

HELMETSURE TEMPLATE

Helmet Replacement Decision Template

A structured S5 diagnostic worksheet for deciding whether a helmet should remain in service, be corrected and re-tested, receive further evaluation, or be replaced.



Core diagnostic question: Does the available history, observable condition, and relevant replacement evidence support keeping this helmet in service, or does the evidence support correction, further evaluation, or replacement?

1	2	3	4	5
Define	Inspect	Score	Decide	Re-test

Purpose

Use this template to determine whether a helmet should be kept in service, corrected and rechecked, evaluated further, or replaced based on its known history and observable condition.

The tool follows the S5 diagnostic structure: one central problem, controlled variables, quantitative evidence collection, guided analysis, and a testable next action.

Important Boundary

This template does not prove remaining protective performance, detect every hidden defect, reproduce laboratory testing, or guarantee how a helmet will perform in a future impact. When manufacturer instructions identify a replacement condition, follow those instructions.

PHASE 1 Research Protocol

1. Central Problem Entity

Uncertain Helmet Replacement Need

The entire assessment focuses on one question:

Does the available evidence indicate that this helmet should be replaced now, or does it remain a candidate for continued use subject to any required correction, monitoring, or further evaluation?

Do not broaden this assessment into a general product review, certification audit, comfort review, or buying comparison.

2. Helmet Identification Record

Identify the exact helmet before making a replacement decision.

Helmet brand: _____

Helmet model: _____

Model variant: _____

Helmet type / intended activity: _____

Size: _____

Manufacturing date / date code: _____

Purchase date, if known: _____

First-use date, if known: _____

Serial / batch / production code: _____

Certification / standard markings present: _____

Current owner: _____

Date of assessment: _____

3. Problem Statement

The continued serviceability of this helmet is uncertain because its impact history, physical condition, service life, retention system, environmental exposure, or other relevant replacement factors require structured evaluation.

4. Primary Objective

To determine whether the available evidence supports continued use, correction and re-testing, further evaluation, or replacement of this helmet.

5. Decision Boundary

This template evaluates replacement-related evidence involving:

- ☐ Known crash or impact history
- ☐ Shell condition
- ☐ Impact-liner condition
- ☐ Retention-system integrity
- ☐ Helmet age and service history

- ☐ Environmental or chemical exposure
- ☐ Missing or damaged components
- ☐ Modifications or repairs
- ☐ Available manufacturer replacement guidance

It does not independently determine:

- ☐ Laboratory impact performance
- ☐ Remaining protective capacity
- ☐ Hidden internal damage
- ☐ Certification validity
- ☐ Future injury outcome
- ☐ Legal compliance for every jurisdiction
- ☐ Whether a helmet will protect against every impact

PHASE 2 Variable Identification

Evaluate five core replacement variables. Keep fit, cosmetic appearance, hygiene, helmet identity, and manufacturer guidance separate as decision controls.

Variable A — Crash & Impact History

Known Events

Crash or collision: ☐ Yes ☐ No known event ☐ Unknown

Direct impact while worn: ☐ Yes ☐ No known event ☐ Unknown

Significant drop: ☐ Yes ☐ No known event ☐ Unknown

Crushing / compression event: ☐ Yes ☐ No known event ☐ Unknown

Object impact: ☐ Yes ☐ No known event ☐ Unknown

Impact Event Details

Date: _____

Helmet being worn? ☐ Yes ☐ No ☐ Unknown _____

Impact location on helmet: _____

Estimated severity: ☐ Minor / uncertain ☐ Moderate ☐ Significant ☐ Unknown

Visible damage afterward? ☐ Yes ☐ No ☐ Unknown

Description: _____

Impact History Score

Score	Interpretation
0	Major replacement concern — A significant crash, impact, crushing event, or similar event is known and creates a strong replacement concern.
1	Significant uncertainty — Impact history is unknown or an event occurred but its significance cannot be established.
2	Limited concern — A minor event is known, with no obvious major damage identified during the current inspection, but some uncertainty remains.
3	No known relevant event — No known crash, significant impact, crushing event, or similar incident has been identified.

Score A — Crash & Impact History

____ / 3

Variable B — Shell & Structural Condition

Inspect the entire accessible outer shell in strong, even lighting.

Shell Inspection

- ☐ Crack
- ☐ Split
- ☐ Puncture
- ☐ Significant gouge
- ☐ Deep cut
- ☐ Deformation

- ☐ Flattened area
- ☐ Separation
- ☐ Delamination
- ☐ Missing material
- ☐ Major abrasion
- ☐ Damaged vent structure
- ☐ Heat-related damage
- ☐ Chemical-related damage
- ☐ Unusual soft area
- ☐ Major discoloration or deterioration
- ☐ Previous structural repair
- ☐ No obvious structural defect observed

Damage Record

Location: _____

Approximate size: _____

Depth / severity if observable: _____

Photographed? ☐ Yes ☐ No

Shell Condition Score

Score	Interpretation
0	Major structural concern — A crack, puncture, deformation, separation, major material loss, or another serious structural defect is visible.
1	Unresolved structural concern — An abnormality is present but cannot be confidently classified.
2	Minor observable wear — Surface wear exists, but no obvious major structural defect has been identified.
3	No obvious structural concern — The accessible shell appears intact during visual inspection.

Score B — Shell & Structural Condition

____ / 3

Variable C — Impact-Absorbing Liner Condition

Inspect every liner area that can normally be accessed without destructive disassembly.

Liner Inspection

- ☐ Crushing
- ☐ Compression
- ☐ Cracking
- ☐ Denting
- ☐ Permanent deformation
- ☐ Missing material
- ☐ Separation
- ☐ Loose liner section
- ☐ Significant indentation
- ☐ Uneven thickness
- ☐ Brittleness
- ☐ Heat damage
- ☐ Chemical damage
- ☐ Moisture-related deterioration

- ☐ Previous repair
- ☐ Hidden / inaccessible area
- ☐ No obvious defect observed

Liner Record

Location of concern: _____

Description: _____

Comparison with opposite side possible? ☐ Yes ☐ No

Photographed? ☐ Yes ☐ No

Liner Condition Score

Score	Interpretation
0	Major liner concern — Visible crushing, cracking, deformation, missing material, or another serious liner defect is present.
1	Significant uncertainty — An abnormality exists or an important area cannot be adequately assessed.
2	Minor observable wear — Wear is visible, but no obvious major liner defect has been identified.
3	No obvious liner concern — Accessible liner areas appear visually intact.

Score C — Impact-Absorbing Liner Condition

____ / 3

Variable D — Retention & Essential Component Integrity

Assess the parts needed to keep the helmet assembled, adjusted, and retained in normal use.

Strap Inspection

- ☐ Intact
- ☐ Frayed
- ☐ Cut
- ☐ Torn
- ☐ Stretched
- ☐ Heat damaged
- ☐ Chemically damaged
- ☐ Detached
- ☐ Modified

Buckle Inspection

- ☐ Engages normally
- ☐ Releases normally
- ☐ Does not engage reliably
- ☐ Releases unexpectedly
- ☐ Cracked
- ☐ Loose
- ☐ Missing
- ☐ Damaged

Anchor Points

- ☐ Secure
- ☐ Loose

- ☐ Cracked
- ☐ Detached
- ☐ Difficult to inspect

Adjustment System

- ☐ Functions normally
- ☐ Slips
- ☐ Jammed
- ☐ Broken
- ☐ Missing component
- ☐ Not applicable

Essential Components

- ☐ Complete
- ☐ Missing components
- ☐ Damaged components
- ☐ Unapproved-looking replacement components
- ☐ Modified components
- ☐ Condition uncertain

Retention Test

Do accessible strap anchors remain secure? ☐ Yes ☐ No ☐ Uncertain

Does the buckle repeatedly engage? ☐ Yes ☐ No ☐ Uncertain

Does it repeatedly release when intentionally operated? ☐ Yes ☐ No ☐ Uncertain

Does the adjustment mechanism hold its setting? ☐ Yes ☐ No ☐ Not applicable ☐ Uncertain

Retention & Component Score

Score	Interpretation
0	Functional failure — A critical retention or essential component is broken, detached, missing, or unreliable.
1	Significant concern — Wear or abnormal function creates unresolved reliability concerns.
2	Minor condition issue — Minor wear or a potentially correctable issue exists without an obvious critical failure.
3	No obvious functional concern — Accessible retention and essential components appear intact and function consistently during the assessment.

Score D — Retention & Essential Components

___ / 3

Variable E — Service Life, Exposure & Traceability

Record the evidence rather than estimating replacement need from appearance alone.

Manufacturing Information

Manufacturing date identifiable? ☐ Yes ☐ No ☐ Partially

Date / code: _____

Service History

Purchase date known? ☐ Yes ☐ No

First-use date known? ☐ Yes ☐ No

Continuous ownership known? ☐ Yes ☐ No

Manufacturer Replacement Guidance

Manufacturer instructions available? ☐ Yes ☐ No

Replacement interval or replacement conditions identified? ☐ Yes ☐ No ☐ Not found

Relevant guidance recorded? ☐ Yes ☐ No

Guidance summary:

Environmental Exposure

- ☐ Excessive heat
- ☐ Direct sunlight
- ☐ Vehicle-interior heat
- ☐ Fuel
- ☐ Oil
- ☐ Solvents
- ☐ Paint
- ☐ Strong cleaning chemicals
- ☐ Adhesives
- ☐ High humidity
- ☐ Repeated water saturation
- ☐ Extreme cold
- ☐ Unknown storage environment
- ☐ None known

Modification History

- ☐ Drilled
- ☐ Cut
- ☐ Painted
- ☐ Glued
- ☐ Patched
- ☐ Structurally modified
- ☐ Re-lined
- ☐ Re-strapped
- ☐ Modified for accessories
- ☐ Repaired after damage
- ☐ No modification observed
- ☐ Unknown

Service-Life & Exposure Score

Score	Interpretation
0	Major concern — Available evidence shows a replacement condition, serious exposure, major modification, or service-life issue that strongly favors replacement.
1	Significant uncertainty — Important age, history, exposure, or modification information is missing or unresolved.
2	Partial evidence — Most relevant information is available but one or more meaningful uncertainties remain.
3	Strong traceability — Relevant service history, age, exposure, modification history, and manufacturer guidance are reasonably established without an identified major concern.

Score E — Service Life, Exposure & Traceability

___ / 3

DECISION CONTROLS Assessment Controls

These variables can influence perception without proving whether replacement is required. Record them separately.

Control 1 — Fit

A helmet fitting poorly does not automatically establish structural replacement need.

Fit issue present? ☐ Yes ☐ No ☐ Unknown

Control 2 — Cosmetic Appearance

Minor cosmetic wear should not automatically be treated as structural damage.

Cosmetic wear only? ☐ Yes ☐ No ☐ Uncertain

Control 3 — Dirt & Odor

Cleaning or comfort issues should not be confused with structural replacement triggers unless deterioration or contamination is involved.

Primarily hygiene-related? ☐ Yes ☐ No ☐ Uncertain

Control 4 — Helmet Identity

Replacement guidance should correspond to the exact helmet where possible.

Brand: _____

Model: _____

Variant: _____

Control 5 — Manufacturer Guidance

Record the actual available instructions rather than assuming a universal replacement interval.

Manufacturer guidance checked? ☐ Yes ☐ No

Source: _____

PHASE 3 Quantitative Replacement Evidence Log

Use measurable inputs, with qualitative notes for context rather than replacing the core evidence.

Core Scores

Replacement Domain	Score
A. Crash & Impact History	___ / 3
B. Shell & Structural Condition	___ / 3
C. Impact Liner Condition	___ / 3
D. Retention & Essential Components	___ / 3
E. Service Life, Exposure & Traceability	___ / 3
TOTAL	___ / 15

Detailed Replacement Evidence Log

Evidence Area	Finding	Score	Replacement Concern?	Notes
Crash history	_____	0–3	Yes / No / Unknown	_____
Significant drop history	_____	0–3	Yes / No / Unknown	_____
Shell condition	_____	0–3	Yes / No / Unknown	_____
Liner condition	_____	0–3	Yes / No / Unknown	_____
Straps	_____	0–3	Yes / No / Unknown	_____
Buckle	_____	0–3	Yes / No / Unknown	_____
Strap anchors	_____	0–3	Yes / No / Unknown	_____
Adjustment system	_____	0–3	Yes / No / Unknown	_____
Essential components	_____	0–3	Yes / No / Unknown	_____
Manufacturing/service age	_____	0–3	Yes / No / Unknown	_____
Environmental exposure	_____	0–3	Yes / No / Unknown	_____
Modification history	_____	0–3	Yes / No / Unknown	_____
Manufacturer guidance	_____	0–3	Yes / No / Unknown	_____

PHASE 4 Quantitative Analysis & Decision

Analyze the helmet in four steps: calculate the evidence score, check critical replacement overrides, measure uncertainty, and assign a bounded decision.

Step 1 — Calculate the Replacement Evidence Score

Your score: _____

Maximum score: 15

Score	Interpretation
12–15	Strong continued-use evidence — Most assessed domains show no obvious major replacement concern, and uncertainty is relatively limited. A high score cannot override a critical replacement trigger.
8–11	Replacement decision uncertain — One or more condition, history, exposure, age, or component issues remain unresolved.
4–7	Strong replacement concern — Multiple replacement-related concerns or significant evidence gaps are present.
0–3	Major replacement concern — Available evidence contains severe condition problems, major service-history concerns, or critical uncertainty.

Step 2 — Critical Replacement Override

A favorable total score must never override an identified critical condition.

Impact Override

- ☐ Significant crash or impact while worn
- ☐ Significant direct impact to helmet
- ☐ Crushing event
- ☐ Impact event that manufacturer guidance identifies as requiring replacement

Shell Override

- ☐ Structural crack
- ☐ Split
- ☐ Puncture
- ☐ Significant deformation
- ☐ Delamination or separation
- ☐ Serious material loss
- ☐ Significant heat or chemical damage

Liner Override

- ☐ Visible crushing
- ☐ Major compression
- ☐ Crack
- ☐ Permanent deformation
- ☐ Missing material
- ☐ Significant separation
- ☐ Serious deterioration

Retention Override

- ☐ Broken strap

- ☐ Detached anchor
- ☐ Buckle fails to secure
- ☐ Buckle releases unexpectedly
- ☐ Critical adjustment system fails
- ☐ Essential retention component missing

Modification / Exposure Override

- ☐ Major structural modification
- ☐ Drilling or cutting affecting helmet structure
- ☐ Serious chemical exposure
- ☐ Serious heat exposure
- ☐ Unknown repair affecting structural components

Manufacturer Override

- ☐ Manufacturer guidance indicates replacement
- ☐ Manufacturer identifies observed condition as a retirement criterion
- ☐ Manufacturer states the relevant component or damage is not repairable

Any critical replacement condition identified? ☐ Yes ☐ No ☐ Uncertain

If YES: move to REPLACE / STOP USING. Do not use a high numerical score to cancel a critical finding.

Step 3 — Uncertainty Count

- ☐ Crash history unknown
- ☐ Drop history unknown
- ☐ Manufacturing date unknown
- ☐ First-use date unknown
- ☐ Service duration unknown
- ☐ Storage history unknown
- ☐ Chemical exposure unknown
- ☐ Previous repairs unknown
- ☐ Modification history unknown
- ☐ Important liner area inaccessible
- ☐ Component originality uncertain
- ☐ Manufacturer guidance unavailable
- ☐ Other: _____

Total significant unknowns: _____

Step 4 — Identify the Primary Replacement Driver

- ☐ Crash / impact history
- ☐ Shell damage
- ☐ Liner damage
- ☐ Retention-system failure
- ☐ Missing essential component
- ☐ Age / service life
- ☐ Manufacturer replacement guidance
- ☐ Environmental deterioration
- ☐ Chemical exposure
- ☐ Heat exposure
- ☐ Modification
- ☐ Unknown history
- ☐ Multiple combined factors

- ☐ No major replacement driver identified
☐ Other: _____

Step 5 — Replacement Decision

Use the evidence score, override review, uncertainty count, and manufacturer information together.

Decision A — Replace / Stop Using

The available evidence identifies a replacement-level concern. Continued use is not supported by this assessment.

- Use when a critical replacement trigger or other strong replacement-level concern has been established.

Primary replacement reason: _____

Supporting evidence: _____

Required action: ☐ Stop using helmet ☐ Replace helmet ☐ Follow manufacturer retirement/disposal guidance ☐ Other

Decision B — Further Evaluation Required

The available evidence is insufficient to make a confident keep-or-replace decision. Further evaluation is required before continued use is considered.

- Use when an important condition cannot be confidently classified.

Issue requiring evaluation: _____

Appropriate next source: ☐ Manufacturer ☐ Qualified helmet professional ☐ Authorized service/reconditioning provider where applicable ☐ Relevant organization ☐ Other

Decision C — Correct and Re-Test

A potentially correctable issue has been identified. Correct the permitted issue and repeat the relevant inspection before making the final continued-use decision.

- Use only when the issue is limited to something that can appropriately be corrected without treating structural damage as repairable.

Issue: _____

Required correction: _____

Approved replacement component required? ☐ Yes ☐ No ☐ Unknown

Manufacturer instructions checked? ☐ Yes ☐ No

Decision D — History Too Uncertain

No obvious major structural defect was identified during the accessible inspection, but important service-history uncertainty prevents a confident continued-use decision.

- Use when physical inspection does not reveal a clear major defect but critical history remains unavailable.

Primary unknown: _____

Evidence needed: _____

Decision E — Continue in Service With Monitoring

The available evidence does not currently identify a replacement-level condition within the limits of this assessment.

- Use only when no critical replacement trigger is identified, structural areas show no obvious major defect, retention components function, history is reasonably established, and manufacturer guidance does not indicate replacement.

Monitoring item: _____

Next inspection date or trigger: _____

This classification does not mean the helmet is guaranteed undamaged or guaranteed to perform as new.

PHASE 5 Testable Next-Action Protocol**Current Decision**

- ☐ Replace / Stop Using
- ☐ Further Evaluation Required
- ☐ Correct and Re-Test
- ☐ History Too Uncertain
- ☐ Continue in Service With Monitoring

Evidence score: _____

Critical override present? ☐ Yes ☐ No ☐ Uncertain

Primary decision driver:

Most important unresolved issue:

Testable Hypothesis

My hypothesis is that the replacement decision can be confirmed more confidently by obtaining or correcting _____ and then reassessing _____ against _____.

Missing Evidence / Required Action

- ☐ Confirm impact history
- ☐ Confirm manufacturing date
- ☐ Locate manufacturer instructions
- ☐ Confirm replacement guidance
- ☐ Inspect suspected shell area
- ☐ Inspect accessible liner
- ☐ Test retention component
- ☐ Replace manufacturer-approved component
- ☐ Confirm exposure history
- ☐ Confirm modification history
- ☐ Obtain manufacturer evaluation
- ☐ Obtain appropriate professional evaluation
- ☐ Other: _____

Action Plan

Action: _____

Evidence/source needed: _____

Person/organization to contact: _____

Expected evidence: _____

Completion date: _____

Pass Condition

The helmet may move toward a continued-use classification only if:

Fail Condition

The helmet moves toward replacement if:

Re-Test Record

Re-test date: _____

New evidence obtained:

Correction completed, if applicable:

Updated Scores

A. Crash & Impact History

____ / 3

B. Shell & Structural Condition

____ / 3

C. Impact Liner Condition

____ / 3

D. Retention & Components

____ / 3

E. Service Life, Exposure & Traceability

____ / 3

Updated total: _____

Updated critical override: ☐ Present ☐ Not identified ☐ Uncertain

Updated Decision

- ☐ Replace / Stop Using
- ☐ Further Evaluation Required
- ☐ Correct and Re-Test
- ☐ History Too Uncertain
- ☐ Continue in Service With Monitoring

FINAL RECORD Final Helmet Replacement Decision Record**Helmet Identification**

Brand: _____

Model: _____

Variant: _____

Helmet type: _____

Manufacturing date/code: _____

Purchase date: _____

Assessment date: _____

Final Scores

Domain	Final Score
Crash & Impact History	___ / 3
Shell & Structural Condition	___ / 3
Impact Liner Condition	___ / 3
Retention & Essential Components	___ / 3
Service Life, Exposure & Traceability	___ / 3
TOTAL	___ / 15

Final Override StatusCritical replacement trigger: ☐ Present ☐ Not identified ☐ Uncertain

Trigger, if present:

Final Decision

- ☐ REPLACE / STOP USING
- ☐ FURTHER EVALUATION REQUIRED
- ☐ CORRECT AND RE-TEST
- ☐ HISTORY TOO UNCERTAIN
- ☐ CONTINUE IN SERVICE WITH MONITORING

Primary Reason_____
_____**Most Important Supporting Evidence**_____

Most Important Limitation

Required Next Action

Evidence Record

Photograph 1

Area: _____

Finding: _____

Photograph 2

Area: _____

Finding: _____

Photograph 3

Area: _____

Finding: _____

Impact-History Evidence

Source: _____

Information obtained: _____

Manufacturer Guidance

Document/source: _____

Relevant replacement instruction: _____

Date accessed: _____

Modification / Repair Record

Modification or repair identified? ☐ Yes ☐ No ☐ Unknown

Details: _____

QUICK USE Quick Replacement Decision Checklist**Identity**

- ☐ Exact brand/model recorded
- ☐ Variant recorded
- ☐ Manufacturing information checked
- ☐ Service dates recorded where available

Impact History

- ☐ Crash history checked
- ☐ Significant impact history checked
- ☐ Drop history checked
- ☐ Crushing history checked

Structure

- ☐ Shell inspected
- ☐ Accessible liner inspected
- ☐ Suspected damage documented

Retention

- ☐ Straps inspected
- ☐ Buckle checked
- ☐ Anchors checked
- ☐ Adjustment mechanism checked

Service Life & Exposure

- ☐ Manufacturer guidance checked
- ☐ Storage history considered
- ☐ Heat exposure considered
- ☐ Chemical exposure considered
- ☐ Modification history checked

Analysis

- ☐ Five domain scores completed
- ☐ Total score calculated
- ☐ Critical override completed
- ☐ Significant unknowns counted
- ☐ Primary replacement driver identified

Decision

- ☐ Final classification recorded
- ☐ Reason documented
- ☐ Evidence documented
- ☐ Next action recorded
- ☐ Re-test scheduled if required

Replacement Decision Summary

Helmet: _____

Evidence score: _____

Critical replacement trigger: ☐ Yes ☐ No ☐ Uncertain

Primary driver: _____

Final decision: _____

Required action:

Template Boundary

This template answers one specific diagnostic question: Does the available history, observable condition, and relevant replacement evidence support keeping this helmet in service, or does the evidence support correction, further evaluation, or replacement?

The template does not prove remaining protective performance or reveal all hidden damage. It is a structured decision-support worksheet, not a laboratory test or certification.