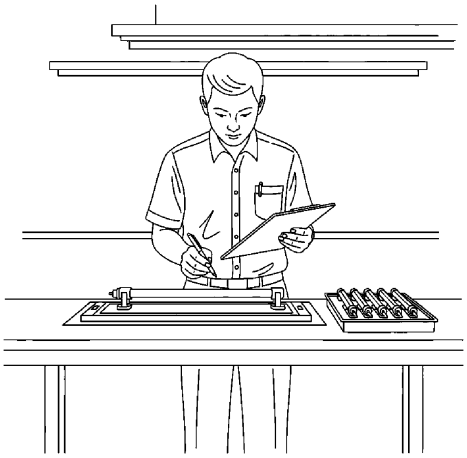
HIGH-VOLUME

WORKSHEET 2 OF 9

Weekly First-Time Pass Rate Tracker

Calculated from IPQC and final inspection records. One row per production day.



Complementary worksheet for
Quality Control Systems
by Ibrahim Anwar

SECTION 1

What This Is For

First Pass Yield drops before the total defect rate moves. That is the diagnostic value of this number: it is the earliest warning that something in the process has changed, weeks before complaints arrive and before the monthly Pareto report catches the shift. This worksheet converts IPQC and final inspection records into a single weekly trend line an operator can read in two minutes.

The operator who needs this sheet is already running inspections — they just have no way to see whether this week is better or worse than last week, or which day of the week is consistently their worst. Five days of FPY numbers in a column make that pattern legible without any chart software.

SECTION 2

Benefits

What you get when you actually run this worksheet on a real situation:

- Detects process degradation in the same week it starts, not after the monthly report surfaces a pattern that has been running for six weeks.
- Separates the Monday startup effect and post-delivery variation from genuine process drift — structurally different problems that need different responses.
- Gives the Quality Lead a concrete number to anchor the weekly briefing: 'FPY this week was 91.4%, down from 94.2% last week. Wednesday is the likely origin.'
- Feeds directly into COPQ calculation: rework units multiplied by COGS gives the week's process failure cost in dollars, not in percentages.
- Builds the rolling baseline that signals when to investigate versus when to accept normal variation — after four weeks, the operator knows what flat looks like for this process.

SECTION 3

Framework To Use

FPY Trend Lens

Read the week's FPY column as a trend, not a snapshot — the direction matters more than any single day's number.

BEFORE	AFTER
{'label': 'Without FPY tracking', 'items': ['Defect totals reported monthly', 'No early warning before complaints arrive', 'Root cause investigation starts weeks after origin', 'Management sees final defect rate, not process drift']}	{'label': 'With weekly FPY tracking', 'items': ['Process shift visible within 2–3 production days', 'Day-of-week pattern identifies structural causes', 'RCA triggered before defects reach customers', 'COPQ translated from % into dollars each week']}

SECTION 4

How To Use

Follow these steps in order. Each one builds on the previous.

1. Pull the day's IPQC records and final inspection sign-off at the end of each shift. Do not reconstruct from memory — use the actual forms.
2. Count units produced (all units that entered the final stage), units that passed first inspection without any rework, and units that required rework before passing or were scrapped.
3. Calculate FPY %: units passed first inspection divided by total units produced, multiplied by 100. Round to one decimal place.
4. Enter one row per production day. If you run two shifts, combine shift totals for the day row — or add a second row labeled with the shift letter if shift-level tracking is needed.
5. At week end, read the FPY column top to bottom. If any single day is more than 3 percentage points below the week's average, circle it and note the most likely candidate cause in the margin.
6. Compare this week's average FPY against last week's. A downward trend across two consecutive weeks is the trigger for an RCA session, not a complaint.
7. Multiply the week's total rework units by your COGS per unit. That dollar figure is the week's process failure cost. Write it at the bottom of the sheet.

SECTION 5

Example Use

A fabrication workshop produces custom metal components. The quality lead starts tracking FPY after three months of IPQC data shows erratic results with no obvious pattern.

Week 1 results: Monday 94.1%, Tuesday 93.8%, Wednesday 88.2%, Thursday 93.5%, Friday 94.0%. Weekly average: 92.7%. Wednesday is circled immediately — 4.5 points below average. The quality lead checks: Wednesday was a day after a new steel plate lot arrived. IQC records show the lot was logged but not measured — the receiving operator was shorthanded.

The quality lead does not open a CAPA yet. One data point is not a pattern. But the new lot is flagged for dimensional measurement on Thursday before it re-enters the process.

Week 2 results: Monday 94.3%, Tuesday 93.9%, Wednesday 92.1%, Thursday 91.8%, Friday 90.6%. Average: 92.5%. The declining trend Thursday-Friday is new. Both days used material from the flagged lot. Measured hardness on a sample: 12% below specified range.

The lot is placed on hold Friday afternoon. Rework units for week 2: 34 units at $4.20 COGS each = $142.80. Replacement lot ordered. Week 3 FPY returns to 94.1% average. The IQC receiving procedure is updated: dimensional and hardness check required for all steel plate lots before warehouse entry. Estimated cost of the two-week event: $142.80 in rework plus 3 hours of quality lead investigation time. Cost of the same event running for a full month before detection: closer to $570 in rework plus the first customer complaint from parts produced from that lot.

SECTION 6

The Worksheet

Tear this out, copy it onto a fresh sheet, or fill it in directly.

Weekly First-Time Pass Rate Tracker

Calculated from IPQC and final inspection records. One row per production day.

DATE	UNITS PRODUCED	UNITS PASSED FIRST INSPECTION	UNITS REWORKED	FPY % (PASSED ÷ PRODUCED)

SECTION 6 (CONTINUED)

Reflection Prompts

After filling in the worksheet on the previous page, work through these.

1. Plot the FPY column across the week. Is the trend flat, rising, or falling? A drop of more than 3 percentage points from Monday to Friday without a known cause is a signal — not a crisis, but a process condition worth investigating before next week.

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2. Which day of the week had the lowest FPY? Was it Monday (startup effect), a shift handover day, or after a material delivery? The pattern across four weeks usually points to one structural cause.

SECTION 7

Tips and Traps

TIPS

- Calculate FPY from actual inspection records, not from memory or operator estimates. A number that is estimated looks the same on this sheet as a number that is measured — but only the measured one tells you anything real.
- Keep four weeks of this sheet in one folder. The single-week view shows which day was worst. The four-week view shows whether that day is structurally worst or was a one-off.
- Convert rework units to dollars at the bottom of every weekly sheet. The percentage means something to a quality manager. The dollar amount gets management's attention in a Monday briefing.
- If Monday FPY is consistently 2–3 points below Tuesday, that is startup effect — machines, materials, and operators need a warm-up period. That is a different investigation than a mid-week drop.

TRAPS

- Combining inspection data from multiple product types into one FPY calculation. If you run three SKUs, track FPY per SKU separately — a strong performer can mask a failing one in a combined number.
- Treating a single low-FPY day as an anomaly and moving on without noting the candidate cause. The cause is most identifiable the same day. Waiting a week to investigate means the machine log, material lot record, and shift roster are still fresh — waiting two weeks means they may not be.
- Stopping the tracker in weeks where production is low. Low-volume weeks often have higher FPY variation, which is exactly the data needed to understand normal baseline noise versus real process signals.

SECTION 8

Appendixes

Appendix A — FPY Benchmarks by Business Type

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Use these as rough orientation only — your process baseline
is built from your own four-week rolling average, not industry averages.

Consumer packaged goods (food / snack)     : typical 90–96% FPY
Fabrication / light manufacturing          : typical 88–95% FPY
Garment / textile (cut-and-sew)            : typical 82–92% FPY
Leather craft (handmade, mixed ops)        : typical 78–90% FPY
Printing / packaging conversion            : typical 91–97% FPY

A business below its category's lower bound on a sustained basis
(3+ consecutive weeks) likely has an uncontrolled process variable.
A business above the upper bound consistently is either measuring
incorrectly or reworking units before they reach the inspection point.
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Appendix B — Weekly COPQ Quick Calculation

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Rework cost this week:
  Units reworked  x  COGS per unit  =  $________

Scrap cost this week:
  Units scrapped  x  COGS per unit  =  $________

Complaint replacement cost (if any this week):
  Units replaced  x  (COGS + return shipping)  =  $________

Total weekly process failure cost:
  $________ + $________ + $________  =  $________

Multiply by 52 for annualized run rate.
Compare against the cost of one process improvement action.
If the annual run rate exceeds $2,000, that improvement pays for itself.
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CONFIRMATION

WHERE THIS WORKSHEET COMES FROM

Quality Control Systems

Consistent Quality Is the Result of a System, Not Inspection

by Ibrahim Anwar

This worksheet is one of nine in the *Quality Control Systems* companion worksheet pack. The full pack is grouped into three categories: high-volume worksheets you can run weekly, niche-search worksheets for rare but high-value situations, and specific-case worksheets that walk you through a single concrete scenario.

Every framework, decision filter, and figure used in these worksheets is drawn from the chapters of the source book. The book sets the diagnosis, the worksheets give you the form to act on it.

Available on Google Play Books

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