

# 10 PHYSICAL QUALITY

## Overview

Establishing a Physical Quality Program can help your lab identify and eliminate physical quality problems before customer's films are damaged. Even when you follow the best housekeeping and processing procedures, there will be occasions when damage occurs. Establishing an active housekeeping program, monitoring processing equipment, and establishing an outgoing quality audit can greatly reduce the likelihood of problems.

To be successful, laboratory management must support the physical quality program and actively involve laboratory personnel. Inspectors and auditors must be empowered to initiate corrective actions as soon as a problem is recognized. The suggestions offered in this section are considered good practice based on years of experience and customer satisfaction with processed KODACHROME Film.

This section deals with two different types of physical quality evaluations.

### Certification of splicing and processing equipment

This evaluation looks at test films prespliced on the splicer that are used for the day's production and processed through the K-LAB Processor. The splicing and processing follows the routine cleaning and morning start-up procedures on both pieces of equipment. It provides you with a "last look" at the system before you begin handling customer films. Labs find this evaluation helpful in their efforts to reduce physical defects such as blue spots that are caused by dirt in the splicer and the front end of the Processor. Certification protects you from catastrophic problems with customer films by using test films and a thorough evaluation procedure prior to the introduction of the first roll of customer's film.

### Outgoing quality audits and certification of mounting equipment

The mounters should be certified prior to mounting the first roll of customer film. Scratches, sealing problems, etc. should be eliminated before the customer's film is mounted. Once you begin mounting customers' films, an outgoing quality audit provides you with an overview of the total system quality. At a minimum, the film must be mounted before it is audited. You may choose to audit films that have been mounted, billed and ready for shipment. The further downstream you conduct the audit, the greater the number of laboratory operations you can check.

## Physical Quality Inspector

A responsible, trained inspector must ensure that proper sampling is taken and that resulting data is recorded on the data sheets. Inspectors must be familiar with:

- Processing operations, either by having worked in film processing or by special training
- Pre-processing procedures
- Machine operation
- Post-processing methods

Knowledge in these operations is essential in order to assign defects to the proper category. The lab should identify and train a backup for the physical quality inspector so there is continuity during absences.

## Physical Quality Inspection Workplace

A dedicated inspection room is required to properly evaluate films for physical defects. This room should have subdued lighting. The ability to "go dark" is helpful in some inspection instances. This room should have the following suggested equipment:

- Work table
- Dynak continuous projector (recommended, but see "General" on page 10-2)
- Flat white surface for projection
- Slide Projector with a stack loader (110 to 150 mm *f*/3.5 lens)
- Light box for evaluating with transmitted light
- 4X loupe
- 10X loupe
- High-intensity inspection lamp
- Slide width gauge (available through Kodak)
- Parallel plate gauge (available through Kodak)
- Camel hair brush
- Lint-free gloves
- Demerits summary sheets
- Air supply (canned or building)

# Certifying the Processing Equipment

## Overview

To meet the goals of a Physical Quality Program, the lab must establish, record, and check its preparation and processing equipment upon shift start-up and routinely sample its production to verify quality.

### What is needed:

- A responsible, trained inspector to take proper sampling and record the resulting data
- A trained backup for this person
- Defects tabulation summary sheets (Table 10-1)
- An evaluation of the workplace and equipment

## Frequency of Evaluation

Examine 2 to 3 rolls of SO-604 D-max film and 2 rolls of splice/scratch KODACHROME 200 Test Film SO-446 from each splicer upon production start-up.

**Note:** *More than 2 blue spots and/or any other defects (such as water spots, pressure marks, kinks, fog, etc.) per 36-exposure roll is an indication of unacceptable quality.*

- Repeat the certification requirements (recertification) for each splicer after 4 master rolls of customer film.
- Project and evaluate a minimum of 5 percent of customer product. This equates to 10 rolls for every 200 rolls processed.
- Repeat the certification on a pre-splicer if a certified pre-splicer is shutdown for maintenance and then restarted.

## Evaluation Procedure

### Customer

1. Make sure that no more than 60 to 80 rolls of customer film are spliced per master roll.
2. When viewing customer film, count any imperfection that is not readily visible because it is located in a dense portion of the scene if your inspector feels it would be visible if it were in a highlight area.

### General

1. With a Dynak continuous projector view the projected film using a wave-like pattern with your eyes rather than looking at a fixed point on the image.

Although using a KODAK CAROUSEL Projector may not be as convenient or as detailed an inspection as that done with a continuous projector, it is still a good tool to use when evaluating physical quality. The disadvantage is that you must mount each roll of film, which adds extra cost for the cardboard or plastic mounts, in addition to the labor cost.

Evaluating physical quality using a light viewing box and a 4X loupe is not recommended as a tool to assess physical quality. In some cases, this is a better approach than mounting because you can find repeat patterns. Problems associated with this approach are additional film handling and limited viewing

capability to assess physical quality, defects, and trends.

2. When a defect is found, determine the cause of the problem (Processor, splicer) and the magnitude (one roll, master roll).
3. Classify defects by imperfection and record them on the demerits summary sheets.

**Note:** *When evaluating film, count only those defects that appear beyond frame 00 and up to frame 36. Do not count those defects appearing before frame 00 and after frame 36. They may, however, indicate a problem that needs to be addressed. Physical defects in the perforations area caused by the lab may dissatisfy customers who do not have their film mounted.*

## Ensuring Physical Quality

Proper cleaning and maintenance of the processing equipment can greatly improve the physical quality evaluation. The following is a list of recommendations for cleaning and maintenance of the processing equipment:

- Splicer, for presplicing:
  - blow compressed air through the splicer
  - vacuum all areas of the splicer
  - clean stripper tires with water
  - clean the magazine for stock roll (blow, wipe with water and vacuum)
- Processor, at start up:
  - Clean all feed head rollers
  - Check all squeegee blades for wear, and adjust as necessary
  - Check the static eliminator brushes at the take-off
- Clean the inspection workstation, before each inspection, to prevent further accumulation of dust or dirt on the customer's product.

**Table 10-1 Physical Quality Rating Summary - Certification**

Operator: _____ Date: _____ Time: _____ Week: _____				
Rolls Inspected: 135-24: _____ 135-36 _____ Total Rolls: _____				
Type of Inspection: ___ Certify ___ Recertify ___ Customer				
NUMBER OF DEFECTS				
Defect Classification	Certification	Recertification	Customer	Total Defects
<b>Preparation</b>				
A. Pressure marks				
B. Digs and cinches				
C. Scratches (base)				
D. Scratches (emulsion)				
E. Fog				
F. Static				
G. Torn perms				
H. Splice marks				
I. Dirt				
J. Blue spots				
<b>Processing</b>				
A. Rem-Jet backing				
B. Chemical spots/streaks				
C. Water spots				
D. Scum				
E. Dirt				
F. Fog (processing)				
G. Digs				
H. Scratches (base)				
I. Scratches (emulsion)				
J. Fingerprints				
K. Miscellaneous				
<b>TOTAL</b>				

GRAND TOTAL OF DEFECTS \_\_\_\_\_  
 NUMBER OF ROLLS \_\_\_\_\_  
**DEFECTS PER ROLL** \_\_\_\_\_

**Table 10-2 Physical Quality Rating Summary - Certification (Example)**

Operator: <u>  A.S.  </u> Date: <u>  8/28/96  </u> Time: <u>          </u> Week: <u>  8/26 - 8/30/96  </u>				
Rolls Inspected: 135-24: <u>  3  </u> 135-36 <u>  3  </u> Total Rolls: <u>  3  </u>				
Type of Inspection: <u>  </u> Certify <u>  </u> Recertify <u>  </u> Customer				
NUMBER OF DEFECTS				
Defect Classification	Certification	Recertification	Customer	Total Defects
<b>Preparation</b>				
A. Pressure marks	1		1	2
B. Digs and cinches				
C. Scratches (base)				
D. Scratches (emulsion)	2			2
E. Fog				
F. Static	1			1
G. Torn perms			1	1
H. Splice marks				
I. Dirt				
J. Blue spots	2		2	4
<b>Processing</b>				
A. Rem-Jet backing				
B. Chemical spots/streaks				
C. Water spots			1	1
D. Scum				
E. Dirt				
F. Fog (processing)			2	2
G. Digs				
H. Scratches (base)			1	1
I. Scratches (emulsion)				
J. Fingerprints				
K. Miscellaneous				
<b>TOTAL</b>	6		8	14

GRAND TOTAL OF DEFECTS	14
NUMBER OF ROLLS	6
DEFECTS PER ROLL	2.3

## Outgoing Quality Audit

### Overview

To ensure post-processing quality, the lab must certify the mounting and sleeving operation before customer product is run, and routinely sample and inspect customer's film. Enter this evaluation data in the demerits summary sheets.

### What is needed:

- A responsible, trained inspector to take proper sampling and to record the resulting data on the demerits summary sheets. The inspector must have knowledge of the preparation, processing, mounting, and packaging operations. This person will be responsible for completely evaluating each film, its repackaging, and keeping the necessary records.
- A trained backup for this person
- Demerits summary sheets, see Table 10-3
- An evaluation workplace consisting of the following equipment:
  - KODAK CAROUSEL Projector with stack loader (110 to 150 mm *f*/3.5 lens)
  - Flat white surface for projection
  - Viewer light box for evaluating with transmitted light
  - Inspection lamp—high intensity
  - Slide width gauge (available through Kodak)
  - Parallel plate gauge (available through Kodak)
  - 10X loupe
  - 4X loupe
  - Camel hair brush
  - Lint-free cotton gloves
  - Defects tabulation sheets
  - Air supply (canned or building)

This area should have subdued lighting. The ability to “go dark” is helpful in some instances.

### Frequency of Evaluation

- Start-up of each mounter requires certification of the equipment for production readiness. This consists of checking the mounts for quality of print and closure, checking for scratches using leader, and checking the first customer order.
- Randomly inspect a minimum of 3 rolls per mounter system\* each shift (0.5% of the work). Some labs may have a heavier product flow and 3 rolls may not satisfy quality needs.

**Example:** Three rolls per 8-hour shift could satisfy a production schedule of 600 customer rolls.

If you are resplicing KODACHROME Film on multiple splicers, inspect more than 3 rolls per mounter, to take into account the different splicer equipment. The more splicers

you use, the greater the number of rolls that you should inspect for outgoing quality.

### Specific Evaluation Recommendations

- Wear lint-free gloves while inspecting
- Check for film identification
- Identify packaging information
- Check for misboxed slides
- Check film strips for unmounted frames
- Check that film is not reversed in mount
- Check that film is mounted in correct mount
- Check for film damage (inspect all frames by reflected light; both base and emulsion side)
- Check numbering on each mount while checking mount seal and warp
- Inspect frame on projection
- Sort into two piles; satisfactory and defective
- Sort defective slides as to type of defects
- Assess severity of the defect for each slide and record demerits per unit
- Count the slides (correct errors, notify supervision of any repeating problems)
- For a serious defect, take appropriate action per lab procedures relative to stuffers, replacement rolls, etc.
- Enter defects in the demerits summary sheets
- Repack the order in correct order
- Dispatch completed orders for shipment

### Cleaning Recommendations

#### Mounters

- Clean the area at start-up and again within an 8-hour shift
- Vacuum and inspect the mounts, if using cardboard mounts

#### Inspection Area

- Clean the inspection area each shift to prevent accumulation of dust or dirt on the customer's product

---

\* System refers to the combination of splicer, processor, and mounter.

## General Evaluation Procedure for the Inspector

1. When viewing customer's film, focus on the image.
2. Count any imperfection that is not readily visible because it is located in a dense portion of the scene if the inspector feels that it would be visible if it fell in a highlight area.
3. Count imperfections if they are objectionable with reflected light, even though they do not project.
4. When a defect is found, the inspector or operator must determine the magnitude of the problem (one roll or multiple rolls) in order to pinpoint the cause—mounter, Processor, splicer, customer.

## Definition of Terms

<b>Unit</b>	A mounted transparency or slide of KODACHROME film.
<b>Defect</b>	The failure of the product to conform to the specifications for physical quality.
<b>Demerit</b>	A measure for scoring the severity of a defect. Rating defects in terms of severity is a means of relating their effects to total customer satisfaction.
<b>Classes of defects:</b>	
• 100 demerits/unit	Imperfections of certain categories, or combinations of category and severity, that are certain to cause a customer to be unable to use the product. <b>Examples:</b> <ul style="list-style-type: none"><li>• Wrong process</li><li>• Missing film</li><li>• Anything that destructs the image chemically or physically.</li></ul>
• 50 demerits/unit	Imperfections that are likely to cause a customer to be able to use the product only as a photographic record rather than for customary purposes. <b>Examples:</b> <ul style="list-style-type: none"><li>• Taped-together, torn film</li><li>• Image present, but not good quality</li><li>• Multiple or severe base scratches</li></ul>
• 10 demerit/unit	Imperfections that are likely to be readily obvious to the customer, but ordinarily do not affect the customary use of the product. <b>Examples:</b> <ul style="list-style-type: none"><li>• Mount visibly open</li><li>• Full frame not mounted</li><li>• Projecting, but light base scratch</li></ul>
• 1 demerit/unit	Imperfections that, under normal circumstances, are not likely to produce a negative reaction from the customer. <b>Examples:</b> <ul style="list-style-type: none"><li>• Incorrect mount</li><li>• Light base scratch, not projecting</li></ul>

## **Imperfection List and Physical Quality Slide Samples**

An Imperfection List with possible causes (shown on page 10-12 and Physical Quality Slide Samples (shown on page 10-14) are included as tools in the evaluation of Physical Quality.

## **Physical Quality Rating**

### **Overview**

The emphasis for a Physical Quality Rating Program is to identify and rate the quality levels of defects. To measure the success of the program, collect and record data over a long-term period. Figure 10-1 is an example of a plot showing the audit data over time.

Group the data by work area (preparation, processing, finishing) where physical quality can be affected. The objective is to create and use the data to improve your product quality—not to create numbers for the sake of the numbers.

### **Collecting Data**

The physical quality inspector evaluates the work, classifies the defects by degree of severity, and records them on the appropriate data sheet. Subjective judgment may help when defects fall in the marginal area between two different severity classifications. Scratches, dirt, and various spots are defects of this type.

### **Summarizing the Physical Quality Rating**

Compile a summary of the defects as an aid in identifying physical problem areas and/or trends.

Tables 10-2 and 10-4 show examples of properly completed Physical Quality rating sheets.

1. Make copies of the blank summary sheets for your use.
2. Give the results of the Physical Quality Rating Program directly to your management.
3. Management should review the results with the various production areas and institute corrective action to improve the physical quality in the plant.
4. Identical physical quality inspection procedures and observe standards in all processing laboratories so the lab can evaluate them on a comparable basis.

## Physical Quality Indexes

### Overview

You can calculate the index for processing physical quality or for outgoing physical quality. With the data you obtain from the summary sheets, calculate the quality indexes using one of the following procedures.

### Calculating Processing Physical Quality Indexes

1. Referring to Table 10-2, enter the number of rolls inspected and the total at the top of the summary sheet.
2. Figure the total number of defects found in each category by class, and enter these in the space for each class.
3. From the total number of defects found, calculate the defects per roll.

#### Acceptable level of defects:

No more than 2 blue spots (or any other defects such as scratches, dirt, pressure marks, etc.) per 36-exposure rolls are allowed.

### Calculating Outgoing Physical Quality Indexes

**Note:** *This procedure is for post-processing quality.*



#### Important

**For the next step, count only the units actually inspected.**

1. Referring to Table 10-4, convert the total rolls of film inspected into units, and enter them in the appropriate spaces at the top of the summary sheet (each slide = 1 unit). Under this system, the units for common roll film sizes are:  
 $135 \times 24 = 24$  units  
 $135 \times 36 = 36$  units
2. Total the defects found for each defect category by class, and enter them in the appropriate spaces for each class.
3. For each defect, multiply the number of defects times the severity, and add the values across the line in the demerits column.
4. Add the total demerits in the vertical column.
5. Multiply the demerits by 100, and divide this product by the number of units inspected to obtain the Index (demerits per hundred units).

#### Acceptable level of defects:

Six demerits per 100 units of film per week should be the limit for your program. Generally, labs operate at levels significantly better than this.

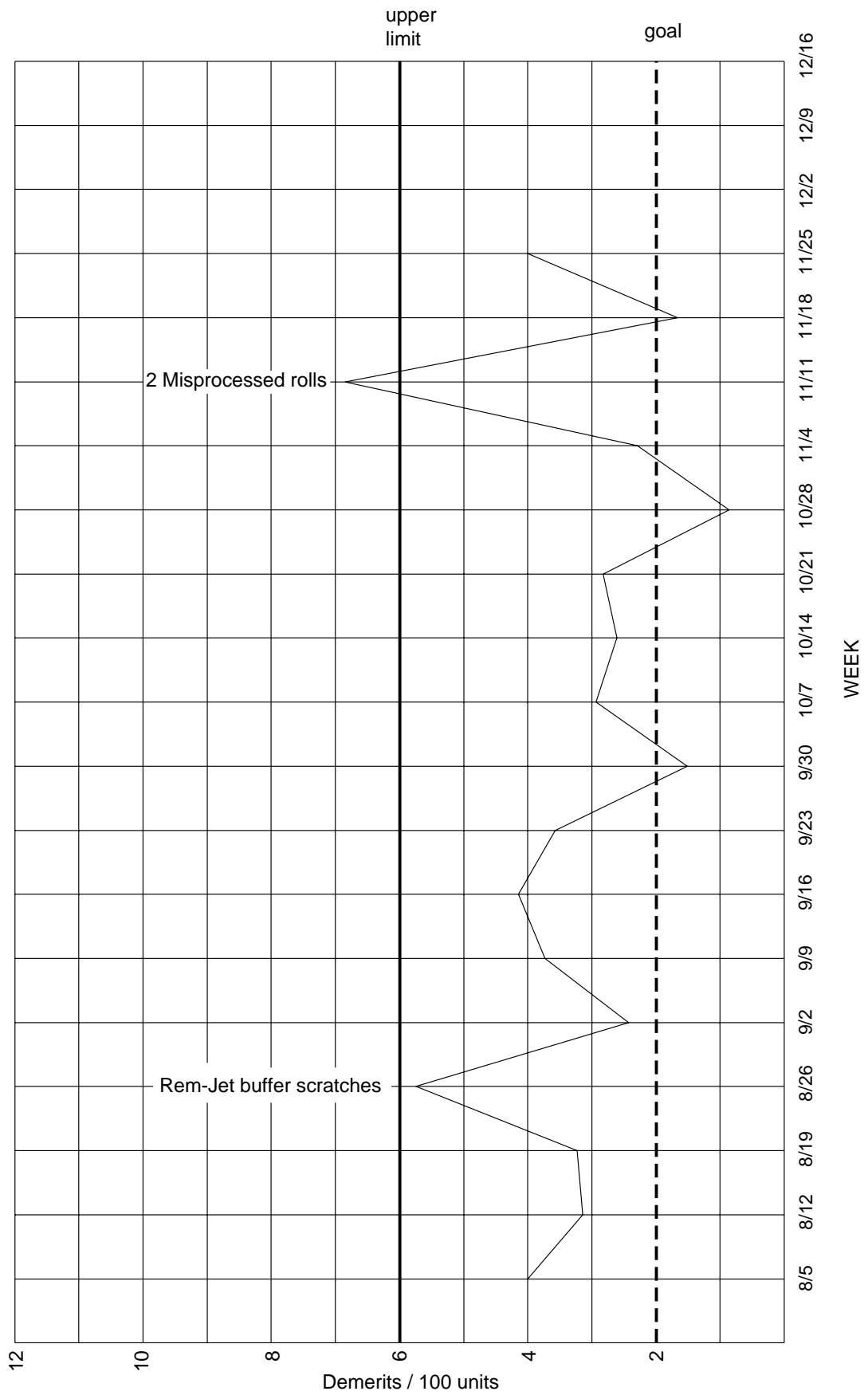
## Plotting Data

You may want to plot this data on a chart. Then visually you can determine if all film handling operations meet the Physical Quality goals of the program. These charts can be as simple or as elaborate as you wish. However, the simpler, the better.

An example of a chart is shown in Figure 10-1.



Figure 10-1 Plotting Data - Example



G128\_9008EC

**Table 10-3 Demerits Summary Sheet - Quality Audit**

Operator: _____ Week of: _____ Month: _____ Year: _____						
Rolls Inspected: 135-24: _____ 135-36 _____ Total Units: _____						
Splicer ID: _____ Processor ID: _____ Mounter ID: _____						
DEMERITS						
Defect Classification	100	50	10	1	Demerits	Index*
<b>Preparation</b>						
A. Pressure marks						
B. Digs and cinches						
C. Scratches (base)						
D. Scratches (emulsion)						
E. Fog						
F. Static						
G. Torn perfs						
H. Splice marks						
I. Dirt						
J. Blue spots						
<b>Processing</b>						
A. Rem-Jet backing						
B. Chemical spots/streaks						
C. Water spots						
D. Reticulation						
E. Scum						
F. Dirt						
G. Fog (processing)						
H. Digs						
I. Scratches						
J. Fingerprints						
K. Miscellaneous						
<b>Finishing</b>						
A. Packaging						
B. Unmounted slides						
C. Mixed film						
D. Mounts unsealed						
E. Mounts warped						
F. Mounts improperly folded						
G. Frame number and date stamp						
H. Press damage						
I. Slipped frame						
J. Frame list						
K. Cut frame						
L. Short frame						
M. Miscellaneous						
<b>TOTAL</b>						

**Index = Demerits x 100**  
**Number of Units**

GRAND TOTAL OF DEMERITS \_\_\_\_\_  
 NUMBER OF UNITS \_\_\_\_\_  
 DEMERITS PER 100 UNITS \_\_\_\_\_

\* Demerits per 100 units for each defect classification

**Table 10-4 Demerits Summary Sheet - Quality Audit (Example)**

Operator: <u>          A.S.          </u> Week of: <u>  8/26/98  </u> Month: <u>  August  </u> Year: <u>  1998  </u>						
Rolls Inspected: 135-24: <u>  40  </u> 135-36 <u>  60  </u> Total Units: <u>  3,120  </u>						
Splicer ID: <u>  A          </u> Processor ID: <u>  K-LAB          </u> Mounter ID: <u>  SEARY 1          </u>						
<b>DEMERITS</b>						
Defect Classification	100	50	10	1	Demerits	Index*
<b>Preparation</b>						
A. Pressure marks						0.06
B. Digs and cinches						
C. Scratches (base)						
D. Scratches (emulsion)						
E. Fog						
F. Static						
G. Torn perms						
H. Splice marks						
I. Dirt						
J. Blue spots			1	5	15	0.48
<b>Processing</b>						
A. Rem-Jet backing						
B. Chemical spots/streaks						
C. Water spots				3	3	.10
D. Reticulation						
E. Scum						
F. Dirt						
G. Fog (processing)						
H. Digs						
I. Scratches			3	15	45	1.44
J. Fingerprints						
K. Miscellaneous						
<b>Finishing</b>						
A. Packaging				6	6	0.19
B. Unmounted slides						
C. Mixed film						
D. Mounts unsealed						
E. Mounts warped						
F. Mounts improperly folded						
G. Frame number and date stamp			1		10	0.32
H. Press damage						
I. Slipped frame			1	5	15	0.48
J. Frame list						
K. Cut frame						
L. Short frame						
M. Miscellaneous						
<b>TOTAL</b>			6	34	94	3.01

**Index= Demerits x 100**  
**Number of Units**

GRAND TOTAL OF DEMERITS	94
NUMBER OF UNITS	3,120
DEMERRITS PER 100 UNITS	3.01

\* Demerits per 100 units for each defect classification

## Imperfection List - Preparation and Processing

Imperfection	Number of Demerits	Description
<b>Base scratch</b>	Depends on severity	Any frame with a base scratch on the base (support side). This can be short, repeating, throughout or multiple, and can occur during splicing, processing, or mounting operations.
<b>Blue spots</b>	Depends on severity	Blue spots are a result of small particles (dirt, metal, etc.) being wound up with the film. The pressure applied by the winding forces the particle against the emulsion side of the film. This pressure sensitizes the silver grains which are then developed early in the first developer rather than in the dye-forming steps of the process. Blue spots usually relate to splicing operation and to the feed section of the Processor.
<b>Cinches, digs</b>	Depends on severity	Any frame with small abrasions/cuts in the film layers, normally occurs during splicing or processing operation.
<b>Chemical spots</b>	Depends on severity	Spots or streaks relating to chemical(s) application most likely occur during processing.
<b>Contamination</b>	Depends on severity	Any foreign material can cause contamination and can occur either in the presplicing or processing operation.
<b>Dirt</b>	Depends on severity	Any frame with dirt adhered to either base or emulsion side is mostly occurring during processing.
<b>Emulsion scratch</b>	10 or higher, depending on severity	The scratch can be short, repeatable, throughout or multiple and can occur anywhere.
<b>Fingerprints</b>	Depends on severity	Any frame with a fingerprint on the emulsion or base side indicates an obvious film mishandling situation by the operator(s). Color fingerprints are caused by an operator handling raw or partially processed film with hands contaminated by chemicals. Normal fingerprints are caused by the operator touching dry processed film.
<b>Fog</b>	Depends on severity	Can be green, white, or red light, and can occur either in the splicer or during processing due to faulty safe lights in the machine room or any other light source.
<b>Folded edges (creases)</b>	Depends on severity	Any frame folded over on itself. Normally relates to Processor tension or spool alignments.
<b>Kinks, buckles, indents</b>	Depends on severity	Any frame showing stress from the film being pinched or twisted. Normally relates to splicing or to rewind operation of master roll before processing.
<b>Pressure</b>	Depends on severity	Any frame showing markings relating to something that has pressed the film tightly. Normally related to splicing or inspection operations.
<b>Splice transfer/glue marks</b>	Depends on severity	Pressure markings from the splice or marks from glue are usually a splicing operation type problem.
<b>Static</b>	Depends on severity	Multiple markings, very bright blue in color and often described as "tree branches" and "tacky." Static marks relate to an object (most often splice leader) having electrostatic attraction to the film surface. Usually occurs during the splicing operation.
<b>Torn film</b>	Depends on severity	This can be part of the perforations or severe enough to continue into the image area. Either a customer or splicer problem.
<b>Water spots</b>	Normally 1 to 10	Related to processing operation, water markings left from excess water due to poor squeegees and dryer problems.
<b>Wrong process</b>	Normally 100	This results in unacceptable processing for the customer.

## Imperfection List - Finishing

Imperfection	Number of Demerits	Description
<b>Base scratch</b>	Depends on severity	Any frame with a base scratch on the base (support side). This can be short, repeating, throughout, or multiple, and can occur during splicing, processing, or mounting operations.
<b>Date stamp error</b>	10 per roll	Incorrect or missing illegible date stamp.
<b>Frame numbering error</b>	1 per frame	Any frame with incorrect numbering such as a number missing, skipped, illegible, poor impression, or duplicated.
<b>Frame not mounted</b>	10 per frame	Any frame that could have been mounted, but was overlooked, falls in this category.
<b>Mount folding</b>	1 to 10 per frame	Any frame with the mount incorrectly folded in a way that it will not go through the mount fold gauge. (The mount not passing the 1.99 in. aperture constitutes 1 demerit. If it does not pass the 2.00 in. aperture, charge 10 demerits).
<b>Mount open</b>	10 per frame	Mount is visibly open with the two sides open.
<b>Mount warp</b>	1 to 10 per frame	Any frame with a curvature of the mount that prevents it from dropping through the parallel plate gauge by its own weight.  Does not drop through 0.076 in. gauge = 1 demerit Does not drop through 0.084 in. gauge = 10 demerits
<b>Mount torn</b>	1 to 10 per frame	Mount damaged by mounting press (as long as the film is not damaged).
<b>Two frames in mount</b>	10 per occurrence	Two customer frames in one mount.
<b>Overlapping frames</b>	1 to 10 per occurrence	Overlap between frames with one perforation pitch is 1 demerit. Overlap between frames with more than one perforation pitch is 10 demerits.
<b>Packaging</b>	1 per occurrence	Refers to damage to the outer packaging container as it leaves the mounting operation.
<b>Partial frames</b>	10 per frame	Mounted and exposed area less than 1.1 in. or not mounted and exposed area more than 1.2 in.
<b>Press damage</b>	Depends of severity	Any damage to the mount relating to the press operation. An example of this would be scorch marks on the film.
<b>Reversed film in mount</b>	1 per occurrence	Film reversed in mount, base to printing on front.
<b>Slipped frame/off-center frame</b>	Depends of severity	Any frame with the film incorrectly positioned such as slipped frame (horizontal border showing) or frame line (vertical border showing).
<b>Incorrect stuffer</b>	1 per occurrence	Incorrect material enclosed. Example would be promotional leaflet, wrong explanation of why film is missing or not mounted).
<b>Other examples:</b>		
Non-standard frames chopped	1 to 10 per frame	
Partial picture from preceding roll	10 per frame	
Film scrap mounted with frame	10 per occurrence	
Incorrect box used	1 per roll	
Slides not oriented in box	1 per roll	
Twin check/splice ID missing	10 per occurrence	
Missing film	100 per occurrence	

## Physical Quality Slide Samples

Slide ID#	Description	Recommended Demerits
1	Dirt	10
2	Dirt	50
3	Static (tacky)	10
4	Static	50
5	Static	50
6	Static (branch)	100
7	Dig	10
8	Dig	10
9	Cyan spots	10
10	Cyan spots	10
11	Splash/water spots	10
12	Splash/water spots	1
13	Splash/water spots	50
14	Pressure marks	10
15	Pressure marks	10
16	Pressure marks	50
17	Kink mark	100
18	Kink mark	100
19	Scratches	10
20	Handling scratches	10
21	Handling scratches	50
22	Handling scratches	100
23	Blue dots	10
24	Blue dots	50
25	Blue dots	100
26	Rub line	50
27	Rub line	50
28	White dot	50
29	Fog	50
30	Fog/kink	100
31	Red blob	50
32	Chemical spot	10
33	Chemical spot	50
34	Fog/splice transfer	50
35	Fog/splice transfer	100
36	Emulsion scratch	100