



Simplified SES

Structural Equivalency is now a function of the portal. The math runs while the team types, every proof sits next to the value it proves, and the scrutineer review starts from a triaged list instead of a workbook.

Lukáš Pacoň

portal.fsczech.cz

August 2026

Where the workbook stopped

Five things the SES workbook could not do

01 **Nothing could be automated**

Every value typed by hand, every check re-read by hand.

03 **A spreadsheet cannot react**

No guidance, no state, no reaction to what the team just entered.

05 **Three tools for one document**

Workbook in Excel, submission through the FSG site, status in a Google Sheet.

02 **The template arrived late — with bugs**

Teams lost weeks, and a fix meant redistributing the file.

04 **E-mail round-trips for every correction**

Every correction required another e-mail round-trip.

Because we don't have enough people, we need to automate it.

What review costs today

Across the season, before anyone has re-reviewed anything.

250

submissions to review every season

4–6_h

for the **first** pass on a single SES

~1 250

scrutineer hours a season, before a single re-review

SES lives in the portal

One document, one status, one place.

One document, one status

Season, car and construction class on top; the submission state is the page, not a cell.

The team knows what is missing

Tests without photos, materials without a datasheet, sections not yet green — counted, not guessed.

Existing workbooks can be imported

Nobody starts from an empty form; last season's file is a valid starting point.

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VEHICLE COMPLIANCE

Structural Equivalency (SES)

Complete all SES sections, upload required photos and proofs, then submit for review.

Season 2026 — Car 1

Submission status

RETURNED

CONSTRUCTION CLASS

Monocoque

Tests, materials & datasheets

Sections green + photos

Submitted

Scrutineer review

Approved

15 Physical tests

14 without photos

10 Material library

materials · open to edit

1 section was returned to you

Read the scrutineer's comment in each returned section, fix what is asked, then press **Send back to review** on the section — nothing goes back until you do.

T3.17.3

How to complete your SES — guide

Show

Sections

23 / 25 checks passed

Complete every section and upload the required proof photos.

RULE	SECTION	CHECKS	REVIEW	PHOTOS	
CHASSIS PICTURES1 / 1 green					
Cover	Chassis Pictures	PASSED	APPROVED	8 / 3	Open
HOOPS & BRACING5 / 5 green					
T3.9	Main Roll Hoop Tubing	PASSED	APPROVED	1 / 1	Open
T3.10	Front Roll Hoop Tubing	PASSED	PENDING	1 / 1	Open
T3.11	Main Roll Hoop Bracing Tubing	PASSED	PENDING	1 / 1	Open
T3.11.5	Main Hoop Bracing Support	PASSED	PENDING	4 / 1	Open
T3.12	Front Hoop Bracing	PASSED	APPROVED	3 / 1	Open

The math runs while you type

Section form — inputs left, live checks right.

Calculations with FSG Excel parity
Teams cannot tamper with a check, reviewers never recalculate one.

Red is allowed

A failing section can still be submitted with a written explanation, on the section itself.

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T3.17.3 — Impact Attenuator Anti-Intrusion Plate

Back to overview

This section was returned by the reviewer — see the comments below, fix what is asked, then send it back.

Send back to review

Inputs

Values from your chassis design — checks update live while you edit.

Material

ANTI-INTRUSION PLATE MATERIAL

Alternative AIP — equivalence proven by physics

Impact Attenuator

STANDARD FSAE IA?

NO

Yes when you run the standard FSAE foam attenuator from the rules — its performance is accepted without your own crash-test data.

IMPACT ATTENUATOR HEIGHT [mm]

100

IMPACT ATTENUATOR WIDTH [mm]

200

HEIGHT OF IA VOLUME ABOVE GROUND [mm]

342

COMPLIANCE SHOWN?

Yes

Whether the anti-intrusion-plate requirements are demonstrated in your Impact Attenuator Data report.

Edit

Photos / CAD proofs

2 / 1 required

Attach drawings, CAD screenshots or photos supporting this section.

SCR-20260730-rynj.p...

remove

SCR-20260730-rymm...

remove

Checks

Evaluated automatically from your inputs. A section that cannot pass may still be submitted — write why below and a scrutineer decides.

Submitting with red checks — your explanation:

We are using a custom one.

EditRemove

CHECK	REQUIRED	ACTUAL
Baseline design (D23)	Steel ≥ 1.5 mm OR Aluminium ≥ 4 mm with standard FSAE IA	NO
Compliance shown	Yes	Yes

Comments

Discussion thread between your team and the scrutineer reviewing this section.

Lukáš02.08.2026 12:50

Please provide additional informations.

Write a comment for the reviewer...

Post comment

Change history

Every input change is logged — the reviewer sees what changed since their last look.

31.07.2026 17:41	Test	fail_justification: — → We are using a custom one.
30.07.2026 20:40	Test	material_type: — → Alternative AIP
30.07.2026 20:40	Test	standard_fsaе_ia: — → NO
30.07.2026 20:40	Test	ia_height_mm: — → 100
30.07.2026 20:40	Test	ia_width_mm: — → 200

05

A tested panel becomes a material

Physical tests and the material library, computed on save.

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VEHICLE COMPLIANCE

SES Physical Tests

Upload force-displacement curves and enter manual measurement points for three-point bend and perimeter shear tests.
Metrics are computed on save to FSG equivalency rules.

Physical Test Samples

Upload force-displacement curves and enter manual two-point measurements for three-point bend and perimeter shear tests.

Back to overview

Materials

+ New sample

How to enter a physical test

You broke the panel on a testing machine — this page turns its logged data into material properties and rule checks. No hand calculations needed.

Show

Samples

One row per broken specimen — its computed properties feed the material library and the section checks.

15 total

TYPE	LABEL	BLOCK	CHECKS	E / Σ	ENERGY	CURVE	PHOTOS	
Pull-out	pullout axial	Axial	PASS	15,002 N	—	300 rows	0	EditDelete
Pull-out	pullout perpendicular	Perpendicular	PASS	15,001 N	—	300 rows	0	EditDelete
Shear	shear_1 - vsis	Block 1 — VSIS / SIS	PASS	σ : 74.12 MPa	—	300 rows	0	EditDelete
Shear	shear_2 - FHBS	Block 2 — FBH support	PASS	σ : 49.54 MPa	—	300 rows	0	EditDelete
Shear	shear_3 FBH	Block 3 — Front bulkhead	—	σ : 266.03 MPa	—	300 rows	0	EditDelete
Shear	shear_4	Other	—	σ : 104.67 MPa	—	300 rows	0	EditDelete
Shear	shear_5	Other	—	σ : 67.68 MPa	—	300 rows	0	EditDelete
Shear	shear_6	Other	—	σ : 136.59 MPa	—	300 rows	0	EditDelete
Bend	bend_1_vertical-sis	Block 1 — VSIS / SIS	—	E: 74.57 GPa UTS: 277.1 MPa	86.67 J	300 rows	1	EditDelete

Upload the curve

Force–displacement data straight from the testing machine, plus the two manual measurement points.

Properties are computed

Gradient, I, E, UTS, shear and absorbed energy — derived on save to the FSG equivalency rules.

The library feeds every section

A material with its datasheet appears in the dropdown of every form — declare once, reuse everywhere.

No more tracking sheet

Every T-rule of the document, with its state.

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Sections

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T3.12	Front Hoop Bracing	PASSED	APPROVED	3 / 1 Open
FRONT IMPACT		1 RETURNED		2 / 3 green
T3.13	Front Bulkhead	PASSED	PENDING	1 / 1 Open
T3.17.3	Impact Attenuator Anti-Intrusion Plate	FAILED	RETURNED	2 / 1 Open
T3.14	Front Bulkhead Support	PASSED	PENDING	1 / 1 Open
SIDE IMPACT				1 / 1 green
T3.15	Side Impact Structure	PASSED	PENDING	2 / 1 Open

Returned sections unlock themselves

The team fixes what was asked, saves, and sends it back for review.

Rule by rule, in one place

Checks, review state and the photo count for every section.

Review starts already triaged

The scrutineer side of the same document.

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Submitted Equivalency — Review Queue

All teams that have submitted a Structural Equivalency (SES) or Accumulator Structural Equivalency (ASES) for review.

Attention pills: u re-review = returned sections the team has fixed (quick diff check) · N/A = declarations needing a judgement call · ⚠ = calculator advisories · AI = photo checks flagged for a human look · ! red = submitted with failing checks and a written explanation

TEAM	DOC	CAR	CLASS	SUBMITTED	ASSIGNEE	PENDING	RETURNED	APPROVED	ATTENTION	STATUS
Test EV	SES	1	monocoque	01.08.2026 00:50	Lukáš Pacoň (me)	20	1	4	u 1 re-review ⚠ 2 ! 2 red AI 2	RETURN

A queue with attention pills

Re-reviews, N/A declarations, red-with-explanation and AI flags, counted per submission.

AI pre-review is advisory

It proposes an order and cross-reads photos and datasheets. Judgement stays with the reviewer.

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Test EV

Car 1 · Monocoque

Reviewer: Lukáš Pacoň (me)

RETURNEDBack to queue

How to review

Show

AI pre-review

Re-run pre-review

A triage plan over everything the portal already checked — open these first, then work the rest in order. Advisory only.

Two submitted-failing sections lack verifiable compliance evidence, with several photo, dimensional, and material-documentation issues needing review.

HIGH

T3.17.3 Impact Attenuator Anti-Intrusion Plate — The section was submitted failing, and “We are using a custom one” does not identify the custom plate’s T3.18 test/IAD evidence or a specific compliant design correction.

HIGH

T3.16.6/T3.17.5 Primary Structure Attachments — The section was submitted failing, and “It is laminated to the monocoque” does not identify an applicable equivalency test/report or concrete design correction.

HIGH

T4.5 Safety Harness Attachments — The proof photos show a composite laminate/panel lap-belt attachment, while the declared square steel lap-belt tube is not shown.

HIGH

Material: Aluminium 1 - 7019 — The material datasheet check was only partial because welded yield strength and welded UTS were not found.

MEDIUM

T3.14 Front Bulkhead Support — The 340.64 mm panel height exceeds the 325 mm tested-panel reference, so the reviewer should confirm that the T3.6 test panel represents this panel.

MEDIUM

T3.13 Front Bulkhead — Both cutout width and cutout height were flagged as outside their typical plausibility ranges and should be checked for entry errors.

LOW

EV5.5.8 TSAC Attachments — The y-direction front-attachment image labels its equation F_front bracket,x, suggesting a likely notation error that should be verified.

LOW

Cover — Chassis Pictures — Confirm that identical composite layups use identical colour codes across all pictures and match the laminate table.

Most calculator sections passed, and the available photo checks are generally clear. The main concerns are the two explicitly failing sections with non-verifiable justifications, the harness-attachment photo/input mismatch, and incomplete welded-strength documentation for Aluminium 7019. No AI checks were pending when this digest was built.

Built 01.08.2026 12:39

FSCzech switches. Others can join

What the change touches — and what it deliberately does not.

The rules do not change

FSG equivalency rules, FSG parity on every formula. Your process stays; only the carrier changes.

Who runs it

FS Czech operates and maintains the portal. For a joining event there is no licence and no infrastructure to set up. You will pay only for AI if you want to.

Each event stays in control

An event gets an admin account, creates its reviewers, decides who sees SES or ASES, and picks its own start list. Its reviewers see its teams' documents — nothing else.

This is where SES runs from 2027

It's open for everyone

portal.fsczech.cz

Lukáš Pacoň · Head of TI, FS Czech

NOW

Testing with real submissions

Open to anyone who wants to try it.

OCTOBER

Available to teams

Workbook import included, so a team can start from last season's file.

SEASON 2027

SES runs here for FS Czech

Other events welcome to run alongside — the same document, your own reviewers.

ASK

Tell me what would block you
