

UTIC	Webcode	How would you state your findings in a report? (Use the same wording as you would to submit a report to the lead investigator and/or court).
p20241036	W055	<p>1. Exhibit 1 is a light pink pair of underwear with four circled areas of fabric damage.</p> <p>a. Area 1 is a fabric separation approximately two centimeters in length located on the anatomical right front hip/upper crotch area. This fabric separation is consistent with having been torn.</p> <p>b. Area 2 is a seam separation approximately two centimeters in length located on the anatomical left hip. No conclusion could be reached as to the action which caused the seam separation observed due to insufficient characteristics present at the damage location .</p> <p>c. Area 3 is a fabric separation approximately two centimeters in length located on the lower anatomical right bottom leg hem. This fabric separation is consistent with having been cut and torn.</p> <p>d. Area 4 is a fabric separation approximately one centimeter length located on the front anatomical right/center crotch area. This fabric separation is consistent with having been cut.</p> <p>2. Alterations to the underwear between the original time of damage and the performance of testing can affect the observed results and conclusions</p>

UTIC	Webcode	How would you state your findings in a report? (Use the same wording as you would to submit a report to the lead investigator and/or court).
p20241037	W055	<p>1. Exhibit 1 (shirt) was examined for damage to textile construction. Four (4) areas of damage were observed (areas marked one through four).</p> <p>2. Area 1 is located on the front right side of the garment, approximately two (2) inches below the waistband. This separation is approximately one half (1/2) inch in length. This separation is consistent with having been torn.</p> <p>3. Area 2 is located on the left side seam, approximately one (1) inch below the waistband. This seam separation is approximately one half (1/2) inch in length. There is severed attaching thread in the area of the seam separation. No conclusion could be reached as to the action which caused the severed attaching thread at the seam separation due to insufficient characteristics.</p> <p>4. Area 3 is located on the right front leg hem and fabric (near the crotch area). This separation is approximately one (1) inch in length. This separation is consistent with having been cut and torn.</p> <p>5. Area 4 is located on the right side of the garment, approximately two (2) inches below the waistband. This separation is approximately one half (1/2) inch in length. This separation is consistent with having been cut.</p> <p>6. Alterations to Exhibit 1 between the original time of damage and the performance of testing can affect the observed results and conclusions.</p>

12) How long did it take to complete this test (in hours)? Please report actual analytical hours only.

13) Did you find this test to be a fair test of the process of the interpretation of fabric damage?

A)  Yes

B)  No

UTIC	Webcode	How long did it take to complete this test (in hours)? Please report actual analytical hours only.	Did you find this test to be a fair test of the process of the interpretation of fabric damage?
p20241001	W182	2	Yes
p20241002	W051	6	Yes

UTIC	Webcode	How long did it take to complete this test (in hours)? Please report actual analytical hours only.	Did you find this test to be a fair test of the process of the interpretation of fabric damage?
p20241003	W061	1.5	Yes
p20241004	W061	5	Yes
p20241005	W061	1	Yes
p20241006	W179	2	Yes
p20241007	W040	1	Yes
p20241008	W181	three hours	Yes
p20241009	W163	4h15	Yes
p20241010	W163	2.5	Yes
p20241011	W163	3	Yes
p20241012	W128	1h	Yes
p20241013	W132	10	Yes
p20241014	W160	2	Yes
p20241015	W088	8	Yes
p20241016	W052	1 hour	Yes
p20241018	W052	1.5	Yes
p20241019	W052	2 hours	Yes
p20241020	W089	0.5 h Microscope +1.5 h Fotos	Yes
p20241022	W093	1	Yes
p20241023	W204	approx 10 hours	Yes
p20241024	W027	4	Yes
p20241026	W053	7	Yes
p20241027	W136	2h	No
p20241028	W051	5	Yes
p20241031	W126	5.25 hours	Yes
p20241032	W126	3	No
p20241033	W126	2 hour 30 minutes	Yes
p20241034	W126	3	Yes
p20241035	W162	30	Yes
p20241036	W055	2	Yes
p20241037	W055	8	Yes

14) How would you change the aspects of the test (i.e. scenario, test samples, question sections, report format) to improve a future version of this test? Comments and suggestions are welcome.

Additionally, this question is a means to provide you with an opportunity to explain or include information about your findings or interpretation, as needed. In order to maintain confidentiality, please refrain from including information specific to your laboratory.

UTIC	Webcode	How would you change the aspects of the test (i.e. scenario, test samples, question sections, report format) to improve a future version of this test? Comments and suggestions are welcome.	FTS Response
p20241002	W051	[pre-distribution comment]	
p20241003	W061	To test the ability of a practitioner to search a garment for damage, it would be nice to not have the garment marked with the area of TD already circled. I understand that this may make looking at the results of the test much more difficult for FTS.	Thank you for the suggestion!
p20241008	W181	I wouldn't change anything, the format meets our quality standards.	
p20241011	W163	<p>The apparently very new condition of the knickers makes the issue of whether they had been laundered more challenging - we more often than not deal with garments that are well worn and/or grubby and so laundering can at times be easier to assess. We would also consider other aspects, such as whether there was a detergent odour.</p> <p>Quite often, we need to consider general wear and tear versus damage that may be incident related. I appreciate though that this would be harder to recreate and make consistent for multiple participants.</p> <p>We also have cases where we need to discuss what could have caused the damage, this can include creating test damage marks with items of interest.</p>	Thank you clarifying your response.

UTIC	Webcode	How would you change the aspects of the test (i.e. scenario, test samples, question sections, report format) to improve a future version of this test? Comments and suggestions are welcome.	FTS Response
p20241012	W128	We would like to have a suspected weapon integrated in the test. This would make it more related to casework.	Thank you for the suggestion. We will consider this for future PT designs.
p20241014	W160	Scenario differentiation Hp vs Hd. Some back story/case scenario would help with formulating written report.	FTS does not include case scenarios as they are entirely contrived. Evidence significance and interpretation are not assessed by FTS.
p20241015	W088	For damage area marked "2," current laboratory policy only makes determinations for cut vs torn. This particular damaged area did not fall into either of these categories. Therefore, it was marked as "inconclusive."	Thank you for clarifying your results.
p20241024	W027	I believe that Area 2 was caused by normal wear and tear that resulted in seam separation. In my lab, this is different than saying "tear" so that is why I selected "other" along with "seam separation" and not "tear". I would suggest adding a box so that the examiner can add a clarifying response instead of only being allowed to check other. Especially because this could lead to an incorrect answer per the provider.	Thank you for clarifying your results.
p20241026	W053	The damages are very clean and simple. The proposed answers do not allow for uncertainty. The description of categories is not defined in detail. (can a seam separation be a tear? Should a stab with a sharpie pen be classified as a tear? )	<p>As a PT provider, homogeneity among tests is important and is limiting to the type and extent of damage inflicted on each item.</p> <p>If at any time there is clarification needed for a PT item or question, please contact <a href="mailto:rsmith@forsci.com">rsmith@forsci.com</a>.</p>

UTIC	Webcode	<p>How would you change the aspects of the test (i.e. scenario, test samples, question sections, report format) to improve a future version of this test? Comments and suggestions are welcome.</p>	FTS Response
p20241027	W136	<p>We suspect the use of scalpels to create (some) of the damages. This is not realistic in real-case scenarios.</p>	<p>Please see comment for p20241026.</p>
p20241032	W126	<p>We would normally evaluate our damage findings in relation to the case circumstances. Without a scenario we are unable to do this so only basic interpretation is included. Providing some basic case circumstances would therefore be beneficial for future damage trials. For multiple choice questions which include 'Other', 'Inconclusive' and 'N/A' options it would be beneficial to have a free text box to clarify reasoning for these selections. In relation to Question 5, where we have selected type of damage as 'Other' using our damage glossary SOP we would classify this as a puncture.</p>	<p>Please see FTS Response for p20241014.</p> <p>Thank you for clarifying your responses.</p>
p20241034	W126	<p>For area 1 we selected "other" as we identified this damage as a puncture hole.</p> <p>For the question "Has the garment been laundered since damage took place?", at our laboratory we would only give an opinion on whether an area of damage has been subjected to REPEATED washing/wear since it was created, we would not give an opinion on whether it has been washed ONCE.</p>	<p>Thank you for clarifying your response.</p> <p>All areas laundered by FTS are washed and dried a minimum of three times with other fabric garments.</p>

UTIC	Webcode	How would you change the aspects of the test (i.e. scenario, test samples, question sections, report format) to improve a future version of this test? Comments and suggestions are welcome.	FTS Response
p20241035	W162	Our laboratory does not usually make the determination laundered/not laundered but if we did, the conclusions would be expressed as above.	Thank you for clarifying your results.